Rotary Screw Energy Cost Calculator Report

Prepared: 06/01/2009

For:

ABC Company
12345 Happy Trails
Happy Valley, FL 54321
Phone: 888-555-1212

Prepared By:

Florida Air Technologies LLC
10255A General Drive, Unit A10
Orlando, FL 32824
Phone: 407-850-9255
Fax: 407-850-9209
Email: Sales@FloridaAirTech.com
www.FloridaAirTech.com

How *Efficient* Can a New Compressor Really Be?

Do you have **"Green Initiatives"** in your plant? Probably so! Whether your **green initiative** would be to reduce non-productive energy consumption resulting in lost profits, or to shrink your company's carbon footprint, deciding on a new compressor for your air system is a critical candidate for consideration.

So the question becomes - how **"Green"** will your new compressor be?

When purchasing a new air compressor several factors should be considered. Naturally, the first consideration is the purchase price of the equipment. Although this may be a fairly large expenditure, the initial purchase price calculates to be a very small portion of the **overall life cost** of the compressor.

Then, many will want to know the annual cost of routine maintenance. Depending on the size of the compressor, this could run a couple of thousand dollars a year. This however, will remain a relatively static expense and won't change greatly from manufacturer to manufacturer or from year to year.

The single largest "cost" item, during the life of a compressor, is the cost of the electricity required to run the compressor. This however, is the one cost item that can be controlled by any company. Depending on the utility company, there are peak-power charges, off-peak charges, winter rates, summer rates, day time rates, night time rates and they all enter into the calculated charges of an electric bill.

By choosing the ***most energy efficient*** compressor available, it will make a significant difference in the amount of electricity consumed. But, how do you know which is the ***most efficient*** compressor for your plant?

There are compressors that load and unload, based on demand. Then, there are compressors that "modulate" the inlet valve, also based on demand. What's more, there are compressors that vary the flow capacity - the CFM, again based on demand. And then there are compressors that vary the flow by varying the speed of the compressor. But... which is the ***most efficient*** for your plant? Remember, they ***all*** require electricity to run them!

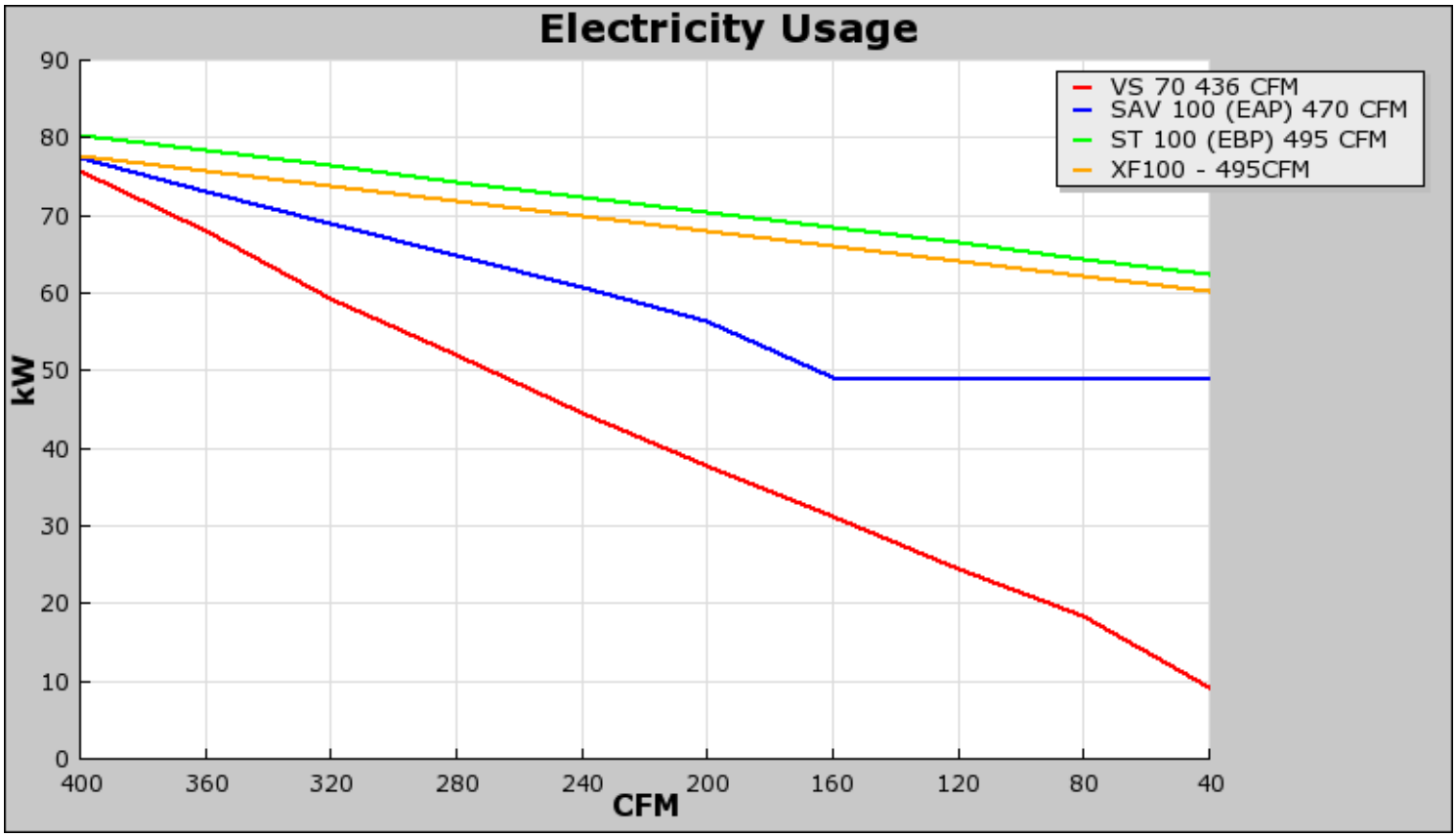
With a little bit of information, the amount of energy used by any of these compressors can be calculated and will help to determine which is the ***most energy efficient*** for a given application.

