

Dyna-Doctor Service Software Overview



Dyna Doctor

Technical Call

This presentation is not intended to be an all inclusive troubleshooting and unit operation explanation but rather a look at navigation and information Dyna Doctor provides. Introductory level information on connection and navigation after software installation.



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Dyna-Doctor is to be used on Toshiba Carrier systems and cannot be connected to Carrier Bryant VRF systems.



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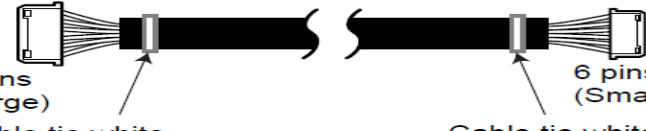
Dyna-Doctor is available with the part number
TCB-DK01SS-E communication adapter.



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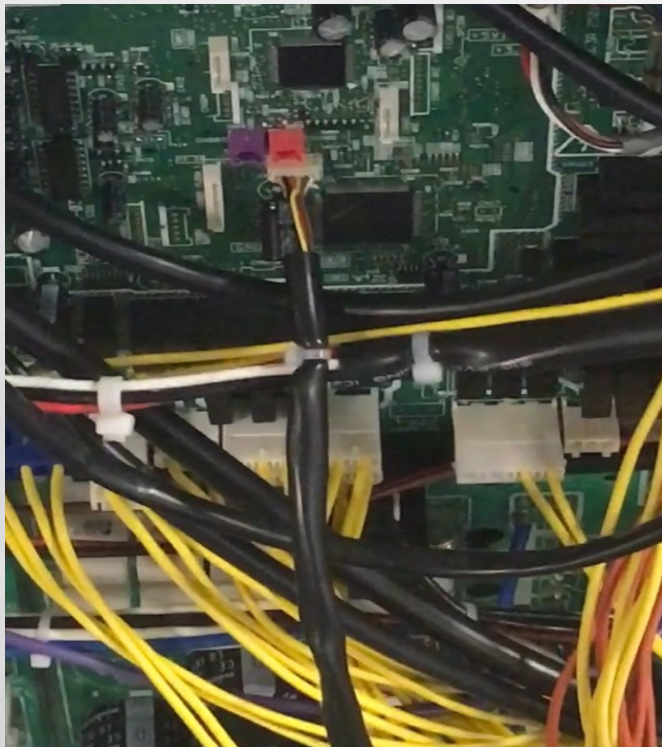
The accessory connector will have a connection to the outdoor unit board and to the Dyna Doctor adapter. Cable used depends on system to be connected.

Cable type	Appearance		Representative Air conditioner
	DYNA-KIT side — Air conditioner side		
A	 <p>8 pins 8 pins</p> <p>Cable tie white Cable tie Black</p> <p>A black cable tie is attached to the cable on air conditioner side. Be careful with it. It is prone to come off.</p>		SDI Series (Outdoor unit) (*) DI Series (Outdoor unit) (*) IMS Series (Outdoor unit) (*) Air to Water Heat Pump (Hydro unit) *: Connector type may differ with some models.
B	 <p>6 pins (Large) 6 pins (Large)</p> <p>Cable tie white Cable tie Black</p> <p>A black cable tie is attached to the cable on air conditioner side. Be careful with it. It is prone to come off.</p>		SDI Series (Outdoor unit) (*) DI Series (Outdoor unit) (*) IMS Series (Outdoor unit) (*) • For Japan SPE Series (Outdoor unit) (*) SME Series (Outdoor unit) (*) *: Connector type may differ with some models.
C	 <p>6 pins (Large) 6 pins (Small)</p> <p>Cable tie white Cable tie white</p>		MiNi-SMMS (Outdoor unit) SMMS (Outdoor unit) SHRM (Outdoor unit) • For Japan SMMS (Outdoor unit) FLEX (Outdoor unit)

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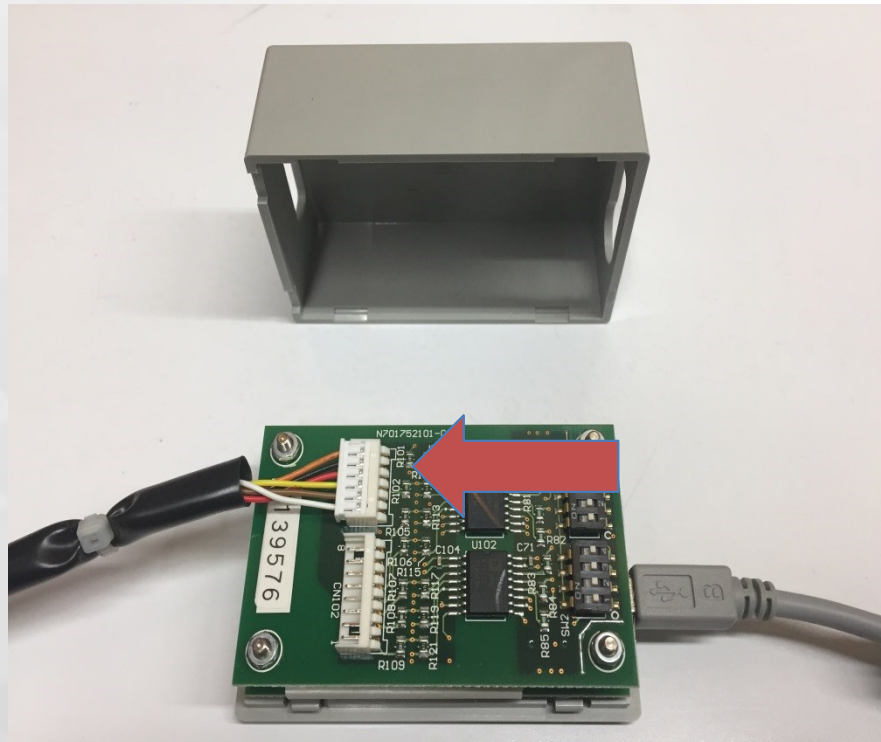
Connection for system **operation** and **monitoring** is done from outdoor unit PC board only. CN800



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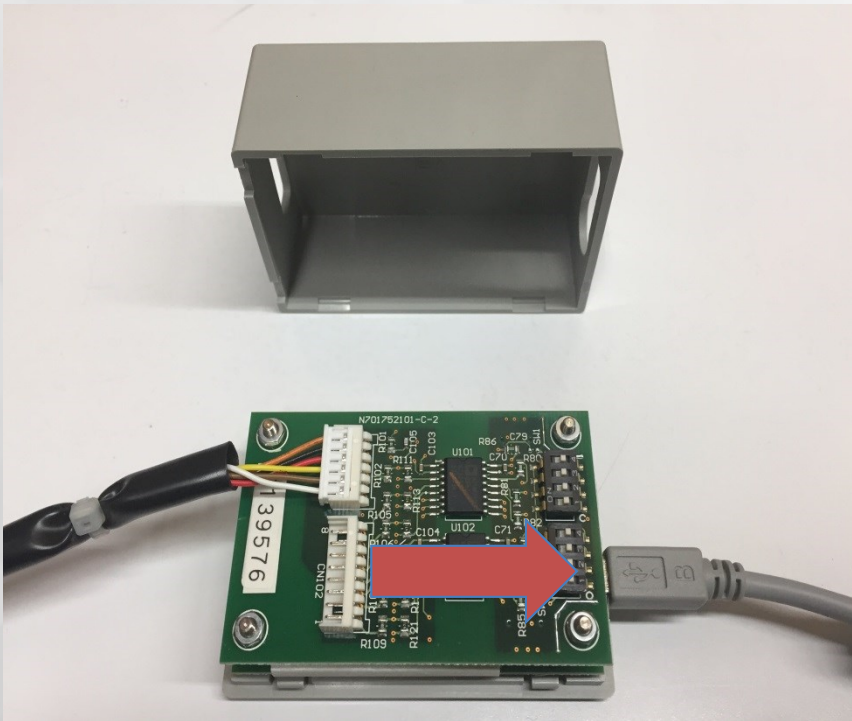
Connect the other connector end to Dyna Doctor Adapter as shown.



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Once connected to the outdoor board and adapter, connect the mini USB end of the accessory cable to the Dyna Doctor adapter and the USB end to the computer.



