Fan Selection Application

Instructions for Air Turbine Propeller's Axial Fan Selection website
www.axialfanselection.com

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Air Turbine Propeller Company

22329 Perry Highway - Zelienople, PA 16037
(724) 452-9540 Office - (724) 452-0961 Fax

Company Website: www.airturbine.com

Axial Fan Selection Website: www.axialfanselection.com

(Released 6/4/12, version 1.0.0)

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Air Turbine Propeller

Air Turbine Propeller Company is a leading manufacturer of PROPELLER TYPE FAN BLADES for the Heating, Ventilation, Air Conditioning and Refrigeration markets. Our axial fans are ideally suited for INDUSTRIAL, COMMERCIAL, MARINE, FOOD, and AGRICULTURE use. Air Turbine's strong reputation in the HVAC&R market is based on Quality, Reliability, and Fast and Dependable Delivery.

- Propeller Diameters – 8 inches to 96 inches
- Design – Seven Styles, 4-to-16 Blades, High and Low Pressure
    - CW, CCW, INT, EXH, and Reversible
- Blade Materials – From 20GA to 7GA
    - Carbon Steel
    - Galvanized Steel
    - Fiberglass
    - Aluminum – Spark Proof / Explosion Proof
    - Stainless Steel – Various Grades
- Finishes
    - Gray Enamel Paint
    - Epoxy Paint
    - Bright Zinc Plate
    - Hot-Dip Galvanizing
    - High Temperature Aluminum Paint
    - Custom Finishes Available
- Quality
    - Rugged, Reliable Construction including Solid Weld!
    - High Temp Applications
    - Corrosion Resistant Applications
    - Fans are Expertly Tracked and Balanced
- Quantities
    - Order One or Hundreds of Propellers
- Lead-Time
    - Exceptional Industry Lead-Times
    - "Quick Ship" Program Available -3 DAYS OR LESS!
- Technical Assistance
    - Fan Selection Assistance via Proprietary Software
        - Optimize Performance, Efficiency and Noise
- Customer Service
    - Professional and Reliable Service Partner
- Business Focus
    - Industrial – including Engines, Ovens, Generators
    - Commercial
    - Marine
    - Government & DOD
    - Agriculture
    - Food
- Domestic and International Shipments
- Tiered Pricing for Volume Purchases

For additional information about Air Turbine Propeller, please visit our website at www.airturbine.com.

Or you may call us at (724) 452-9540 and we will answer any questions you may have.

About Air Turbine Propeller's Fan Selection - Application Overview

Air Turbine Propeller's fan selection application has been used for decades. When it was first rolled out to our customers, it was a one of a kind. The programs provided our customers and prospects access to performance and sound data for our axial fan blades.

Originally this was a program written in visual basic and distributed by CD or obtained by downloading the files. Since VB hasn't been supported for some time, the old fan selection program would only run on a PC, and on a PC that was running the XP version of Microsoft Windows or in XP mode under Windows 7. Either way, it had become a bit cumbersome for our customers use the program.

With this latest release, the platform is now web-based and can be utilized by anyone with internet access. While optimized to run under the Fire Fox web browser (available for download here http://www.mozilla.org/en-US/firefox/new/) you should also see favorable results with Chrome, Explorer and Safari. Any differences should be minor and only affect the formatting or display of text and graphics.

Since the older version required Windows XP, users of MAC products could not install the program. By moving the fan selection software to a web-based application those who do not use a Windows operating system can now use the application.

Purpose…

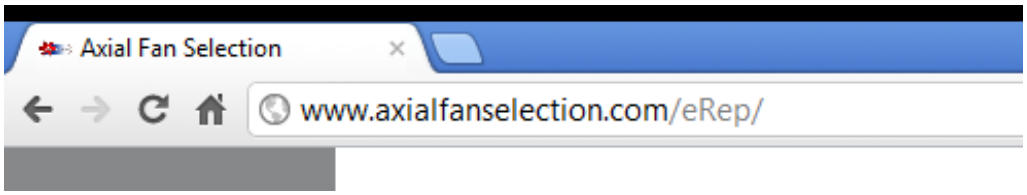
The purpose of the fan selection application is provide customers with an automated fan selection engine that chooses the optimum fan based on specific requirements, access to fan performance data and fan curves, and to provide pricing.

This release of our Fan Selection Application adds some additional functionality in terms of information storage. In the previous release, there was no way to store previous selections. With the launch of this web-based application, you may now create PROJECTS and within these PROJECTS create schedules of fans/fan selections that you may save and return to later.

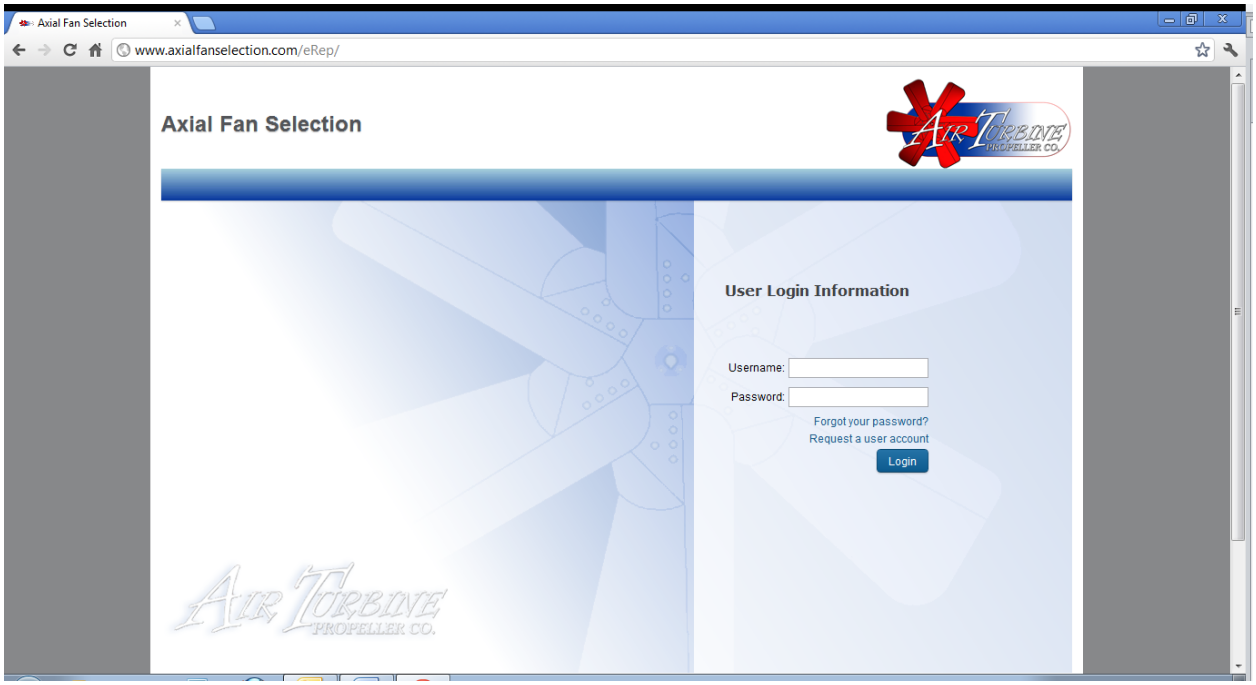
Note: You will want to always allow popups for the fan selection website with whatever browser you are using.

Obtaining Logon Credentials (first time access to the application)