So once again, the question becomes - how **"Green"** will your new compressor really be? Let's find out…

OR

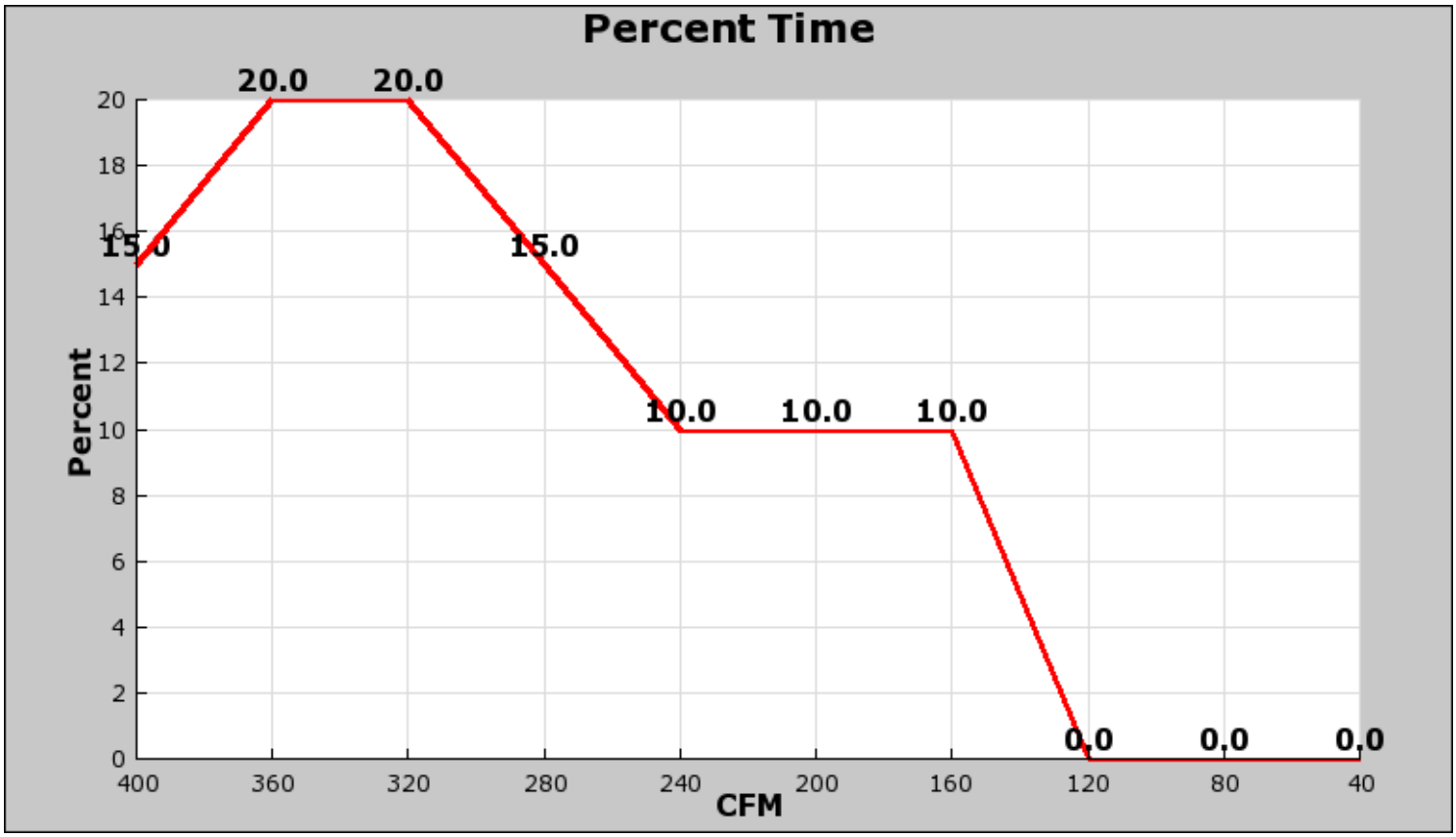
kW Values at Demand Levels

Manufacturer		Gardner Denver	Gardner Denver	Gardner Denver	Other Brand
Control Type		Variable Speed	Variable Displacement	Inlet Modulation	Inlet Modulation
Demand Level (CFM)	% Time	VS 70 100 PSIG 436 CFM	SAV 100 (EAP) 100 PSIG 470 CFM	ST 100 (EBP) 100 PSIG 495 CFM	XF100 - 495CFM
400	15 %	75.8	77.3	80.4	77.8
360	20 %	68.0	73.1	78.4	75.8
320	20 %	59.4	69.0	76.4	73.9
280	15 %	51.9	64.8	74.4	71.9
240	10 %	44.5	60.6	72.4	70.0
200	10 %	37.7	56.4	70.4	68.1
160	10 %	31.2	49.0	68.4	66.1
120	0 %	24.5	49.0	66.4	64.2
80	0 %	18.5	49.0	64.4	62.2
40	0 %	9.2	49.0	62.4	60.3



Time Weighted kW

Manufacturer	Gardner Denver	Gardner Denver	Gardner Denver	Other Brand
Control Type	Variable Speed	Variable Displacement	Inlet Modulation	Inlet Modulation
Compressor	VS 70 100 PSIG 436 CFM	SAV 100 (EAP) 100 PSIG 470 CFM	ST 100 (EBP) 100 PSIG 495 CFM	XF100 - 495CFM
400 CFM	11.4	11.6	12.1	11.7
360 CFM	13.6	14.6	15.7	15.2
320 CFM	11.9	13.8	15.3	14.8
280 CFM	7.8	9.7	11.2	10.8
240 CFM	4.5	6.1	7.2	7.0