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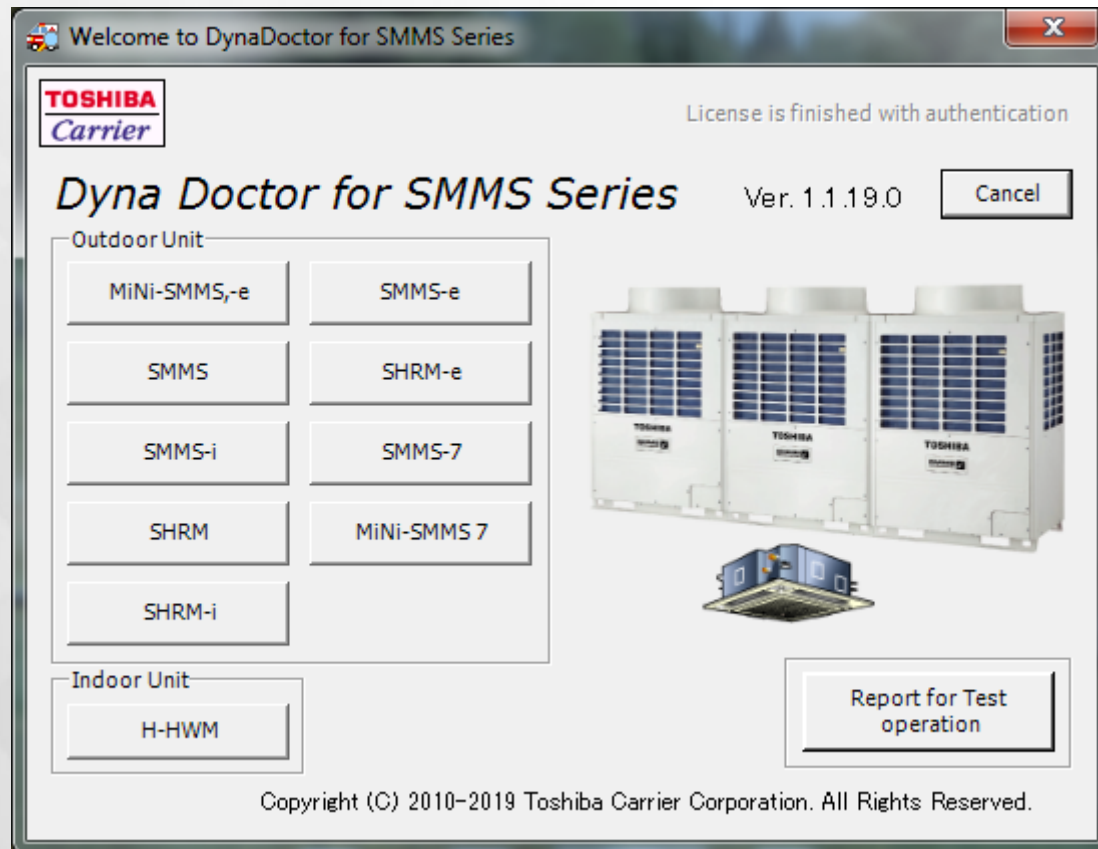
Open Dyna Doctor software from the shortcut icon on the desktop.



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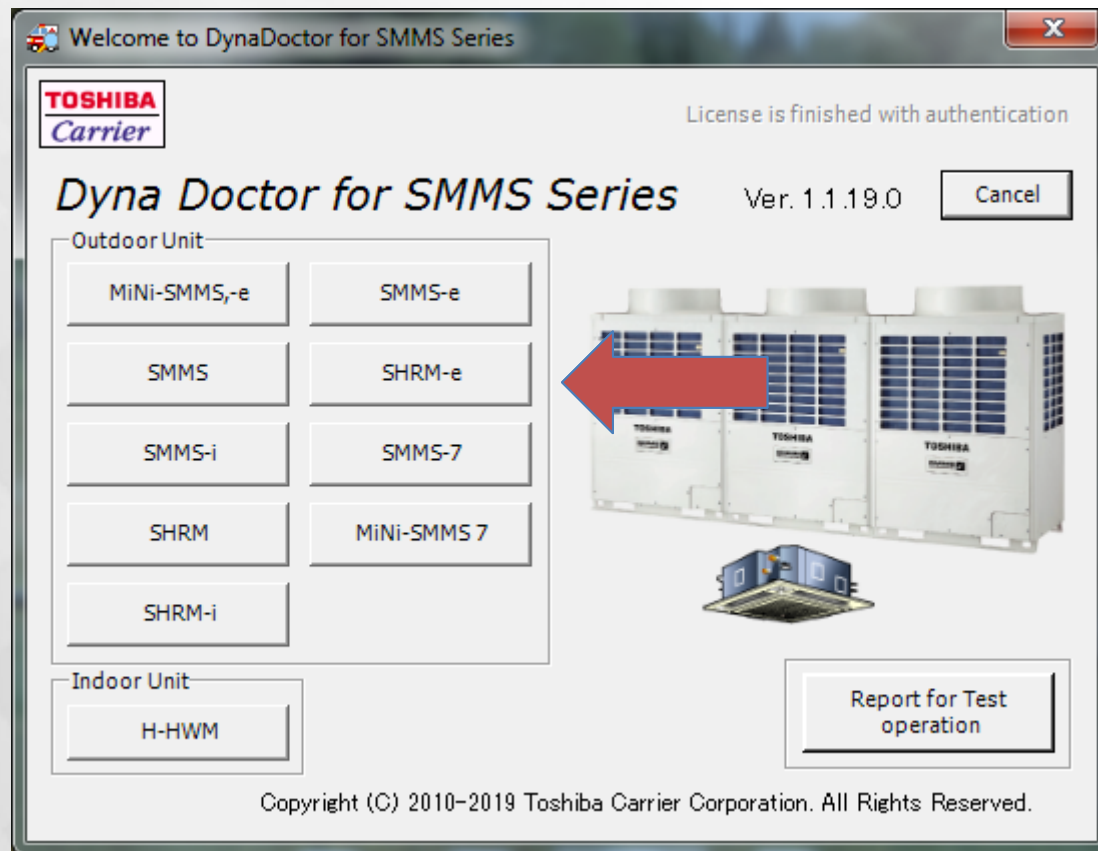
When the software opens you will need to select the unit type to be monitored.



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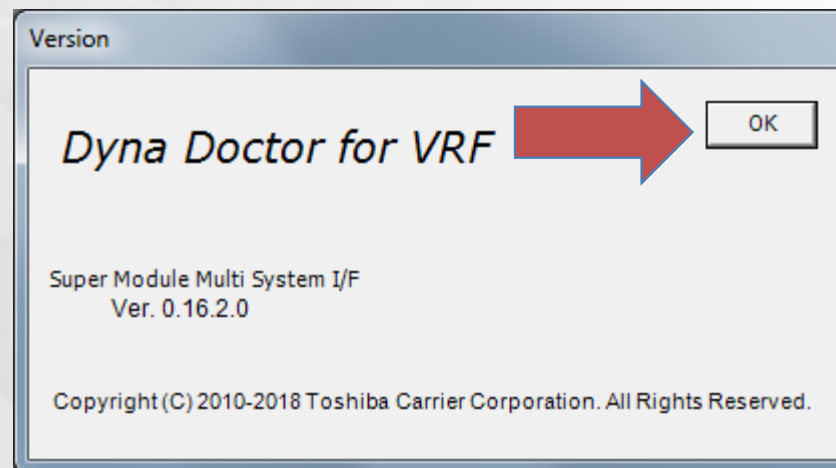
For this presentation we will select e series Heat Recovery or SHRM-e.