1. On your browser, enter the following web page address:

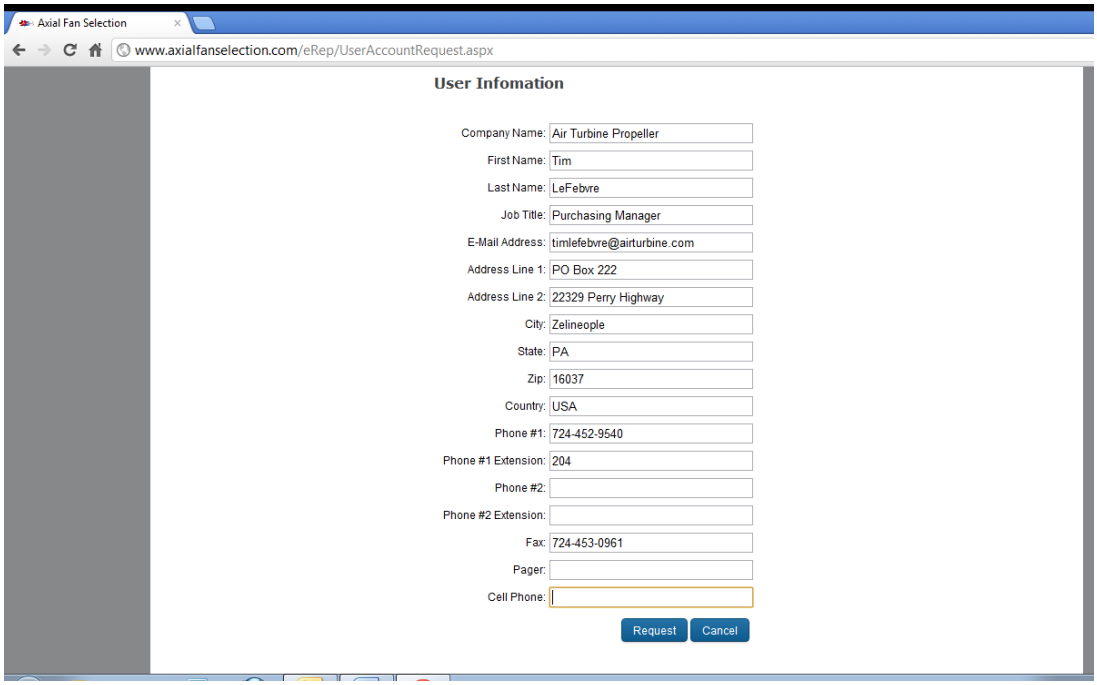


2. The following screen will appear.

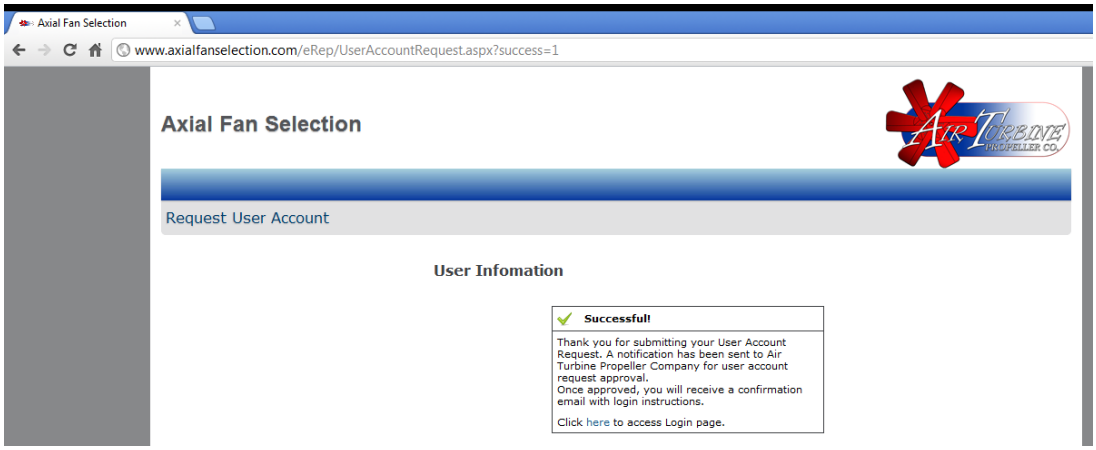


3. Click on REQUEST A USER ACCOUNT (If you don't already have logon credentials)

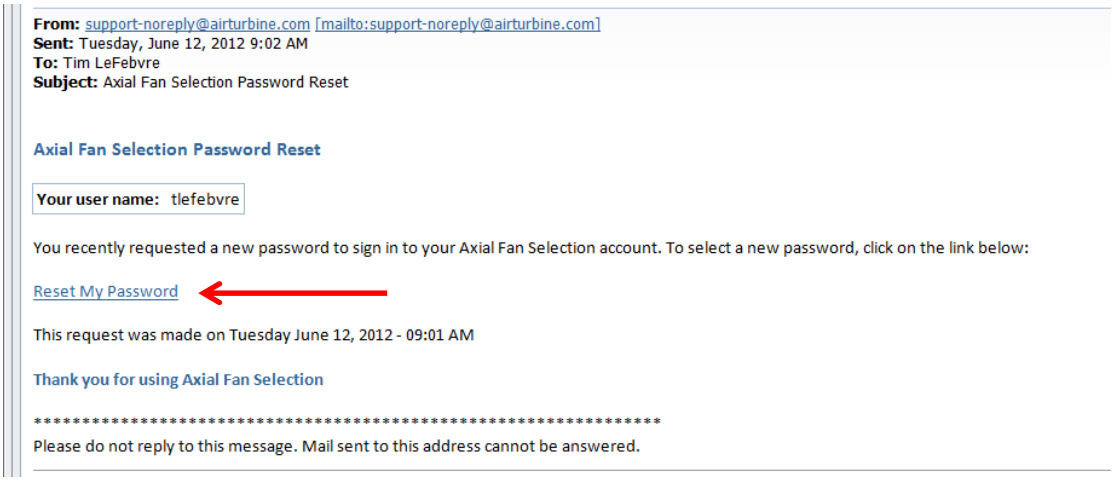
4. Complete the form and click on REQUEST.



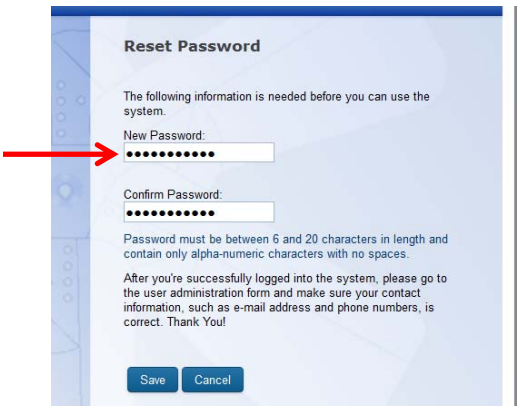
5. You will receive the following confirmation of from transmission. Please allow up to 24 hours for Air Turbine to process your request for logon credentials.



RESETTING YOUR PASSWORD - You will receive an email with your assigned USERNAME and a link to a webpage where you will select a password. Click on RESET MY PASSWORD.



Enter your password, confirm the password and click SAVE.



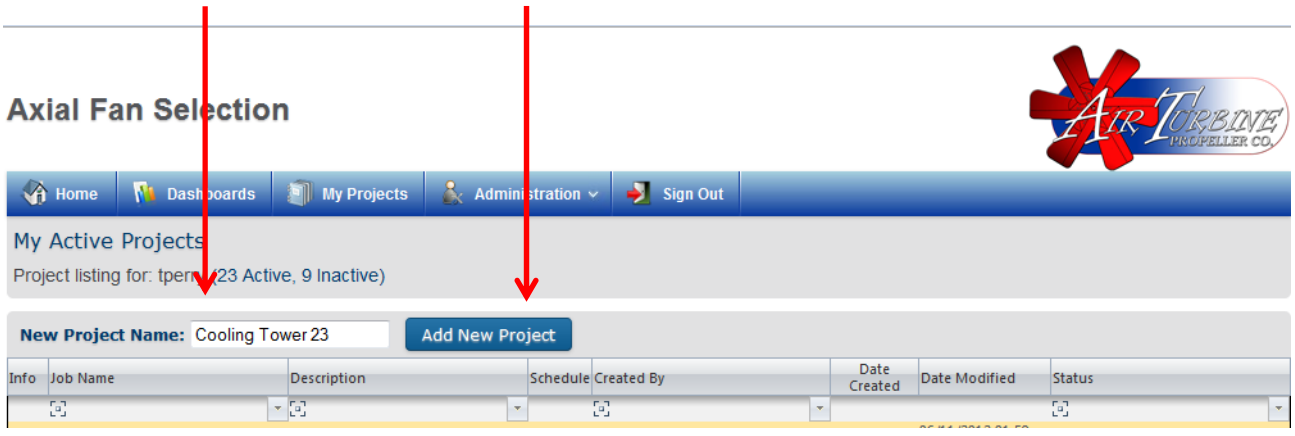
LOGGING IN - After successfully selecting a password, you will be able to logon to Air Turbine Propeller's Axial Fan Selection Application. You will remain logged in for 120 minutes before the system terminates your session. Go ahead and login. You'll access the screen below by typing the following web address into your browser: http://www.axialfanselection.com.

Creating A PROJECT

This release of our Fan Selection Application adds some functionality in terms of information storage. In the previous release, there was no way to store previous selections. With the launch of this web-based application, you may now create PROJECTS and within these PROJECTS create schedules of fans/fan selections that you may save and return to later. This can be particularly helpful to engineers/designers that may have multiple projects, in differing environments, and need to set different air densities.

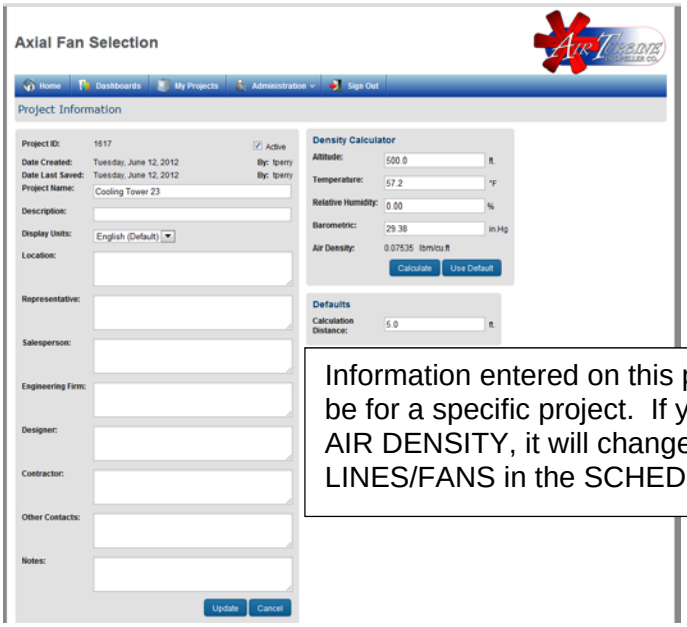
1. In order to begin, you must first create a PROJECT.

