

BEACON Newsletter - September 2024

Importing Curves to SOLIDWORKS Simulation and Flow Simulation

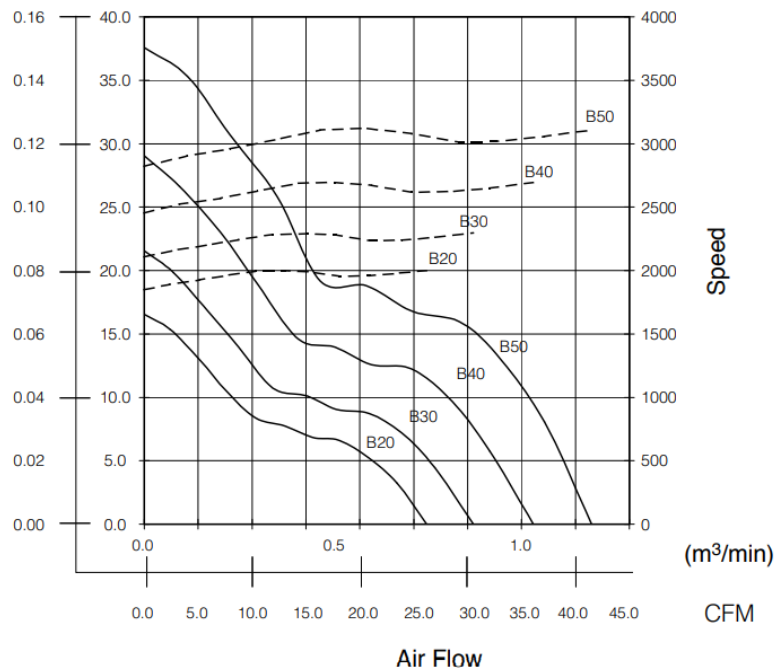
To import a curve to SOLIDWORKS Simulation and Flow Simulation, the data needs to be given in the form of table in the library. Not every time, the user has the tabular data. Sometimes the user might be having an image of a curve. In this case, the user will not be able to enter the data directly into SOLIDWORKS. In this case, the user must extract the data points from the image to populate it to SOLIDWORKS.

For this purpose, there are many tools available online, one of which is 'WebPlotDigitizer' an opensource and free to use online platform. This tool helps the user in extracting the data points from an image to XY Plots, 2D Bar Plot, Polar Diagram, Ternary Diagram, Map with Scalar Bar, and Image.

In this case, the fan curve is being derived from an Image and hence, the populated data is stored in the form of the XY Plot. This can be done in the following steps.

Step-1:

Importing an image file to the tool.

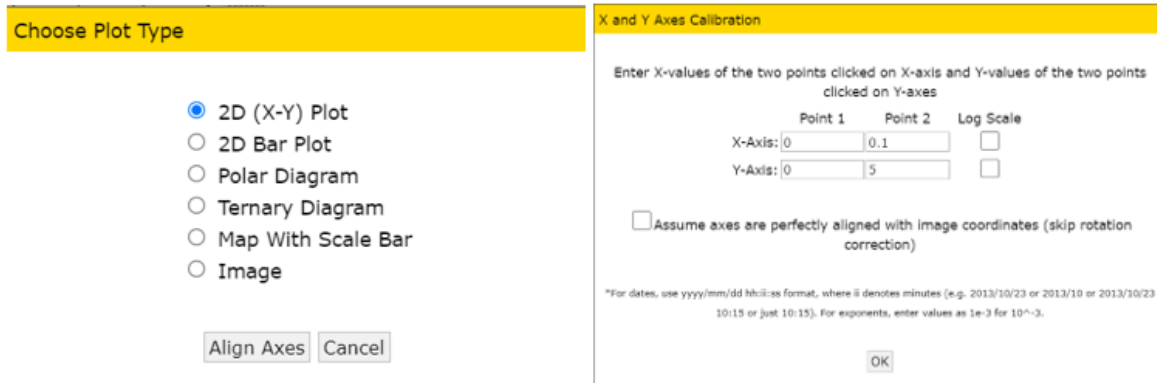


Fan Curve Data Images.

In this very example, the curve of interest is B50 and hence, the user will extract the data from the same graph.