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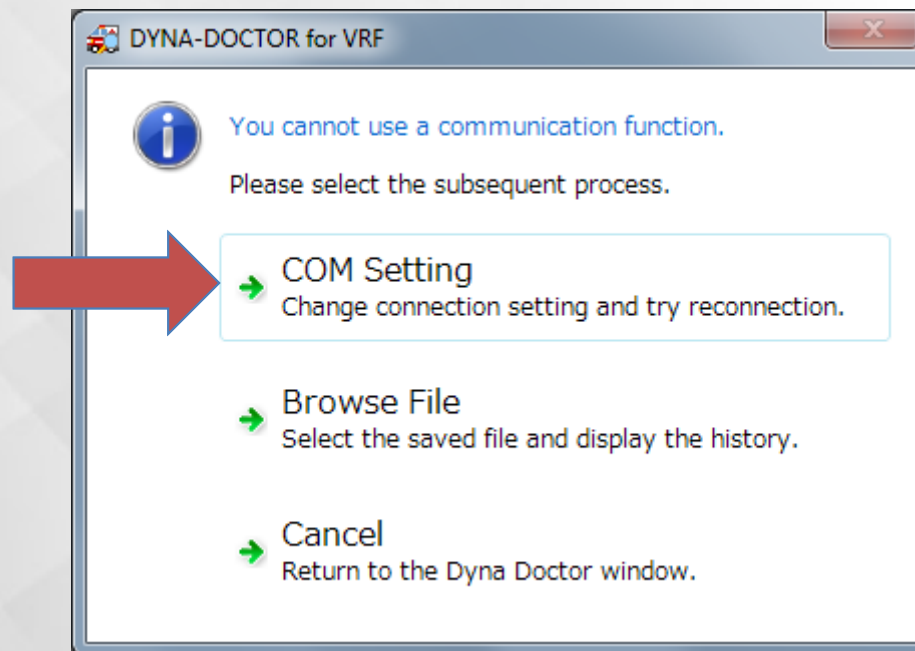
Next will be a page with the below, click OK.



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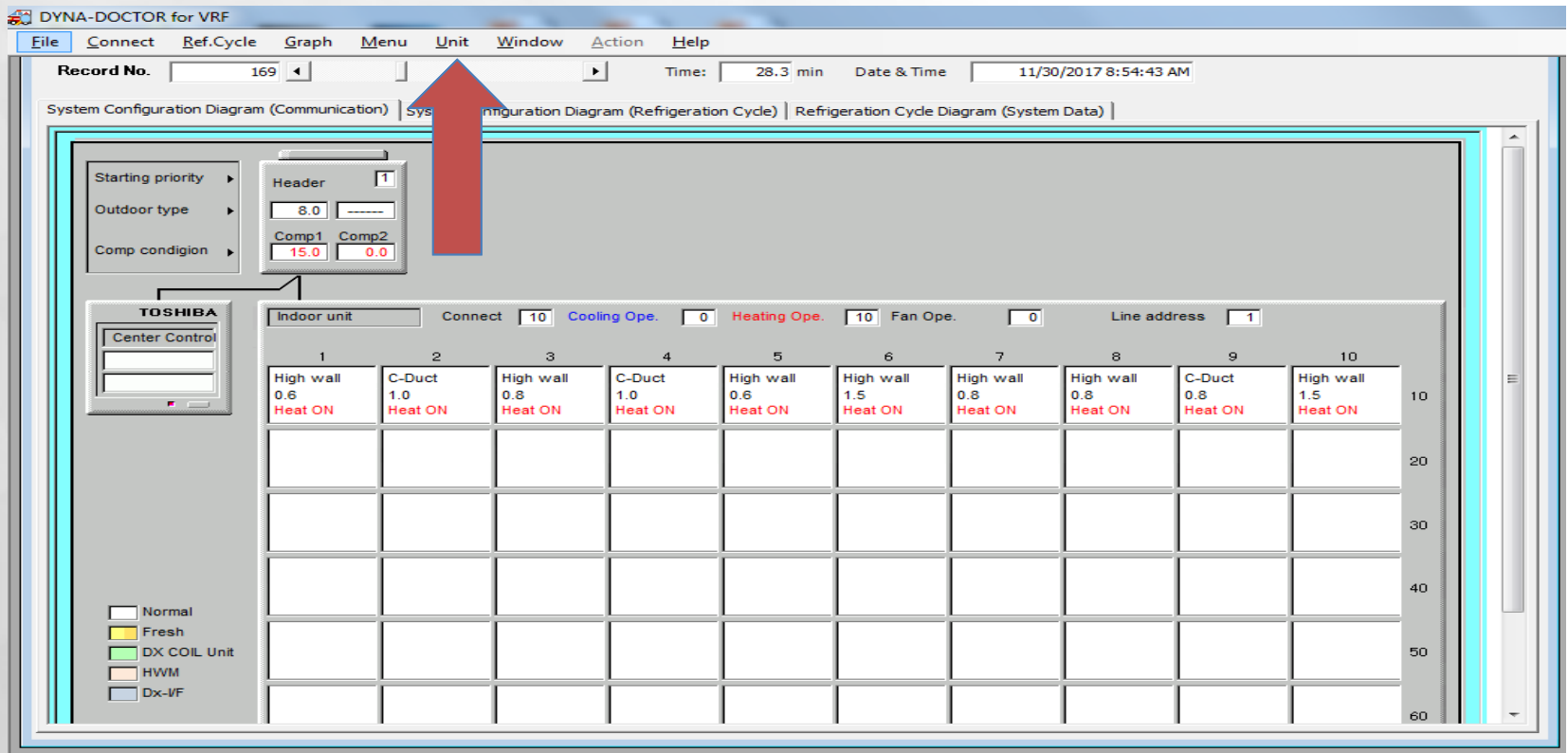
Next will be a box to select how to connect. We can choose live connection with COM Setting, Browse File to view a recorded file or Cancel to go back.



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Next after opening select Unit. Drop down menu allows to set for PSI, Tons, Fahrenheit.



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First page opened is the System Communication. I call it the connected information page.

DYNA-DOCTOR for VRF

File Connect Ref.Cycle Graph Menu Unit Window Action Help

Record No. 169 Time: 28.3 min Date & Time 11/30/2017 8:54:43 AM

System Configuration Diagram (Communication) | System Configuration Diagram (Refrigeration Cycle) | Refrigeration Cycle Diagram (System Data)

Starting priority ▶ Header 1

Outdoor type ▶ 8.0

Comp condigion ▶ Comp1 15.0 Comp2 0.0

TOSHIBA

Center Control

Indoor unit Connect 10 Cooling Ope. 0 Heating Ope. 10 Fan Ope. 0 Line address 1

1	2	3	4	5	6	7	8	9	10	
High wall 0.6 Heat ON	C-Duct 1.0 Heat ON	High wall 0.8 Heat ON	C-Duct 1.0 Heat ON	High wall 0.6 Heat ON	High wall 1.5 Heat ON	High wall 0.8 Heat ON	High wall 0.8 Heat ON	C-Duct 0.8 Heat ON	High wall 1.5 Heat ON	10
										20
										30
										40
										50
										60