   First, enter a NAME for the project. Then click on ADD NEW PROJECT.



2. The screen below is where you will set up the PROJECT, including descriptive information, and establish project-level defaults for the following:
   - Be sure to set your units to METRIC if desired. The default is IMPERIAL.
   - Make AIR DENSITY CORRECTIONS. Be sure to click on CALCULATE if you enter new values.
   - Set the CALCULATION DISTANCE for sound power data. The default is 5ft.

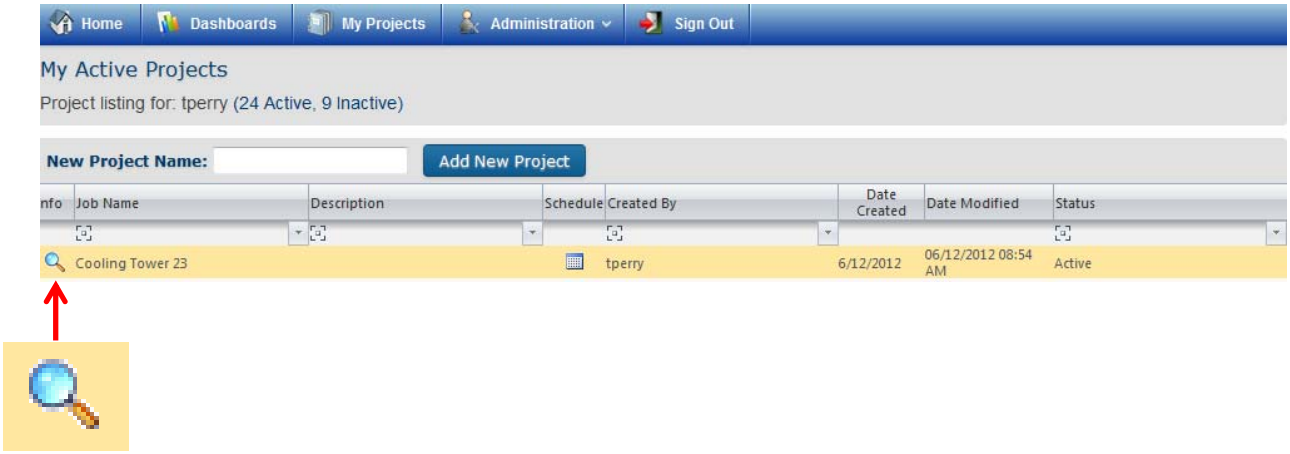
When you are finished, click on UPDATE at the bottom of this screen. Should you return to this screen to make changes in the future, you will need to click on CALCULATE for any changes to AIR DENSITY and also click on UPDATE if any changes, including a recalculation of AIR DENSITY, are made.



Information entered on this page should be for a specific project. If you change the AIR DENSITY, it will change it for all LINES/FANS in the SCHEDULE.

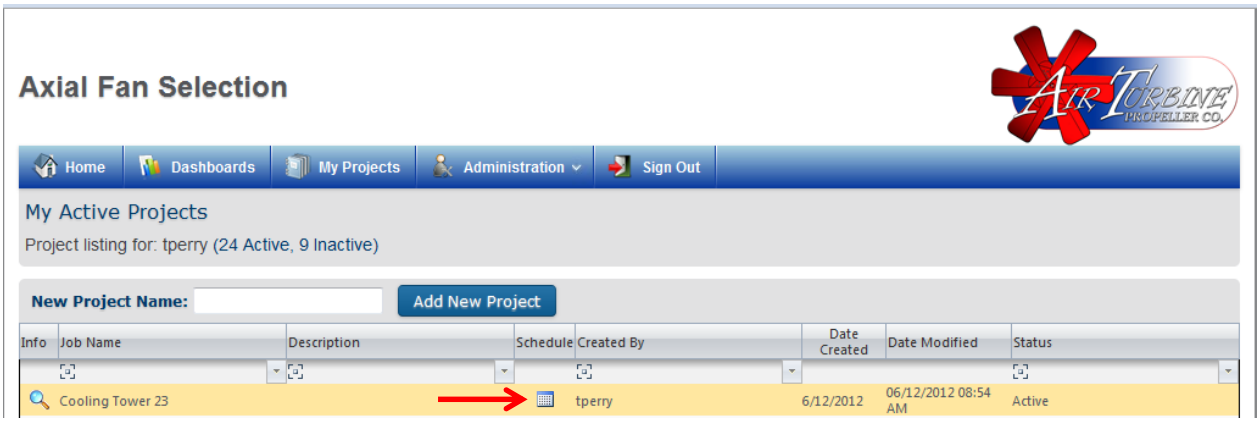
Your PROJECT has now been added. Each additional project you create will be shown on this screen.

You may return to, and edit, PROJECT level information by clicking on the magnifying glass icon.

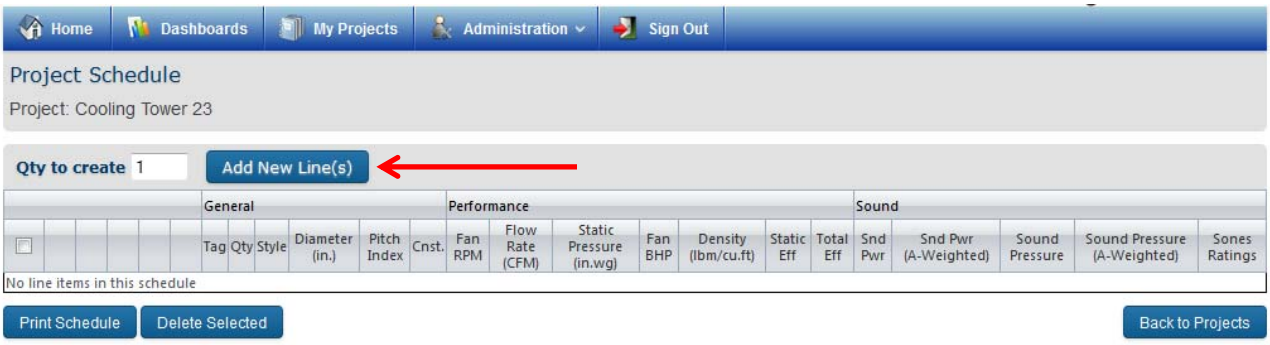


Creating a SCHEDULE of Fans – FAN SELECTION

1. Now, it is time to add LINES or FAN SELECTIONS to your PROJECT. To do so, click on the SCHEDULE ICON, in the column labeled Schedule.



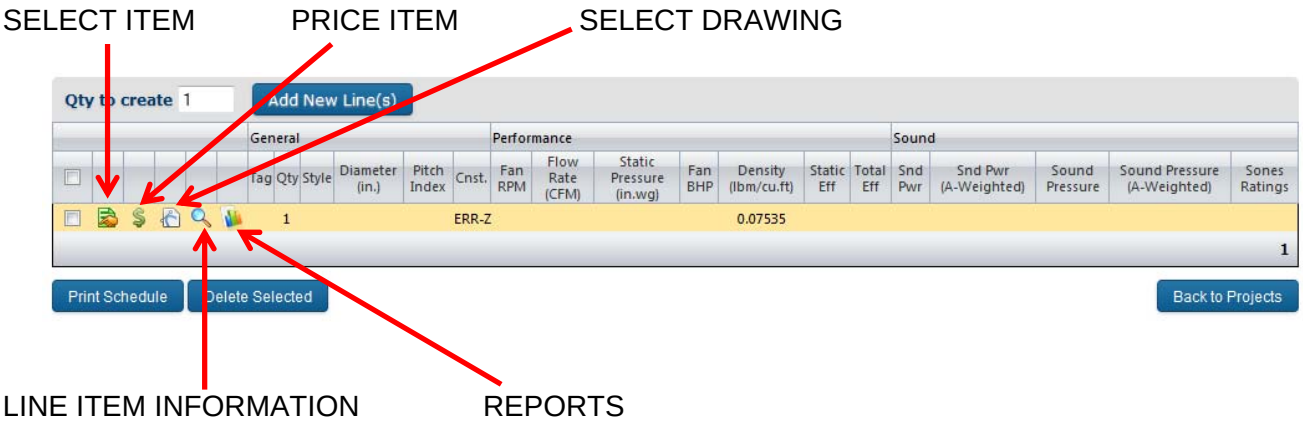
2. The PROJECT SCHEDULE screen appears. It is here that you will begin the fan selection process. To begin, click on ADD NEW LINE(S).



This version of the fan selection software provides for a schedule of fans, as mentioned above. It also, provides some performance information on the PROJECT SCHEDULE screen for quick reference.