Step-2:

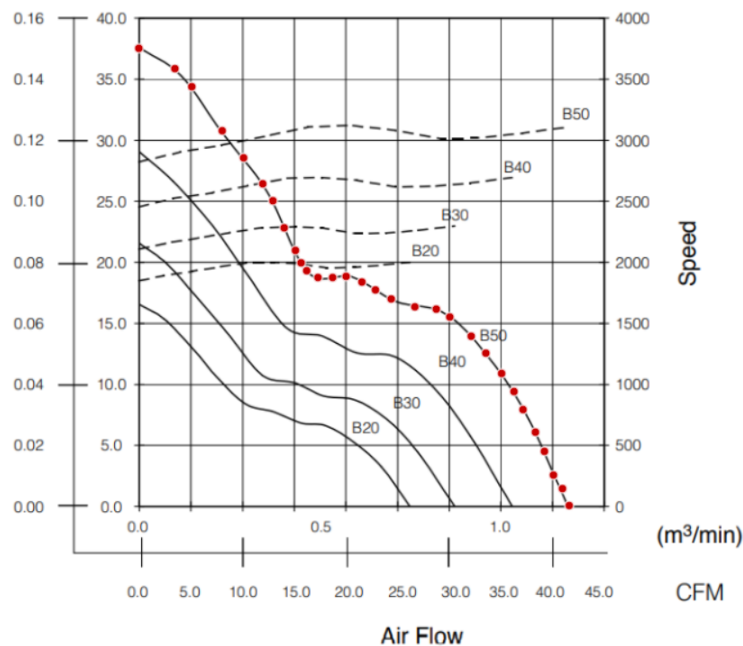
Choose the output data type and align the axis accordingly. For an instance, XY plot is chosen, and the X axis is set to 1 m³/min and Y axis is set to 5 Pascal.



Data output types

Step-3:

Once the alignment of the axis is done, the user has to select multiple points on the interested curve as shown in the below image. It is always better to have a greater number of points and closely packed to get an accurate data.



Point data on the curve B50

Step-4:

Importing these selected data points to the local computer. This can be imported in the form of raw data in the clipboard and .csv files. The best practice is to save the data in the form of .csv file to copy to SOLIDWORKS.

Acquired Data

Dataset: Default Dataset v

Variables: X, Y

-0.023349436392914813,	37.59259259259262
0.07706464228203347,	35.92592592592595
0.12456866804692868,	34.44444444444447
0.21066252587991707,	30.83333333333353
0.2710489993098687,	28.61111111111113
0.32516678168852065,	26.4814814814815
0.35397975615366917,	25.092592592592606
0.3864159190246146,	22.870370370370384
0.4186220381872555,	21.018518518518533
0.434782608695652,	20.000000000000014
0.4507131354957441,	19.351851851851865
0.482114101679319,	18.79629629629631
0.5224867724867722,	18.79629629629631
0.5596963423050378,	18.88888888888889
0.6034621578099838,	18.425925925925934
0.6411318150448585,	17.777777777777786
0.6850701622210227,	17.027027027027045

Copy to Clipboard Download .CSV Graph in Plotly* Close

*Plotly is a secure data analysis and graphing site with data sharing and access controls.

Visit <http://plot.ly> for details.

Sort

Sort by: Raw v

Order: Ascending v

Format

Number Formatting:

Digits: 5 Ignore v

Column Separator: ,

Format

Image of dataset acquisition

Step-5:

This data .csv file is copied and pasted in the respective fields in the SOLIDWORKS libraries. In this instance, this data is copied to the fan library and saved in the field of fan curve.

New Fan

Property:

Value	
Volume flow rate	Pressure difference
0 m ³ /s	37.5925926 Pa
0 m ³ /s	37.5925926 Pa
0.001284668 m ³ /s	35.9259259 Pa
0.001284668 m ³ /s	35.9259259 Pa
0.00207656 m ³ /s	34.4444444 Pa
0.00207656 m ³ /s	34.4444444 Pa
0.003511744 m ³ /s	30.8333333 Pa
0.003511744 m ³ /s	30.8333333 Pa
0.004518387 m ³ /s	28.6111111 Pa
0.004518387 m ³ /s	28.6111111 Pa
0.00542053 m ³ /s	26.4814815 Pa
0.00542053 m ³ /s	26.4814815 Pa
0.005900843 m ³ /s	25.0925926 Pa
0.005900843 m ³ /s	25.0925926 Pa
0.006441553 m ³ /s	22.8703704 Pa
0.006441553 m ³ /s	22.8703704 Pa
0.006978429 m ³ /s	21.0185185 Pa
0.006978429 m ³ /s	21.0185185 Pa

Reset

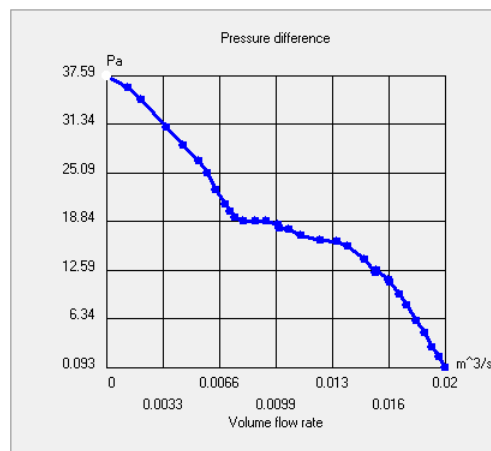


Image from SOLIDWORKS Engineering database

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