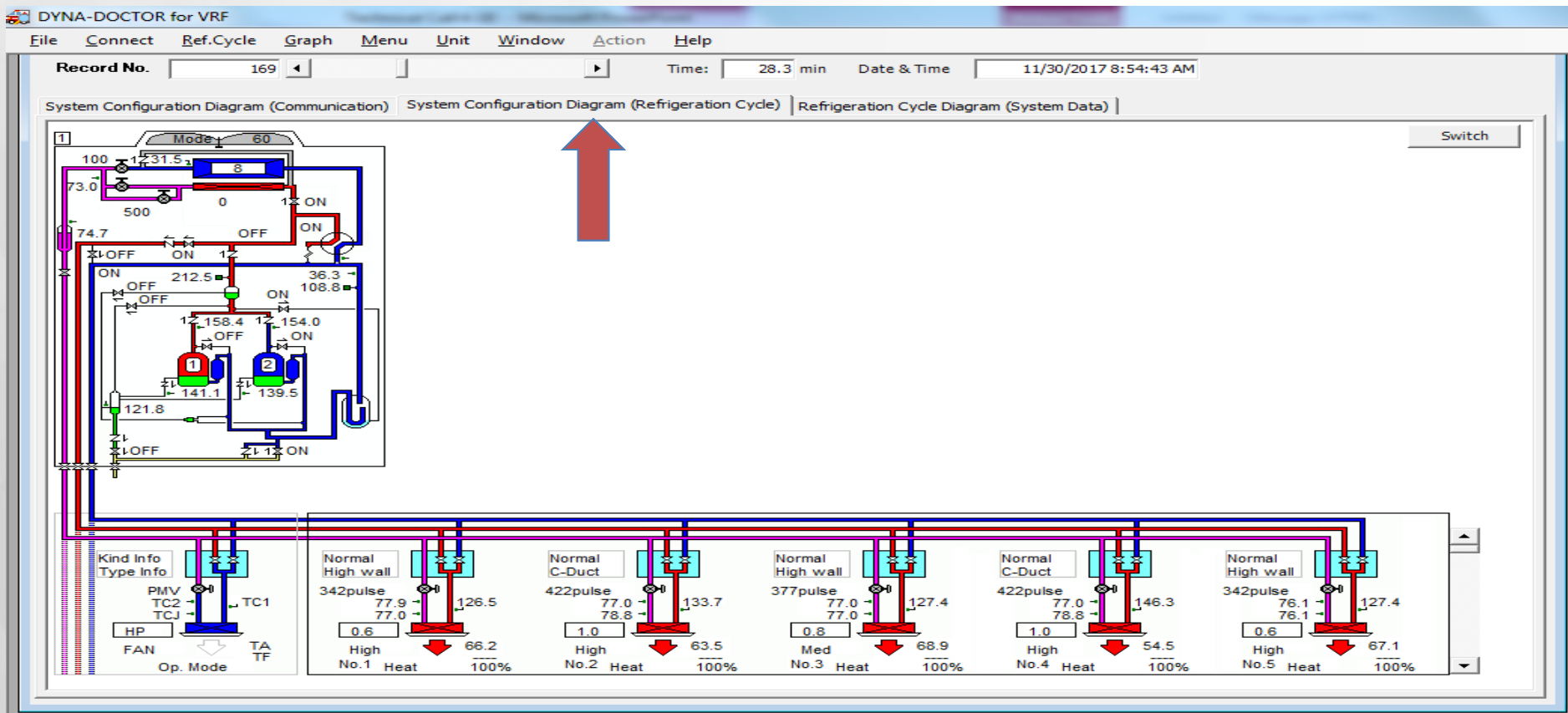
Legend:

- Normal
- Fresh
- DX COIL Unit
- HWM
- Dx-VF

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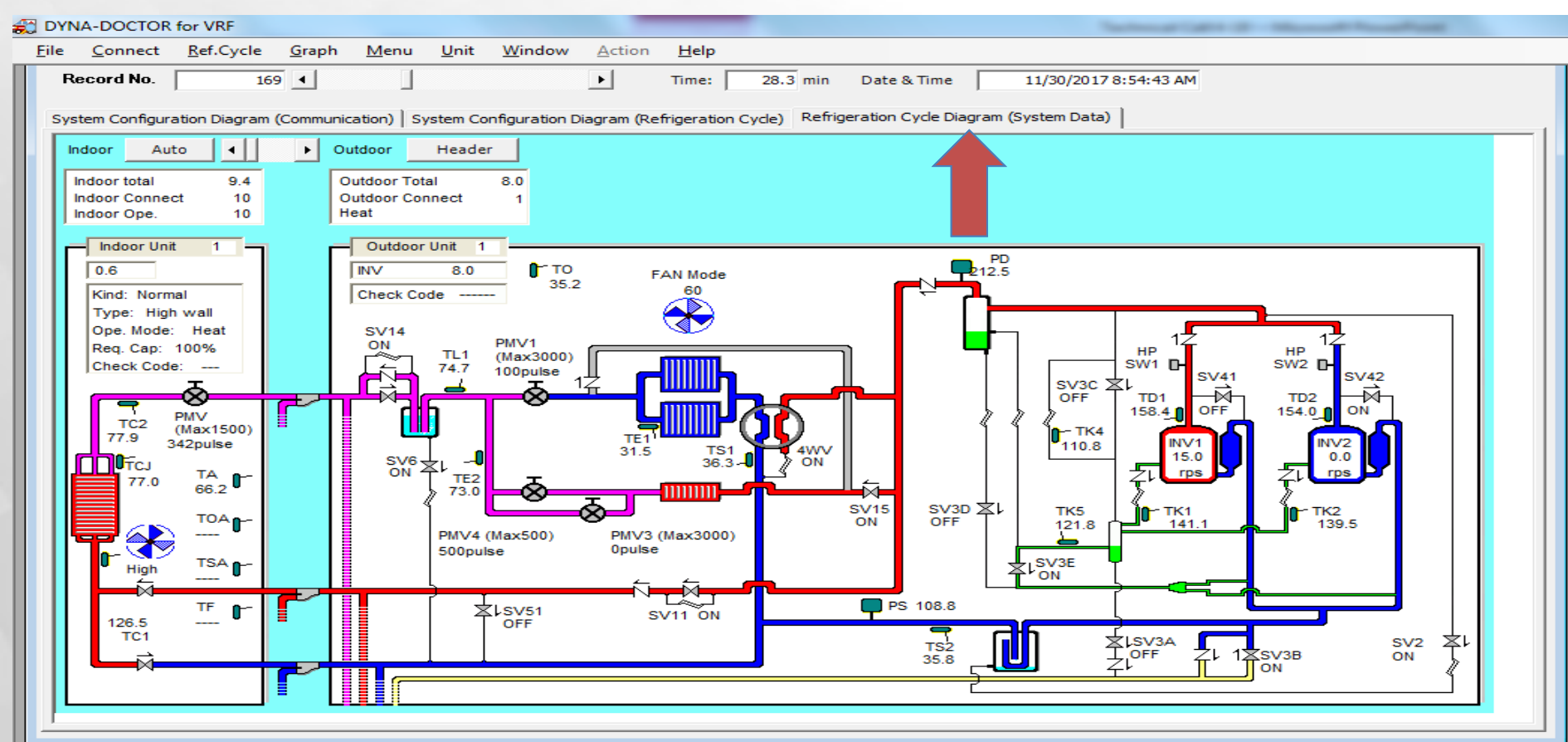
Next is Refrigerant Cycle.



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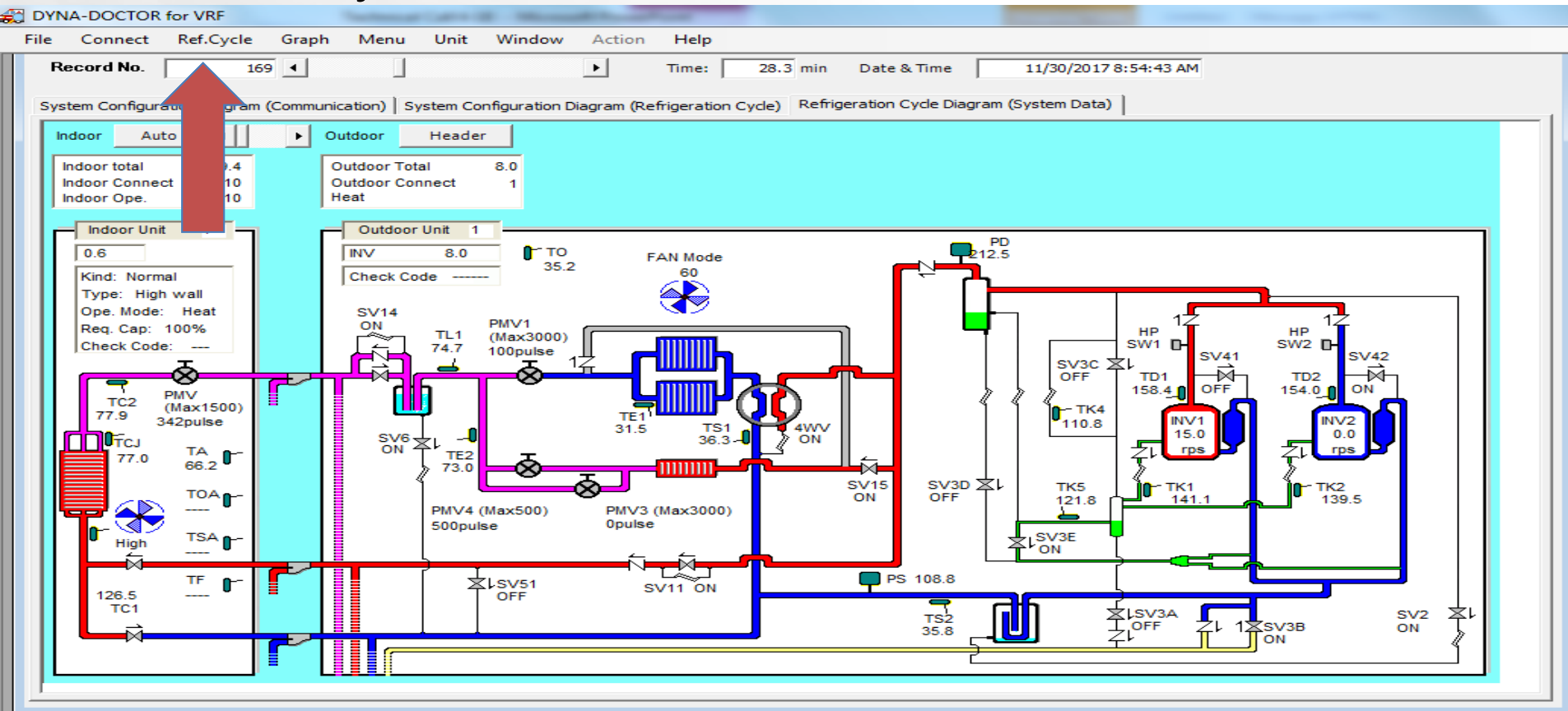
Next is Refrigerant Cycle System Data.