3. You will see a LINE has been added.

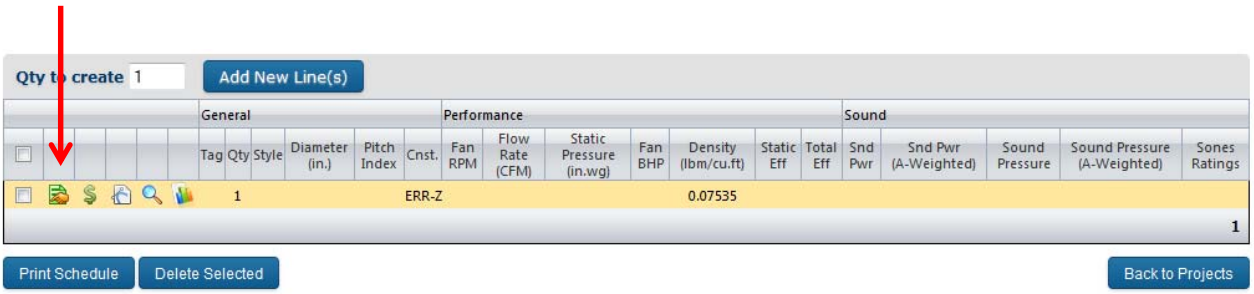
   First, let's identity all the icons on this page. Hovering over the icons will also provide a description.



- SELECT ITEM
  - Manual Selection
    - You will need to provide FAN STYLE, DIAMETER, AND PITCH INDEX
  - Auto/Optimized Fan Selection
    - You will need to provide some of the following physical or performance requirements in order to select a fan.
- PRICE ITEM
  - Typically you will price and item once you've selected it. However, you can go directly to this feature. In order to obtain a price you will need to provide the following information:
    - FAN STYLE, DIAMETER, PITCH INDEX, CONSTRUCTION/DUTY RATING, BORE SIZE, HUB/BUSHING TYPE, BUSHING POSITION, ROTATION, AND MATERIAL. All of this information is required to order a fan. Without it, the correct fan may not be produced.
    - If you begin with pricing, you will not have any performance data when returning to the above schedule, if you elect to save the fan. You can still obtain performance data by clicking on the SELECT ITEM above and performing a MANUAL SELECTION (PROP SELECT button)
- SELECT DRAWING
  - As with PRICE ITEM, you would typically begin by selecting a specific fan before generating a drawing. However, you may start select a drawing first if you wish. Keep in mind that you performance data or pricing will be calculated. DRAWINGS are not to scale and provide only a generic sketch and assign dimensions based on the user's selections. At this time we do not have scale mechanical drawings of our propellers. Also, not all fans and fan features are represented.
- LINE ITEM INFORMATION
  - The primary purpose of this screen is to input the desired quantity for line. Air Turbine Propeller has tiered pricing based on the annual sales and the quantity of fans ordered. If the user inputs the quantity, the application will provide the appropriate pricing, and highlight it on the pricing report.
- REPORTS
  - The user may select from any of the following, or all, to generate the desired report package: Engineering Data, Fan Curve, Drawing and Pricing Summary. The files download options are PDF, Excel and Word formats.

4. SELECT ITEM

Click on the left most ICON (Select Item icon).

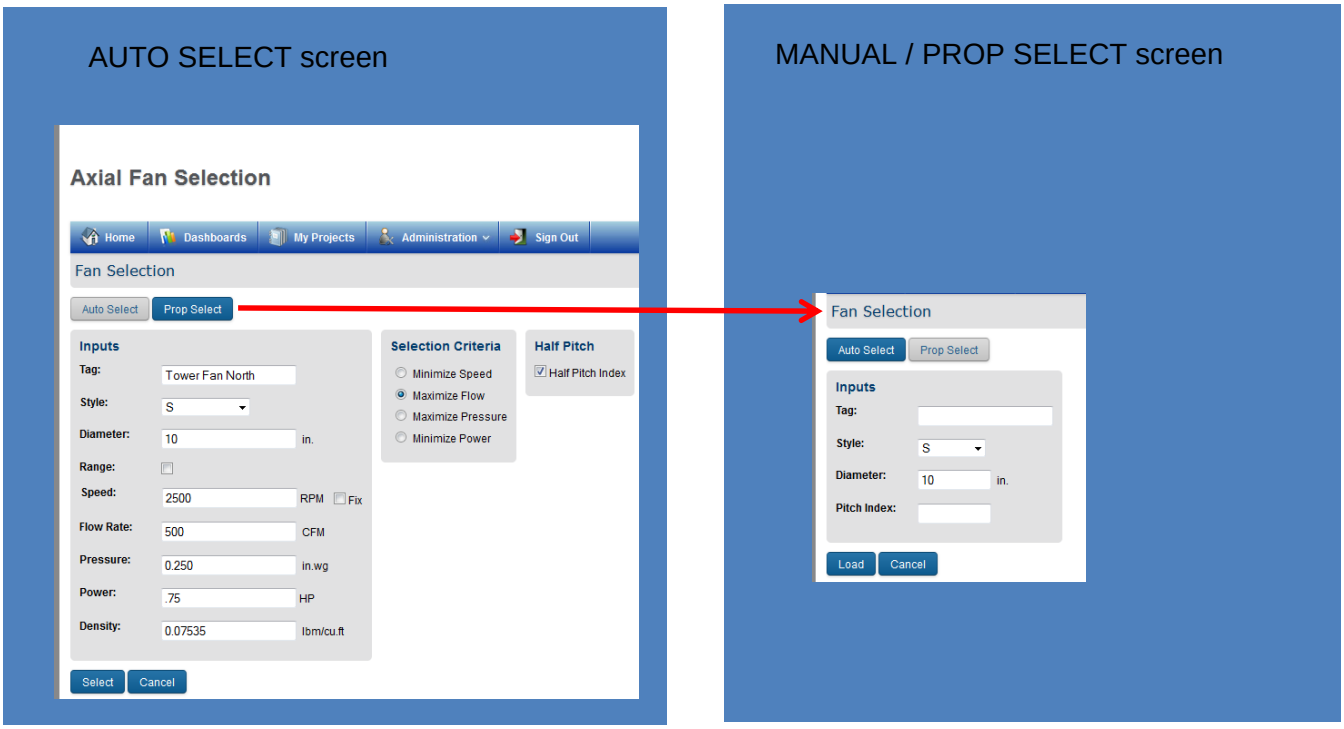


The screen on the left appears. You arrive at the AUTO SELECT screen by default. This is the screen you will use to enter your performance and/or physical requirements to select a fan. This screen should look familiar to you if you have used the previous version of our fan selection software.

If you know the fan you'd like to load, you can click on PROP SELECT and the screen to the right will appear. Again, in order to load a prop manually, you will need to know the FAN STYLE, DIAMETER and PITCH INDEX.

In either case, some default information is present when you arrive at these screens and you may need to delete/replace it during your selection process. These defaults are different from previous versions.

Also, you can add a descriptive TAG (shown as Tower Fan North) to the line to help identify this selection from others under the PROJECT.

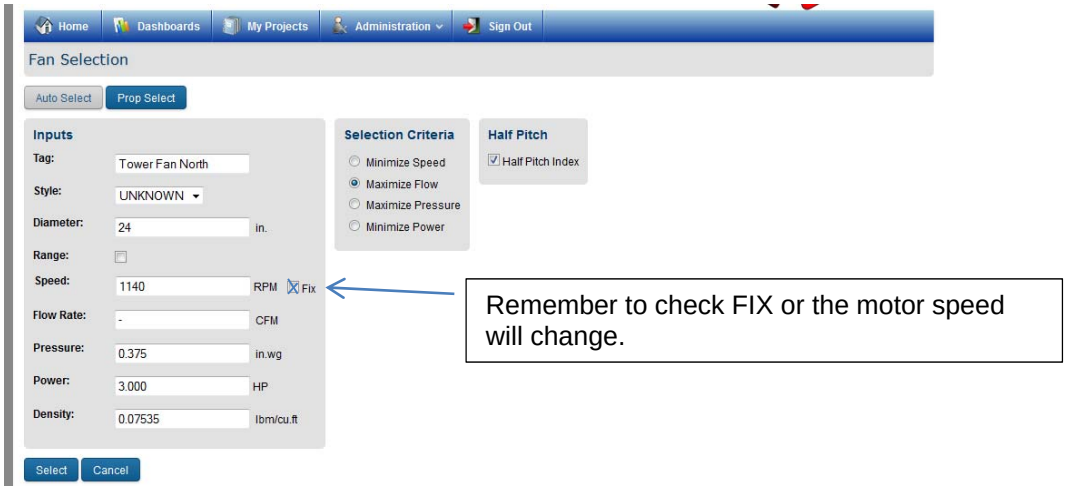


AUTO SELECT. In most cases you will be relying on Air Turbine's Fan Selection Application to provide an optimized fan selection based on some set of requirements. The requirements you may input are shown on the screen below.