200 CFM	3.8	5.6	7.0	6.8
160 CFM	3.1	4.9	6.8	6.6
120 CFM	0.0	0.0	0.0	0.0
80 CFM	0.0	0.0	0.0	0.0
40 CFM	0.0	0.0	0.0	0.0



Cost

Manufacturer	Gardner Denver	Gardner Denver	Gardner Denver	Other Brand
Control Type	Variable Speed	Variable Displacement	Inlet Modulation	Inlet Modulation
Compressor	VS 70 100 PSIG 436 CFM	SAV 100 (EAP) 100 PSIG 470 CFM	ST 100 (EBP) 100 PSIG 495 CFM	XF100 - 495CFM
Total Demand Profile kW	56.0	66.3	75.3	72.8
Total Annual Operating Hours	2496	2496	2496	2496
Annual kWh	139,714	165,575	187,913	181,730
Blended Cost of Power ($/kWh)	$ 0.10	$ 0.10	$ 0.10	$ 0.10
Annual Power Cost	**$ 13,971.41**	**$ 16,557.47**	**$ 18,791.34**	**$ 18,173.00**
Price	$ 29,829.00	$ 31,425.00	$ 27,105.00	$ 25,500.00

*NOTE: Yearly Costs = (Annual Power Cost * Number of Operating Years) + Price*

Year 1 Cost	$ 43,800.41	$ 47,982.47	$ 45,896.34	$ 43,673.00
Year 2 Cost	$ 57,771.83	$ 64,539.93	$ 64,687.68	$ 61,846.00
Year 3 Cost	$ 71,743.24	$ 81,097.40	$ 83,479.02	$ 80,018.99
Year 4 Cost	$ 85,714.66	$ 97,654.86	$ 102,270.36	$ 98,191.99
Year 5 Cost	$ 99,686.07	$ 114,212.33	$ 121,061.70	$ 116,364.99
Year 10 Cost	$ 169,543.14	$ 196,999.66	$ 215,018.40	$ 207,229.98