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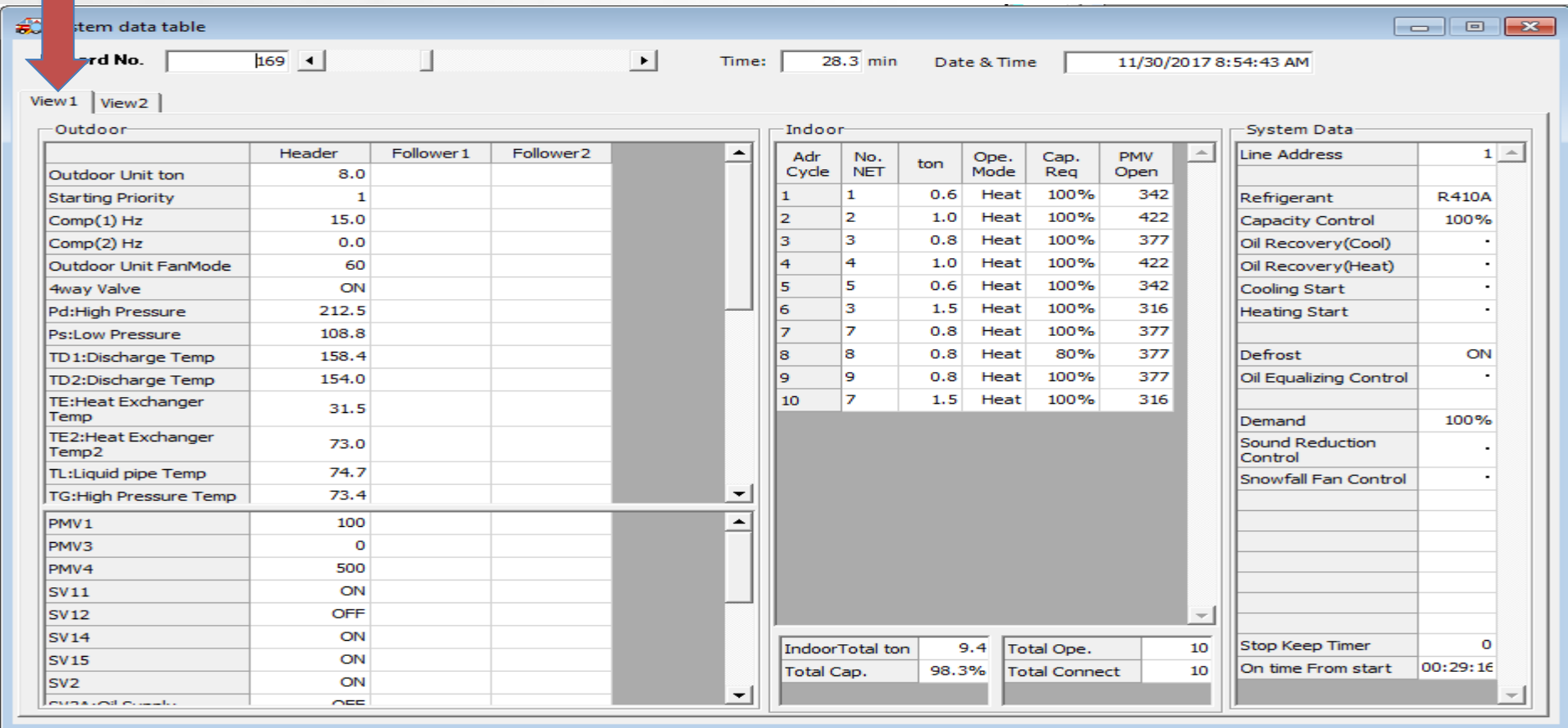
Click Ref. Cycle. Drop down box will show and choose List Data-System Data



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View 1 shows unit data. Major information all on 1 page.



The screenshot displays the 'System data table' window in the Dyna Doctor application. The interface includes a top bar with 'Unit No.' (169), 'Time' (28.3 min), and 'Date & Time' (11/30/2017 8:54:43 AM). Below this, there are tabs for 'View1' and 'View2'. The main content area is divided into three sections: 'Outdoor', 'Indoor', and 'System Data'.

Outdoor Section:

	Header	Follower1	Follower2
Outdoor Unit ton	8.0		
Starting Priority	1		
Comp(1) Hz	15.0		
Comp(2) Hz	0.0		
Outdoor Unit FanMode	60		
4way Valve	ON		
Pd:High Pressure	212.5		
Ps:Low Pressure	108.8		
TD1:Discharge Temp	158.4		
TD2:Discharge Temp	154.0		
TE:Heat Exchanger Temp	31.5		
TE2:Heat Exchanger Temp2	73.0		
TL:Liquid pipe Temp	74.7		
TG:High Pressure Temp	73.4		
PMV1	100		
PMV3	0		
PMV4	500		
SV11	ON		
SV12	OFF		
SV14	ON		
SV15	ON		
SV2	ON		
SV21:Oil Supply	OFF		

Indoor Section:

Adr Cycle	No. NET	ton	Ope. Mode	Cap. Req	PMV Open
1	1	0.6	Heat	100%	342
2	2	1.0	Heat	100%	422
3	3	0.8	Heat	100%	377
4	4	1.0	Heat	100%	422
5	5	0.6	Heat	100%	342
6	3	1.5	Heat	100%	316
7	7	0.8	Heat	100%	377
8	8	0.8	Heat	80%	377
9	9	0.8	Heat	100%	377
10	7	1.5	Heat	100%	316

System Data Section:

Line Address	
Refrigerant	R410A
Capacity Control	100%
Oil Recovery(Cool)	.
Oil Recovery(Heat)	.
Cooling Start	.
Heating Start	.
Defrost	ON
Oil Equalizing Control	.
Demand	100%
Sound Reduction Control	.
Snowfall Fan Control	.
Stop Keep Timer	0
On time From start	00:29:16