In the example below, our user is looking to select the fan (UNKNOWN) that provides the most flow (CFM) given the following requirements:

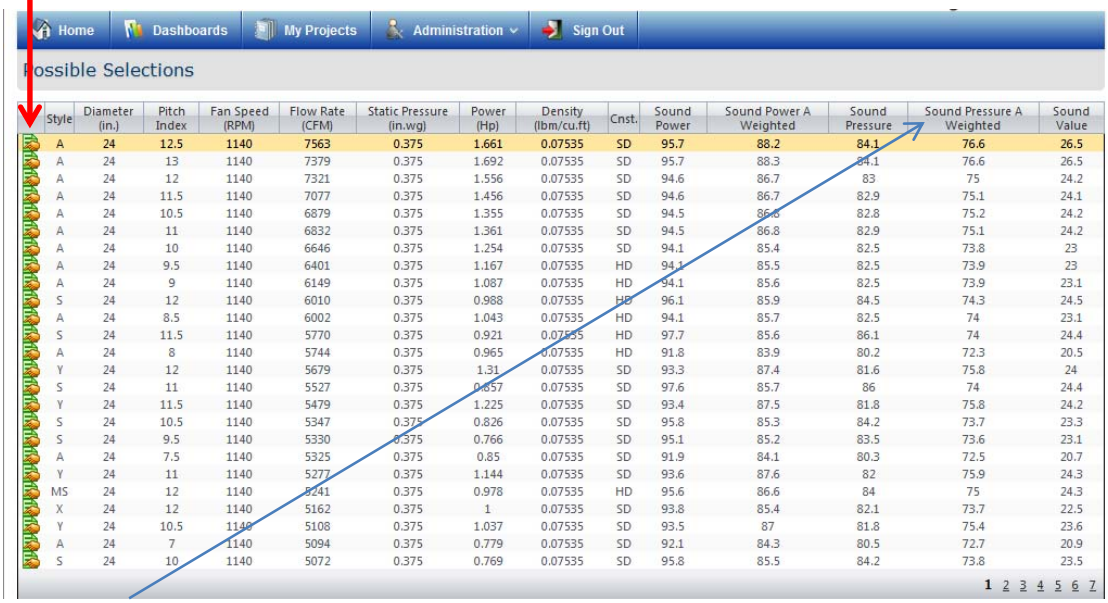
- DIAMETER: 24 inches
- FAN SPEED / RPM: 1140 RPM
- STATIC PRESSURE: 3/8" (in wg)
- AIR DENSITY: .07535 lbs/cu.ft.

Click select at the bottom of this screen when you are done entering your requirements.



5. The following results are displayed. The fans are ordered by HIGHEST FLOW given the constraint of 3HP.

   Click the left most icon to select a fan. In most cases, you will select the fan displayed on top (A-24-12.5 SD)



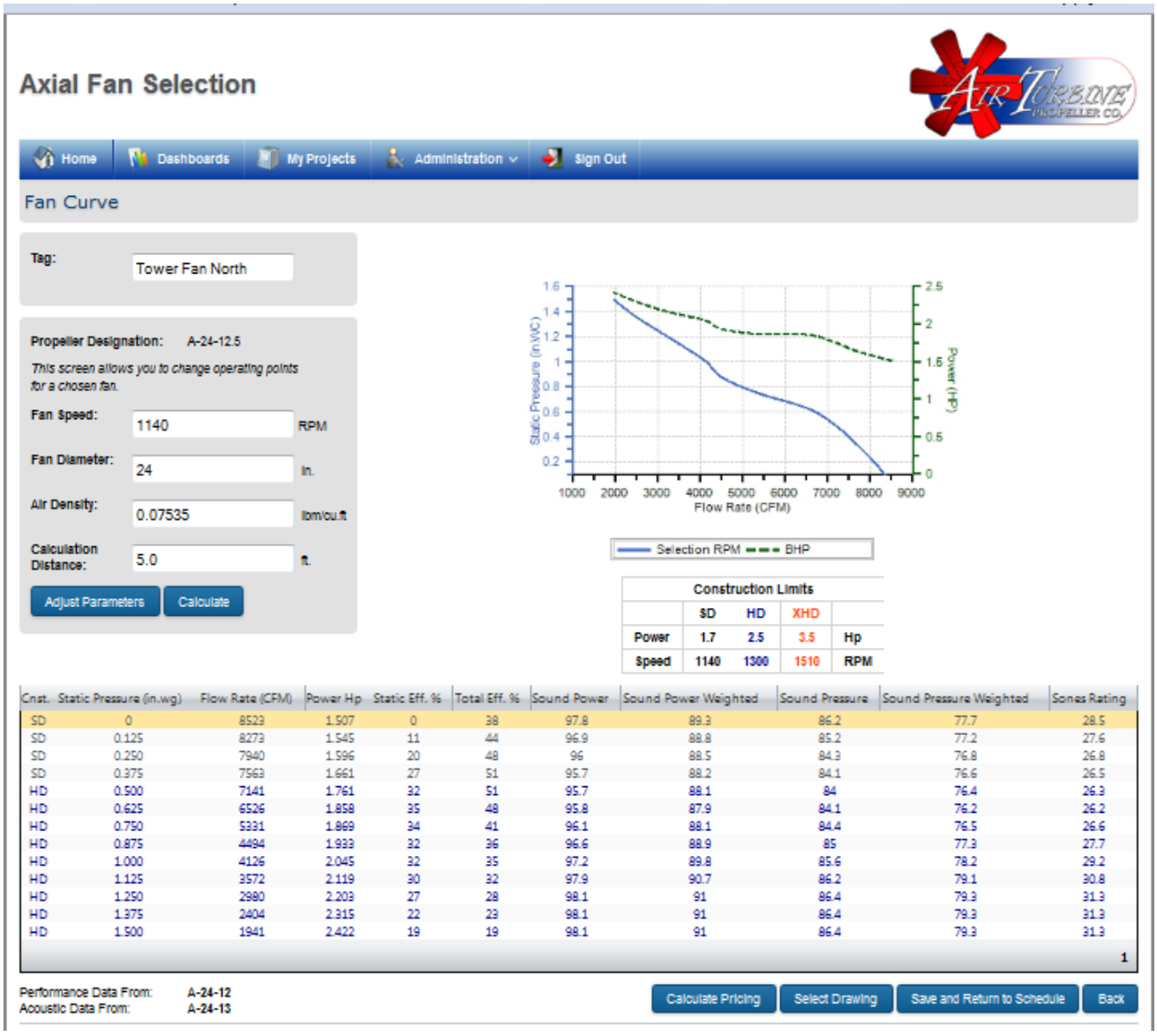
Style	Diameter (in.)	Pitch Index	Fan Speed (RPM)	Flow Rate (CFM)	Static Pressure (in.wg)	Power (Hp)	Density (lbm/cu.ft)	Cnst.	Sound Power	Sound Power A Weighted	Sound Pressure	Sound Pressure A Weighted	Sound Value
A	24	12.5	1140	7563	0.375	1.661	0.07535	SD	95.7	88.2	84.1	76.6	26.5
A	24	13	1140	7379	0.375	1.692	0.07535	SD	95.7	88.3	84.1	76.6	26.5
A	24	12	1140	7321	0.375	1.556	0.07535	SD	94.6	86.7	83	75	24.2
A	24	11.5	1140	7077	0.375	1.456	0.07535	SD	94.6	86.7	82.9	75.1	24.1
A	24	10.5	1140	6879	0.375	1.355	0.07535	SD	94.5	86.8	82.8	75.2	24.2
A	24	11	1140	6832	0.375	1.361	0.07535	SD	94.5	86.8	82.9	75.1	24.2
A	24	10	1140	6646	0.375	1.254	0.07535	SD	94.1	85.4	82.5	73.8	23
A	24	9.5	1140	6401	0.375	1.167	0.07535	HD	94.1	85.5	82.5	73.9	23
A	24	9	1140	6149	0.375	1.087	0.07535	HD	94.1	85.6	82.5	73.9	23.1
S	24	12	1140	6010	0.375	0.988	0.07535	HD	96.1	85.9	84.5	74.3	24.5
A	24	8.5	1140	6002	0.375	1.043	0.07535	HD	94.1	85.7	82.5	74	23.1
S	24	11.5	1140	5770	0.375	0.921	0.07535	HD	97.7	85.6	86.1	74	24.4
A	24	8	1140	5744	0.375	0.965	0.07535	HD	91.8	83.9	80.2	72.3	20.5
Y	24	12	1140	5679	0.375	1.31	0.07535	SD	93.3	87.4	81.6	75.8	24
S	24	11	1140	5527	0.375	0.857	0.07535	SD	97.6	85.7	86	74	24.4
Y	24	11.5	1140	5479	0.375	1.225	0.07535	SD	93.4	87.5	81.8	75.8	24.2
S	24	10.5	1140	5347	0.375	0.826	0.07535	SD	95.8	85.3	84.2	73.7	23.3
S	24	9.5	1140	5330	0.375	0.766	0.07535	SD	95.1	85.2	83.5	73.6	23.1
A	24	7.5	1140	5325	0.375	0.85	0.07535	SD	91.9	84.1	80.3	72.5	20.7
Y	24	11	1140	5277	0.375	1.144	0.07535	SD	93.6	87.6	82	75.9	24.3
MS	24	12	1140	5241	0.375	0.978	0.07535	HD	95.6	86.6	84	75	24.3
X	24	12	1140	5162	0.375	1	0.07535	SD	93.8	85.4	82.1	73.7	22.5
Y	24	10.5	1140	5108	0.375	1.037	0.07535	SD	93.5	87	81.8	75.4	23.6
A	24	7	1140	5094	0.375	0.779	0.07535	SD	92.1	84.3	80.5	72.7	20.9
S	24	10	1140	5072	0.375	0.769	0.07535	SD	95.8	85.5	84.2	73.8	23.5

1 2 3 4 5 6 7

You may reorder the list by clicking on the column headings. For instance, if you wanted to reorder the list by Sound Pressure, you could do so by clicking here.

