

October 2016

## ASK THE EXPERTS: Windrock MD Data Export to Ariel Performance Software

QUESTION: I have the Ariel Performance program and the run file for my compressor. Is it possible to perform a comparison of the pressure data I gathered with my Windrock portable analyzer and the pressure profile data predicted by the Ariel Performance software?

Yes, the Windrock pressure profile data can easily be imported into the Ariel Performance software for comparison. You can also export data from Windrock online systems.

In the Windrock MD software, go to **Reports** and select the compressor report date and run number that you want to export. Then click the **Comp Data Dump** button.

A compdump.txt file will be created which can be saved to a selected folder.

leports		X
Engine Engine Balance Ignition Spark Survey Compressor Compressor Economic Rod Load	▲ Date 02-20-2014 has 2 records 01-03-2014 has 2 records 01-02-2014 has 2 records	Options Color Color • Use smoothing Use nex report format Include cost analysis page No diagnostic conditions were detected. Include diagnostics on report Comp Data Dump
Other	Run Number	
Other	Run 1	▼
Manual / Panel	- Preview Prin	t Export

Figure 1



In the Ariel Performance program, open the appropriate run file. From the **View** dropdown box, select **Dynamics Viewer**.

File View	W Order Details Security	Vindo	w Help		
🌮 Se	MultiRun Viewer	F4	🖢 Valves   🥊	🚴 Certs/E	Docs 👘 Unit Option
A	Report Manager	F7			
• / -	Dynamics Viewer	F8	Frame/Cylind	er Data	Compressor Optio
Sele	Change Units Change Report Logo Change Limits Run Gas Analysis Language Properties	F6			
<b>V</b>	File Locations Toolbars and Docking Window Status Bar Application Look Reset Window Layout	vs 🕨			

Figure 2

With the **Dynamics Import Wizard** opened, select the **Windrock** analyzer type. Then select **Next**.

Openamics Import Wizard
The Dynamics Import Wizard is a tool to assist in importing a pressure profile. Proceed through the wizard to set up a specific analyzer type.
Select the type of file to import:
C Ariel DMS
C Ariel Field Service Performance Data
Windrock
Dynaico Controls O Dynaico Controls
Upriaco Controis - Text Dump
< Back Next > Cancel Help

Figure 3



Click on Add File(s). Locate the .txt Windrock data file then select Next.

	X
	Dynamics Import Wizard
File(s) to Import	
C:\Users\tgordon\Docum	ents\New folder\compdump Unit 1 Comp.txt
	Add File(s) Remove File(s)
	I
	< Back Next > Cancel Help

Figure 4

The **Dynamics Import Summary** should have data type and file location listed in the window. Select **Finish**.



Figure 5



## A Pressure Profile Configuration screen will come up.

Make any selections or adjustments as needed then click the Import button.

Sample Info:									- Units	
Label: c Description:	compdump Unit 1 Comp.txt						Date: 9/ 1/2016 Time: 9:40:23 AM RPM: 0.0 Use TDC Offse Use Phase Shill	• • •	Gauge Absolute Pressure psi Ignore: Columns C Rows	English Metric Select All Deselect A
	Ignore Deg	ree Column 1	Column	2	Column 3		Column 4		Column 5	
Ignore		· · · · · · · · · · · · · · · · · · ·	Г		Г					
Throw #		Throw 1	Throw 1	-	Throw 1	-	Throw 1	-	Throw 1	•
ressure Type		CE	HE	•	CE	•	CE	-	CE	-
Trace Title										
	<b>v</b>	Station name:	COOK Valve Tests		COOK Valve Tests		COOK Valve Tests		COOK Valve Tests	
	V	Machine name:	Ariel JGK-	2	Ariel JGK-2	2	Ariel JGK-2		Ariel JGK-2	
	<b>V</b>	Data point name	Comp 1 H Pre	ssure	Comp 1 C Pres	ssure	Comp 1 Suc Nozzle Tr	ace	Comp 1 Dis Nozzle	e Trace
	<b>v</b>	Date and time	1-03-14 11:5	8:33	1-03-14 11:59	:29	1-03-14 11:56:57		1-03-14 11:57:	41
	<b>V</b>	ihp	49.86		48.39					
	<b>v</b>	Speed (rpm)	1001.69		1001.58		1001.58		1001.60	
	<b>V</b>	Suction Temp(F)	36.93		36.93					
	<b>V</b>	Discharge Temp(F)	124.93		124.93					
	<b>v</b>	Theoretical Discharge Temp(F)	124.19		123.23					
	<b>v</b>	Suction Toe pressure(psi)	92.21		92.37					
	~	Discharge Toe pressure(psi)	173.85		173.07					
	<b>v</b>	VE suction	79.36		80.94					
	~	VE discharge	52.93		55.03					
	<b>v</b>	Capacity suction (mmscfd)	1.67		1.62					
	~	Capacity discharge (mmscfd)	1.66		1.63					
	<b>v</b>	Flow balance	1.00		0.99					
	~	Suction Z	1.00		1.00					
	<b>v</b>	Discharge Z	1.00		1.00					
		Standard conditions 7	1.00		1.00					

Figure 6

The Windrock pressure profile data will now be displayed along with the performance software predicted pressure profiles. Display controls can be used to adjust the graphed data. **TDC Roll** can be used to match predicted and measured data more closely. Clearances and toe pressures can be adjusted for each stage by right clicking and selecting **Enter Operating Parameters**. In Figure 7, a suction discharge leak can be seen with the Windrock MD software.





In Ariel Performance software, models can be predicted for different operating parameters, such as different suction pressures, discharge pressures, target gas flow, piping sizes, etc. Many use this software to view the predicted pressure profile. However, Ariel Performance does not have the capability to show the actual pressure profile of your compressor without importing data from performance monitoring systems. This is why an analyst will find instant benefit to importing the actual pressure traces from Windrock MD software against the predicted pressure traces of Ariel Performance. It helps the analyst know the performance of his machinery using metrics from both Windrock and Ariel.

Also, keep in mind that Windrock MD software has the capability to show theoretical models as well. Theoretical models are only useful with known TDC. The main difference between Windrock and Ariel theoretical models is that Ariel's incorporates some of the valve loss into the model whereas Windrock does not. This helps a company to understand their own processes.

If you have additional questions about software or would like more information about other topics, please email <u>sales@windrock.com</u>.