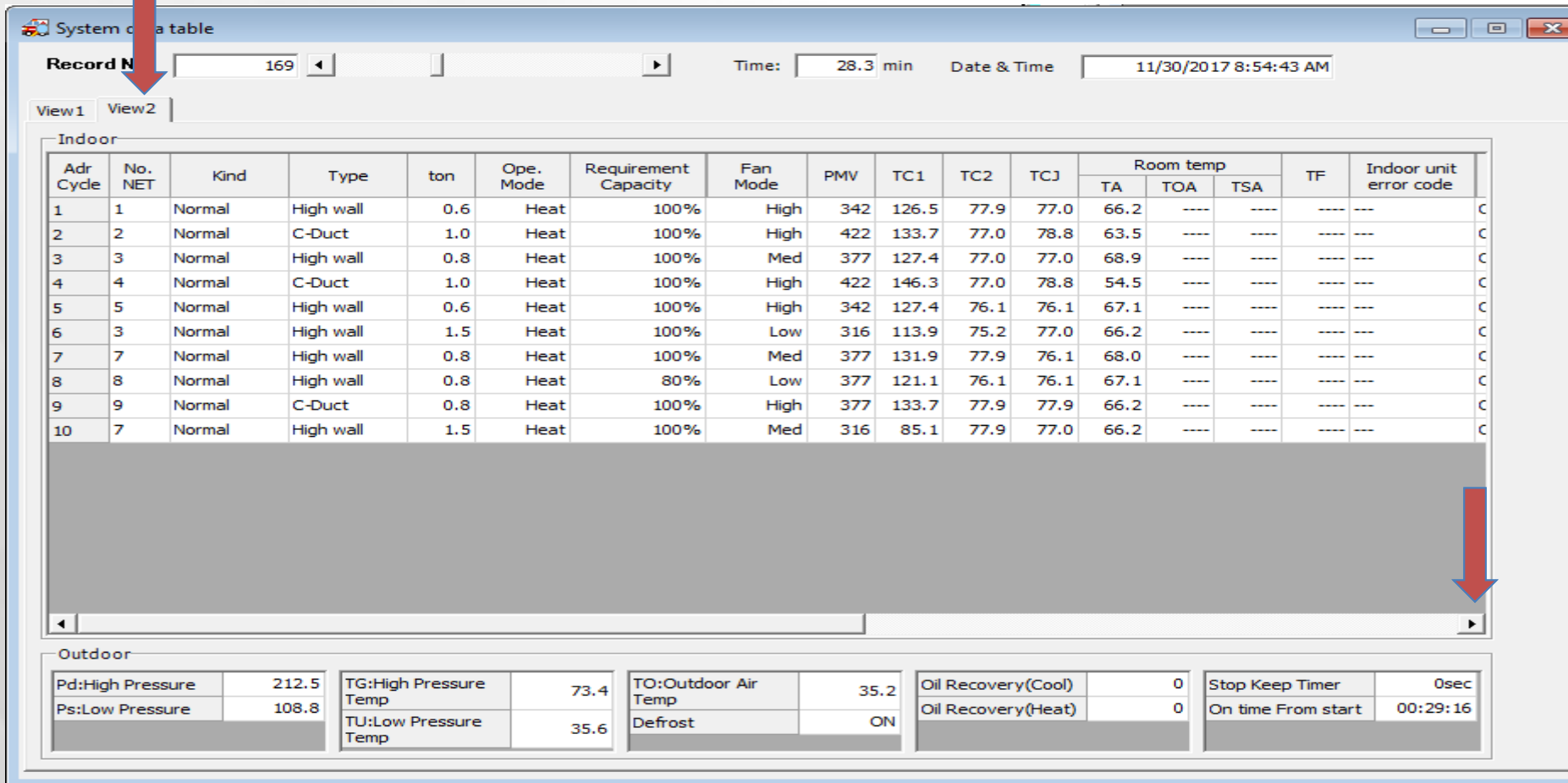
Summary Section:

IndoorTotal ton	9.4	Total Ope.	10
Total Cap.	98.3%	Total Connect	10

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View 2 shows unit data. Indoor information all on 1 page.



System data table

Record No. 169 Time: 28.3 min Date & Time 11/30/2017 8:54:43 AM

View1 View2

Indoor

Adr Cycle	No. NET	Kind	Type	ton	Ope. Mode	Requirement Capacity	Fan Mode	PMV	TC1	TC2	TC3	Room temp			TF	Indoor unit error code
												TA	TOA	TSA		
1	1	Normal	High wall	0.6	Heat	100%	High	342	126.5	77.9	77.0	66.2	----	----	----	----
2	2	Normal	C-Duct	1.0	Heat	100%	High	422	133.7	77.0	78.8	63.5	----	----	----	----
3	3	Normal	High wall	0.8	Heat	100%	Med	377	127.4	77.0	77.0	68.9	----	----	----	----
4	4	Normal	C-Duct	1.0	Heat	100%	High	422	146.3	77.0	78.8	54.5	----	----	----	----
5	5	Normal	High wall	0.6	Heat	100%	High	342	127.4	76.1	76.1	67.1	----	----	----	----
6	3	Normal	High wall	1.5	Heat	100%	Low	316	113.9	75.2	77.0	66.2	----	----	----	----
7	7	Normal	High wall	0.8	Heat	100%	Med	377	131.9	77.9	76.1	68.0	----	----	----	----
8	8	Normal	High wall	0.8	Heat	80%	Low	377	121.1	76.1	76.1	67.1	----	----	----	----
9	9	Normal	C-Duct	0.8	Heat	100%	High	377	133.7	77.9	77.9	66.2	----	----	----	----
10	7	Normal	High wall	1.5	Heat	100%	Med	316	85.1	77.9	77.0	66.2	----	----	----	----

Outdoor

Pd:High Pressure	212.5	TG:High Pressure Temp	73.4	TO:Outdoor Air Temp	35.2	Oil Recovery(Cool)	0	Stop Keep Timer	0sec
Ps:Low Pressure	108.8	TU:Low Pressure Temp	35.6	Defrost	ON	Oil Recovery(Heat)	0	On time From start	00:29:16

Dyna Doctor

Technical Call

Scroll over shows FS box valve information. Single FS box only.

System data table

Record No. 169 Time: 28.3 min Date & Time 11/30/2017 8:54:43 AM

View1 View2

Indoor

Adr Cycle	ton	Ope. Mode	Requirement Capacity	Fan Mode	PMV	TC1	TC2	TC3	Room temp			TF	Indoor unit error code	SVD	SVS	SVDD	SVSS
									TA	TOA	TSA						
1	0.6	Heat	100%	High	342	126.5	77.9	77.0	66.2	----	----	----	----	ON	OFF	ON	ON
2	1.0	Heat	100%	High	422	133.7	77.0	78.8	63.5	----	----	----	----	ON	OFF	ON	ON
3	0.8	Heat	100%	Med	377	127.4	77.0	77.0	68.9	----	----	----	----	ON	OFF	ON	ON
4	1.0	Heat	100%	High	422	146.3	77.0	78.8	54.5	----	----	----	----	ON	OFF	ON	ON
5	0.6	Heat	100%	High	342	127.4	76.1	76.1	67.1	----	----	----	----	ON	OFF	ON	ON
6	1.5	Heat	100%	Low	316	113.9	75.2	77.0	66.2	----	----	----	----	ON	OFF	ON	ON
7	0.8	Heat	100%	Med	377	131.9	77.9	76.1	68.0	----	----	----	----	ON	OFF	ON	ON
8	0.8	Heat	80%	Low	377	121.1	76.1	76.1	67.1	----	----	----	----	ON	OFF	ON	ON
9	0.8	Heat	100%	High	377	133.7	77.9	77.9	66.2	----	----	----	----	ON	OFF	ON	ON
10	1.5	Heat	100%	Med	316	85.1	77.9	77.0	66.2	----	----	----	----	ON	OFF	ON	ON