6. After selecting the desired fan (from above) the fan curve, construction limits, and fan data will be displayed as seen below. From here you may move on to pricing (if you have been set up as such), create a drawing, or save and return to the LINES or SCHEDULE of fans under the PROJECT.

   You must select SAVE if you are NOT going on to PRICING or creating a DRAWING or your fan selection will not be saved.



Cnst.	Static Pressure (in.wg)	Flow Rate (CFM)	Power Hp	Static Eff. %	Total Eff. %	Sound Power	Sound Power Weighted	Sound Pressure	Sound Pressure Weighted	Sones Rating
SD	0	8523	1.507	0	38	97.8	89.3	86.2	77.7	28.5
SD	0.125	8273	1.545	11	44	96.9	88.8	85.2	77.2	27.6
SD	0.250	7940	1.596	20	48	96	88.5	84.3	76.8	26.8
SD	0.375	7563	1.661	27	51	95.7	88.2	84.1	76.6	26.5
HD	0.500	7141	1.761	32	51	95.7	88.1	84	76.4	26.3
HD	0.625	6526	1.858	35	48	95.8	87.9	84.1	76.2	26.2
HD	0.750	5331	1.869	34	41	96.1	88.1	84.4	76.5	26.6
HD	0.875	4494	1.933	32	36	96.6	88.9	85	77.3	27.7
HD	1.000	4126	2.045	32	35	97.2	89.8	85.6	78.2	29.2
HD	1.125	3572	2.119	30	32	97.9	90.7	86.2	79.1	30.8
HD	1.250	2980	2.203	27	28	98.1	91	86.4	79.3	31.3
HD	1.375	2404	2.315	22	23	98.1	91	86.4	79.3	31.3
HD	1.500	1941	2.422	19	19	98.1	91	86.4	79.3	31.3

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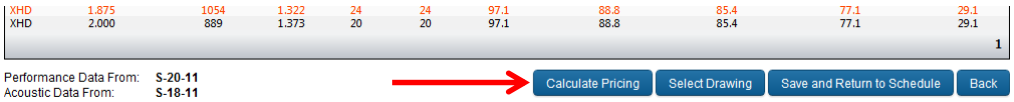
* All of the above data is based on Air Turbine's testing. When the testing took place, only steel propellers were tested and the data displayed above is for steel props.

Should you require an aluminum prop, you will need to select the next higher duty rating displayed. For instance, if the above selection was made with the intention to purchase an aluminum prop, and the fan would see 3/8" static pressure, when moving on to pricing you would select HD (for heavy duty) rather than SD (for standard duty).

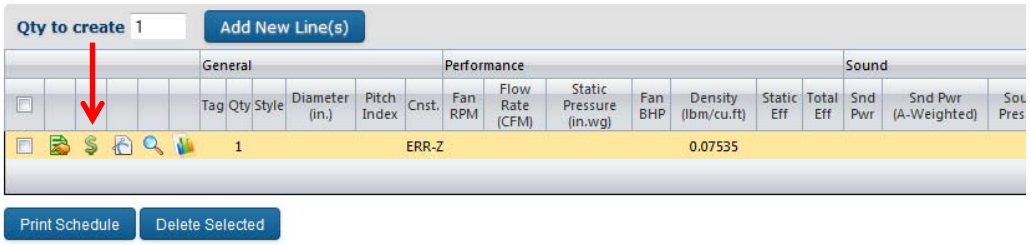
Pricing

You can get to PRICING page one of two ways:

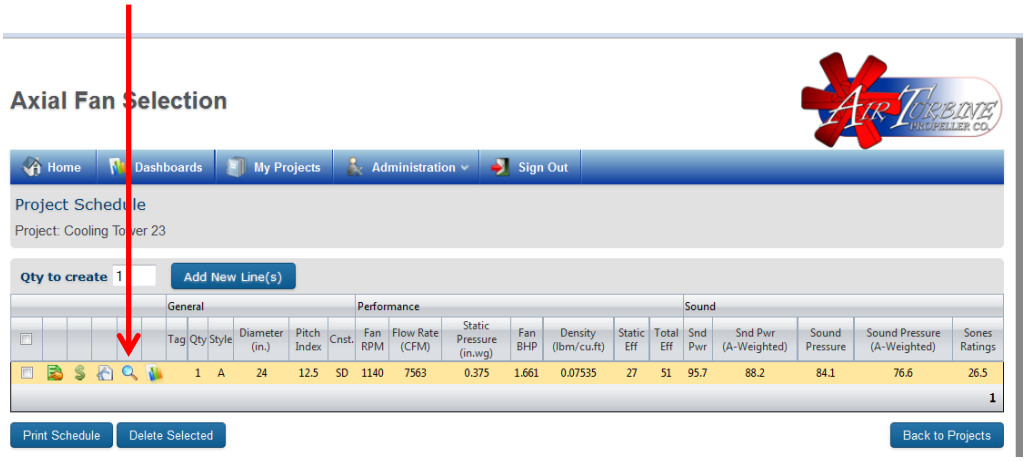
One, from FAN CURVE page (shown on the previous page)



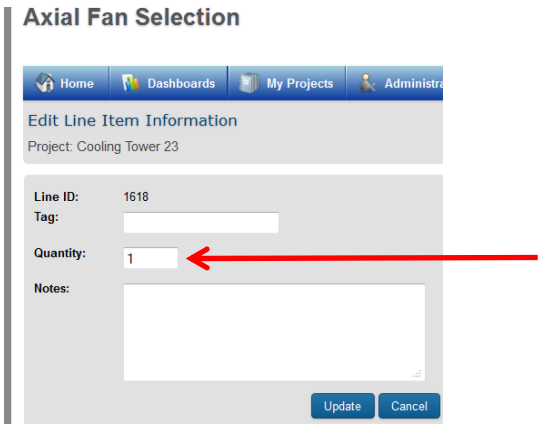
Two, from the PROJECT SCHEDULE page where all of your fan selections are listed for a particular project. You would click on the $ icon.



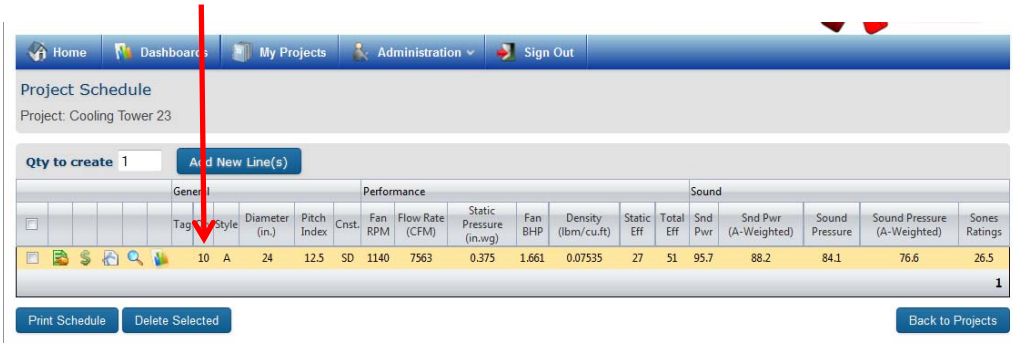
In either case you may want to first, return to the PROJECT SCHEDULE page and enter a desired qunaity. This step is not necessary but it is helpful as the fan selection application will use this information to highlight the appropriate quantity level pricing segment. To change the quantity you'll need to return to the PROJECT SCHEDULE and click on the MAGNIFYING GLASS.



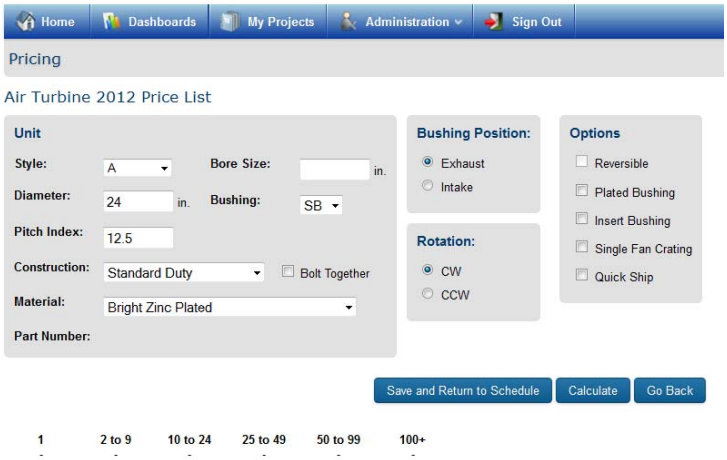
And the following will appear. In this example, I'm changing the 1 to 10 and clicking update.