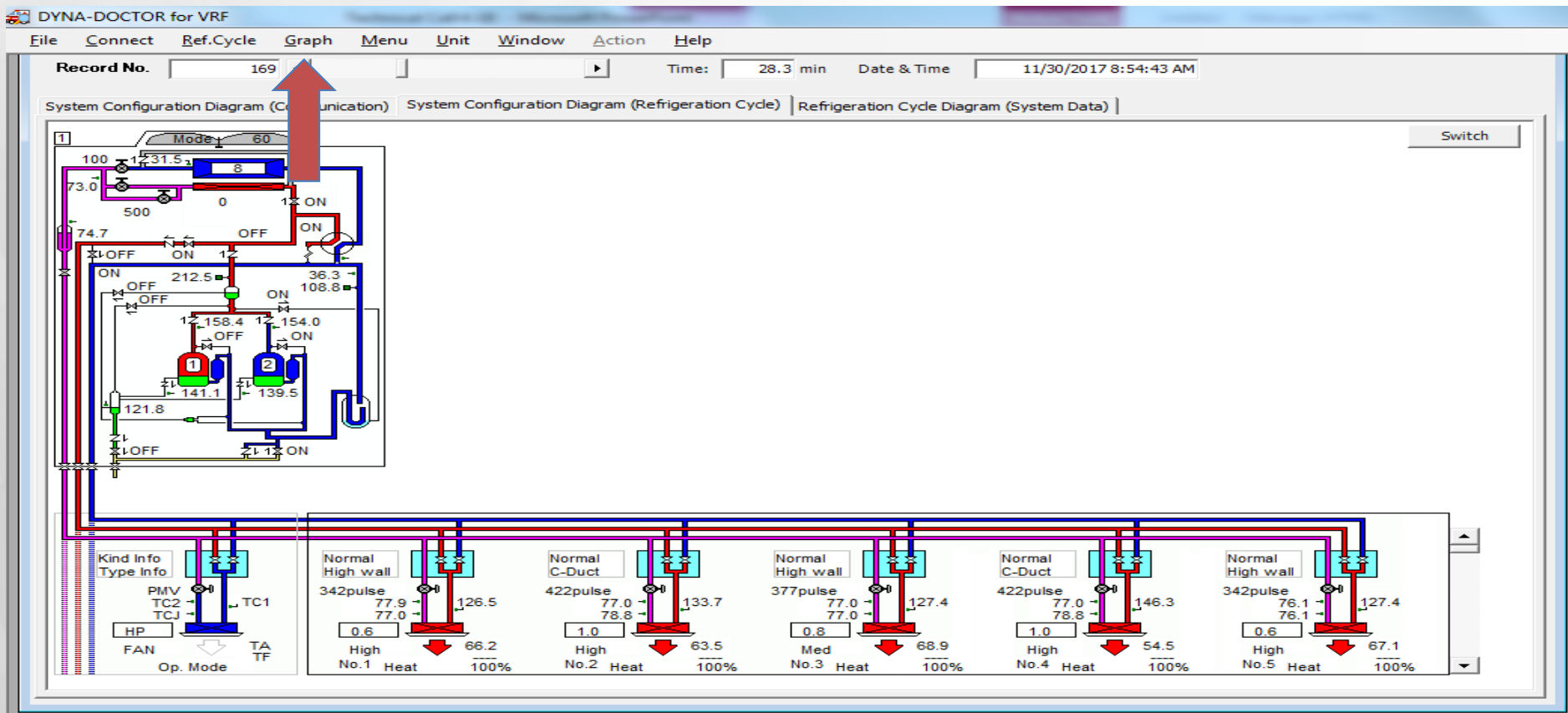
Outdoor

Pd:High Pressure	212.5	TG:High Pressure Temp	73.4	TO:Outdoor Air Temp	35.2	Oil Recovery(Cool)	0	Stop Keep Timer	0sec
Ps:Low Pressure	108.8	TU:Low Pressure Temp	35.6	Defrost	ON	Oil Recovery(Heat)	0	On time From start	00:29:16

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Click Graph. Drop down menu has outdoor or indoor unit.



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Technical Call

Outdoor System data graph: item selection

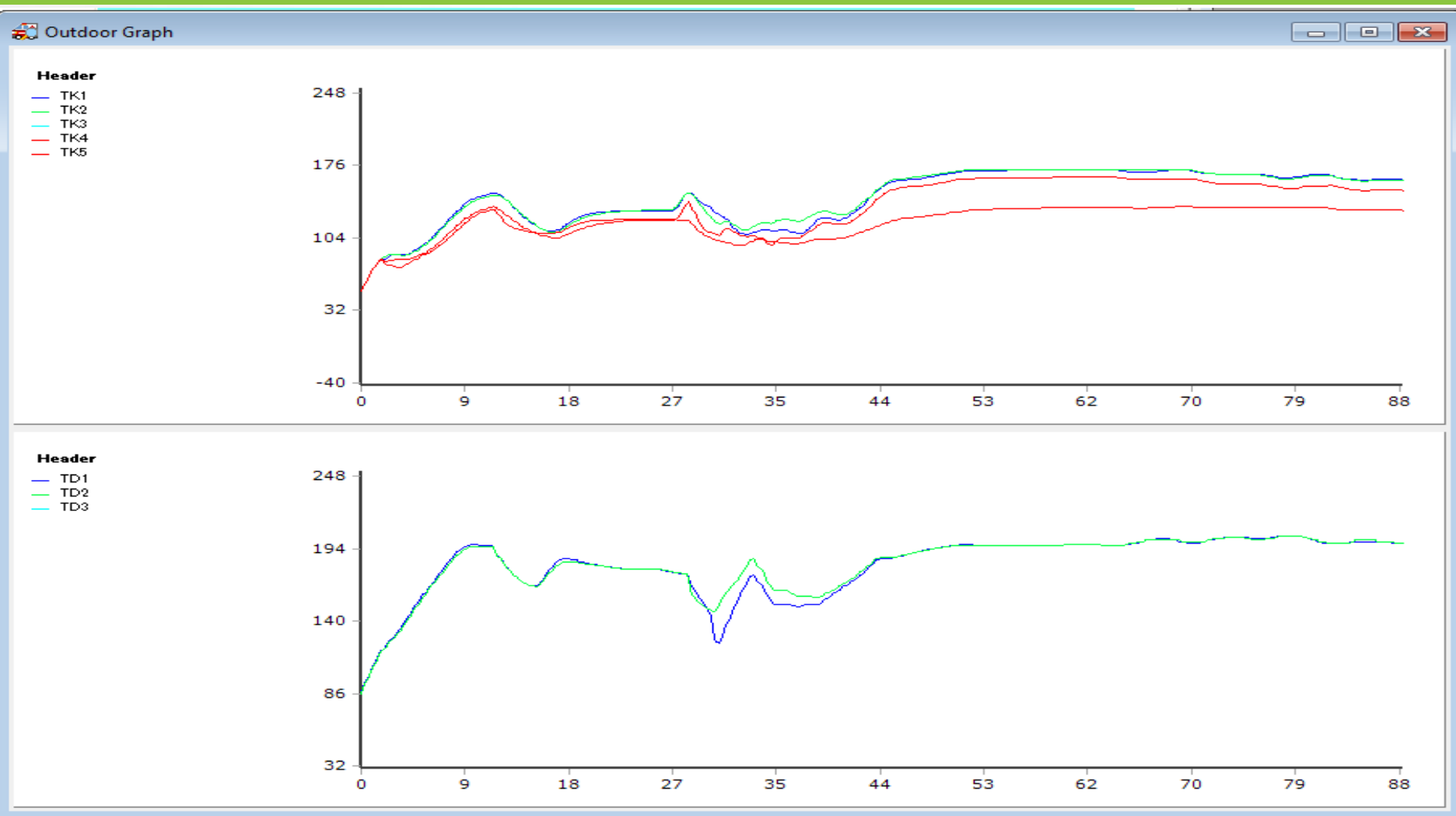
Check	Header unit	Check	Follower 1 unit	Check	Follower 2 unit	Check	Follower 3 unit
<input type="checkbox"/>	Comp Hz	<input type="checkbox"/>	Comp Hz	<input type="checkbox"/>	Comp Hz	<input type="checkbox"/>	Comp Hz
<input type="checkbox"/>	Pressure sensor	<input type="checkbox"/>	Pressure sensor	<input type="checkbox"/>	Pressure sensor	<input type="checkbox"/>	Pressure sensor
<input type="checkbox"/>	Td sensor	<input type="checkbox"/>	Td sensor	<input type="checkbox"/>	Td sensor	<input type="checkbox"/>	Td sensor
<input type="checkbox"/>	TE1/TE2/TL/TO sensor	<input type="checkbox"/>	TE1/TE2/TL/TO sensor	<input type="checkbox"/>	TE1/TE2/TL/TO sensor	<input type="checkbox"/>	TE1/TE2/TL/TO sensor
<input type="checkbox"/>	Ts sensor	<input type="checkbox"/>	Ts sensor	<input type="checkbox"/>	Ts sensor	<input type="checkbox"/>	Ts sensor
<input type="checkbox"/>	PMV1/2 open ratio	<input type="checkbox"/>	PMV1/2 open ratio	<input type="checkbox"/>	PMV1/2 open ratio	<input type="checkbox"/>	PMV1/2 open ratio
<input type="checkbox"/>	PMV4 open ratio	<input type="checkbox"/>	PMV4 open ratio	<input type="checkbox"/>	PMV4 open ratio	<input type="checkbox"/>	PMV4 open ratio
<input type="checkbox"/>	4W-Valve/SV2/SV5/SV6	<input type="checkbox"/>	4W-Valve/SV2/SV5/SV6	<input type="checkbox"/>	4W-Valve/SV2/SV5/SV6	<input type="checkbox"/>	4W-Valve/SV2/SV5/SV6
<input type="checkbox"/>	TK1,2,3,4,5	<input type="checkbox"/>	TK1,2,3,4,5	<input type="checkbox"/>	TK1,2,3,4,5	<input type="checkbox"/>	TK1,2,3,4,5
<input type="checkbox"/>	Outdoor Fan mode	<input type="checkbox"/>	Outdoor Fan mode	<input type="checkbox"/>	Outdoor Fan mode	<input type="checkbox"/>	Outdoor Fan mode
<input type="checkbox"/>	Indoor signal						

Select max 6 items.