You'll return to the PROJECT SCHEDULE and you'll now see that the QUANTITY has changed.



Once you're on the PRICING SCREEN you can then finalize the description and obtain pricing.



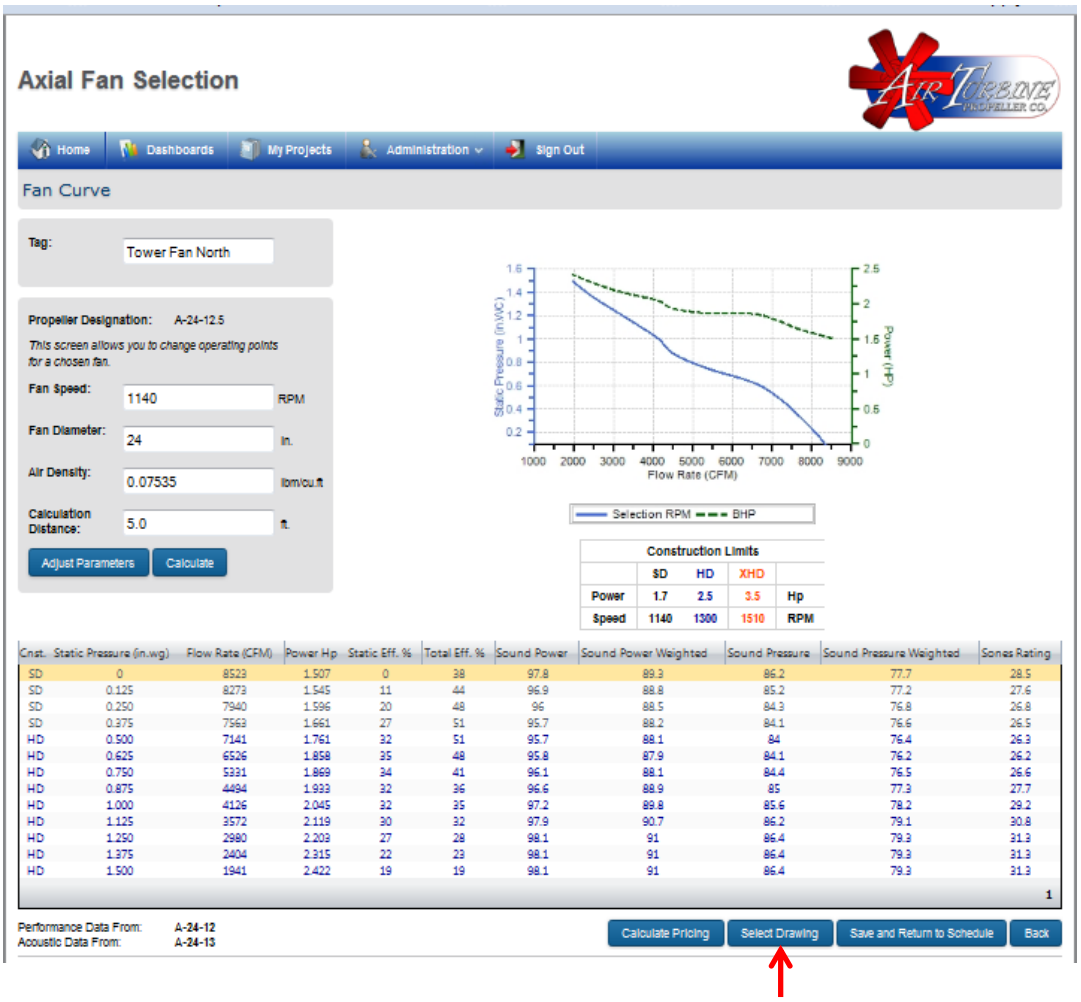
Remember to select the next higher Construction Duty Rating when the material is complete or semi-aluminum.

DRAWING

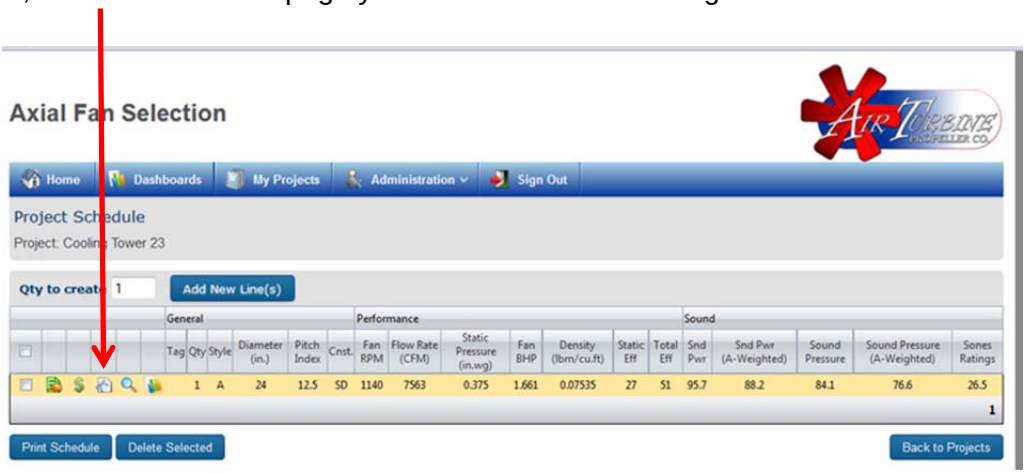
You can also get a sketch of the fan just as you did with the previous version. These drawings are not to scale but do provide accurate dimensions for reference. Not all fans are represented.

You can generate a drawing by accessing this feature from two screens within the fan selection application.

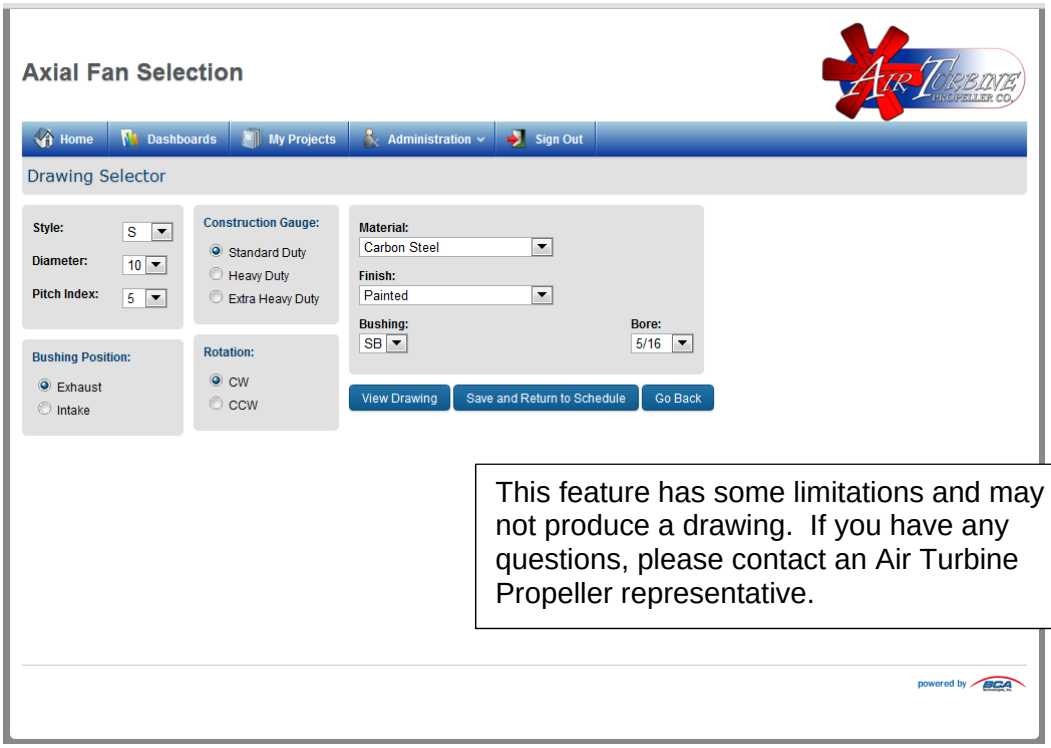
One, from the FAN CURVE page shown below



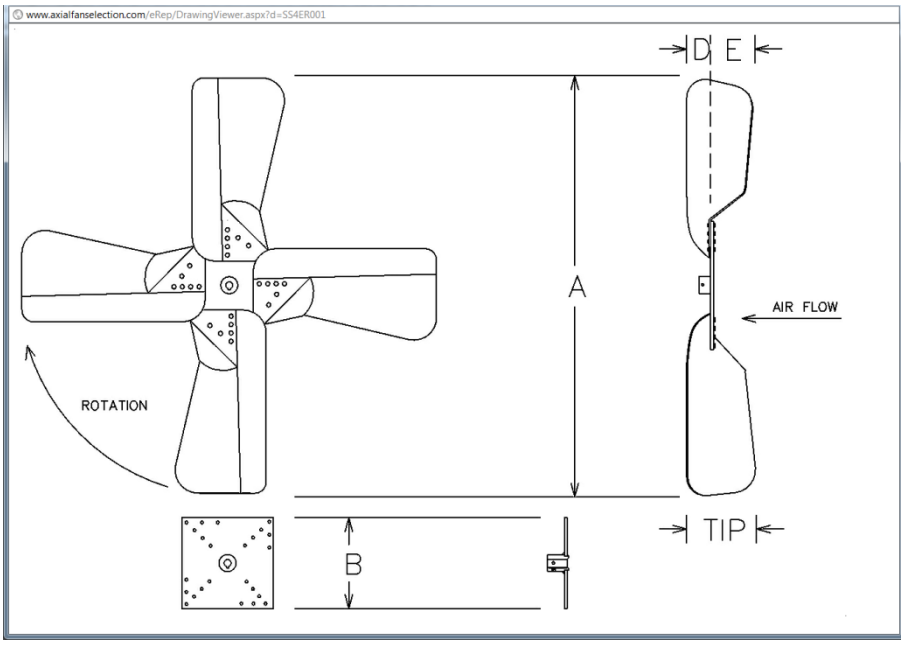
Two, from the PRICING page you can access the drawing feature as well.



In either case, you will be taken to the following screen.



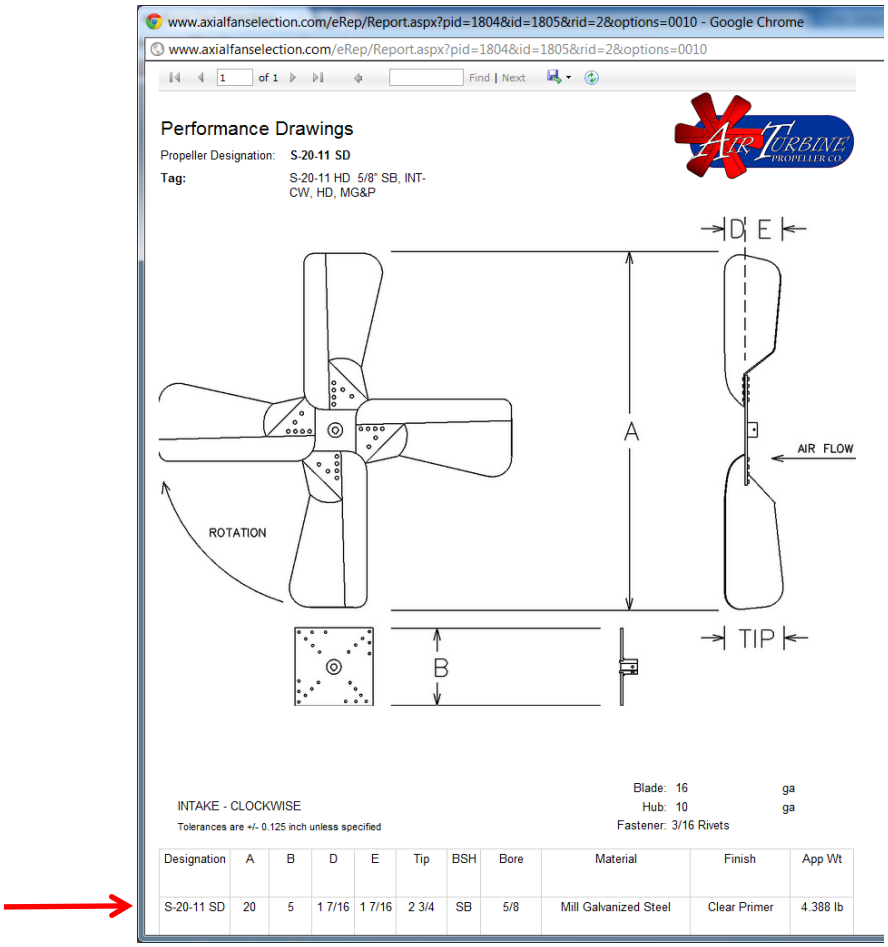
Once you've completed the information above, click on VIEW DRAWING to see the sketch. You may need to allow popups for this to occur. Below is an example.



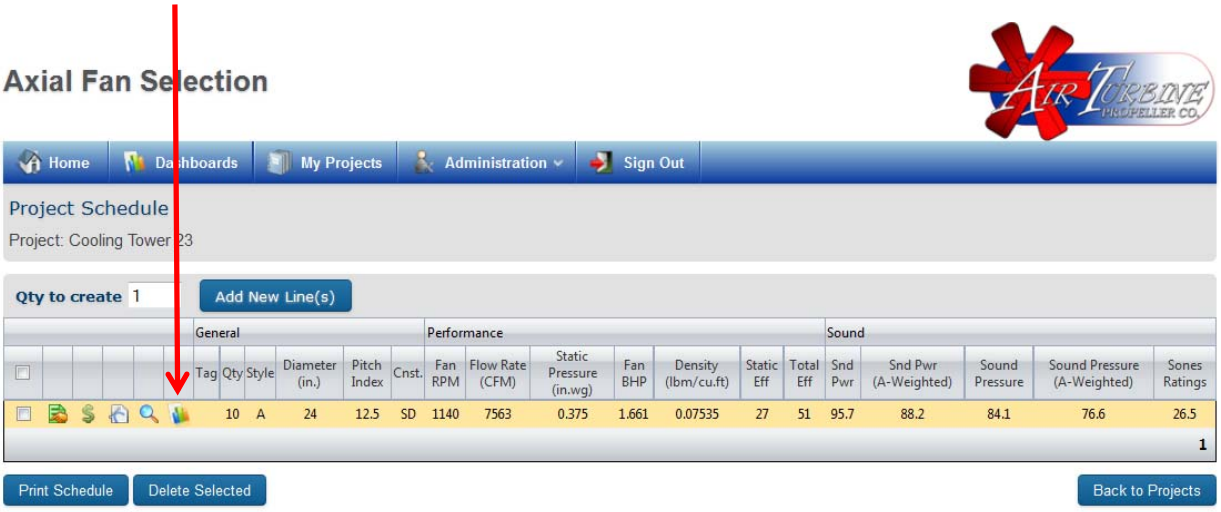
The DRAWING that is displayed in the popup does not have the footer with the title block containing values for the variables on the drawing.

When you run the REPORT, it will display these dimensions. See the example below.

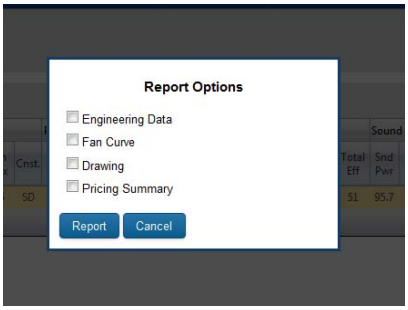
Note: Always remember to SAVE your work when navigating away from the screen you are on.



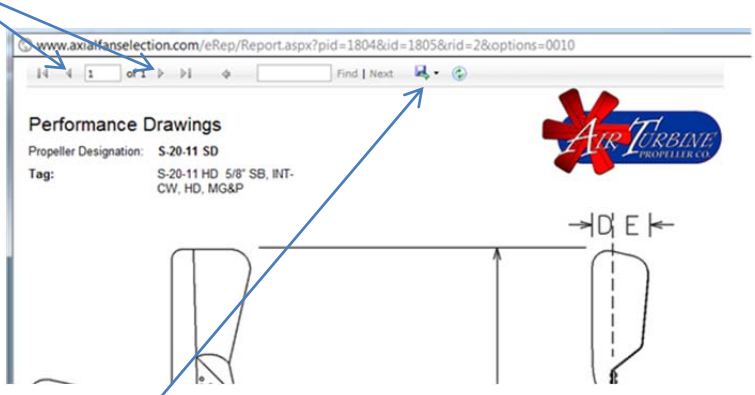
REPORTS - This release of our Fan Selection Software offers the ability to generate and save reports as well. To do so, you will click on the REPORT icon below from the PROJECT SCHEDULE screen.



After doing so, the box below will appear and prompt you to select the reports you desire. Once generated, you can elect to save them as a PDF, Excel or Word document.



When the report generate you must use the arrows at the top of the page to scroll through the pages if there is more than one.



Also, to save the REPORT as a PDF, Excel or Word document you must click on the small down arrow next to the icon that resembles a computer disk.

Air Turbine Propeller Company
22329 Perry Highway
Zelienople, PA 16037
(724) 452-9540 Office
(724) 452-0961 Fax
www.airturbine.com
www.axialfanselection.com

Name	Title	Email
David Silvers	Sales Manager	davidsilvers@airturbine.com
Luke Liberty	Application Specialist	lukeliberty@airturbine.com
Tony Perry	President	tonyperry@airturbine.com
Terri Tankersley	Office Manager	territankersly@airturbine.com