OK Cancel

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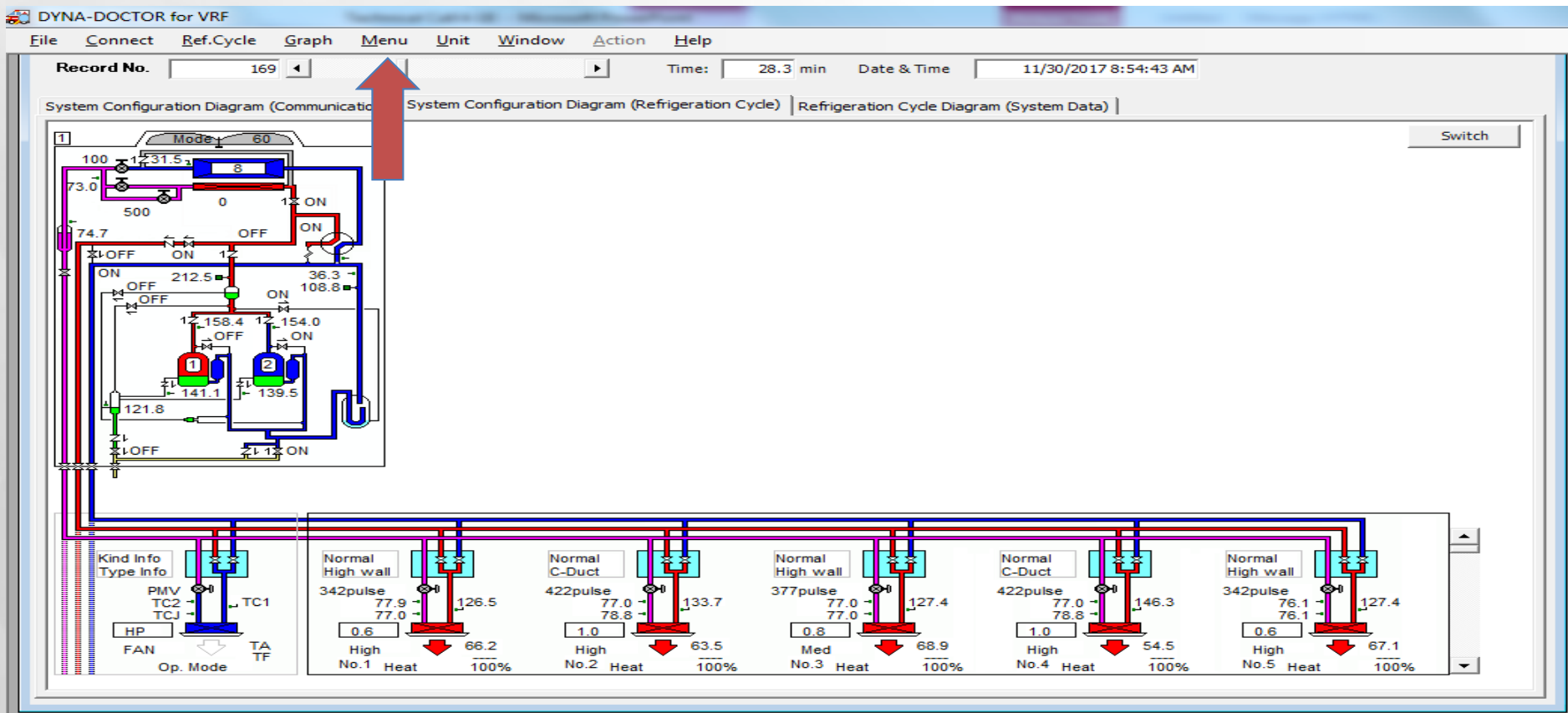
Technical Call



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Select Menu. Drop down box appears, choose List Check Codes.



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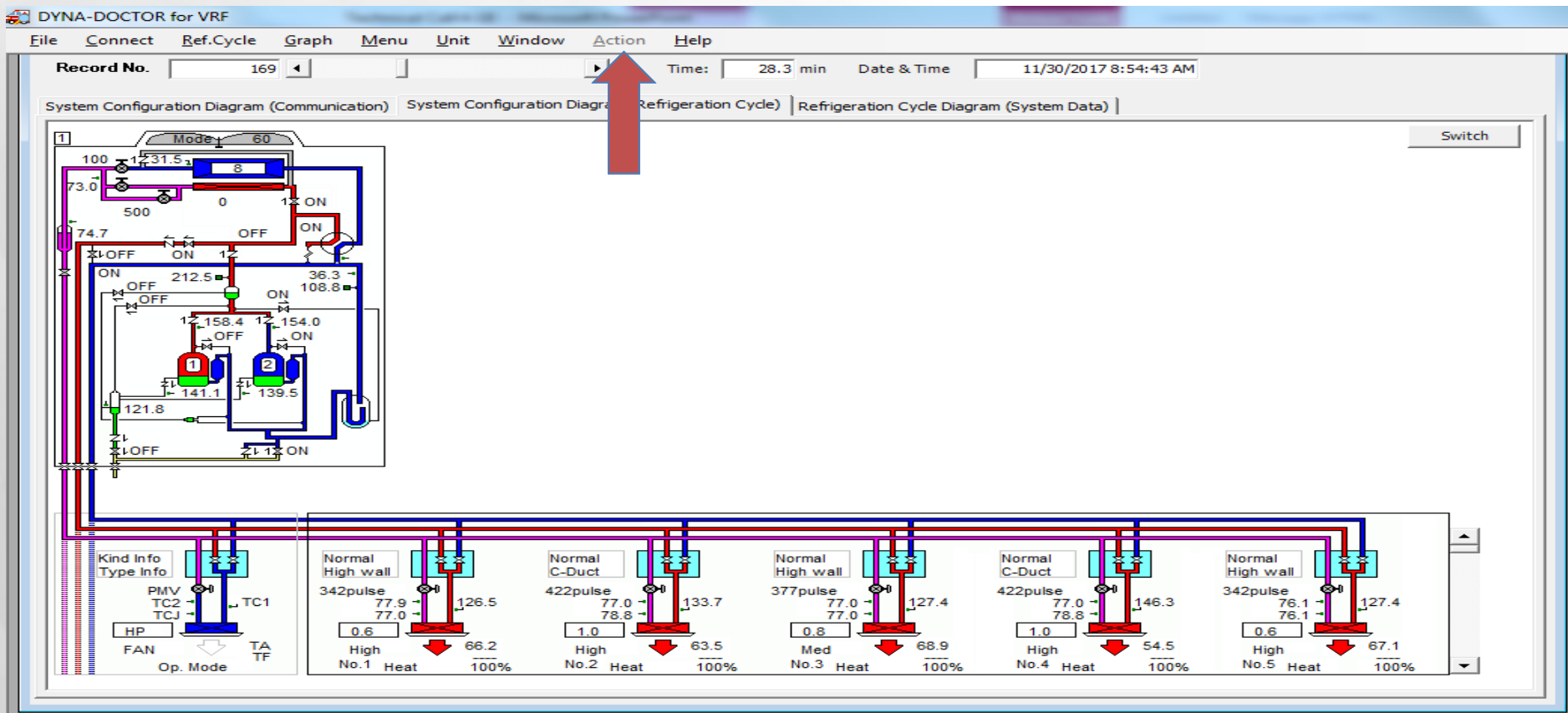
Technical Call

List of Check Codes			Detailed Information	
Check code	Detecting	Operating Element	Check Code	E19-**
C05	TCC-LINK	TCC-LINK central control device transmission trouble	Operating Element	Trouble in number of outdoor header units
C06	TCC-LINK	TCC-LINK central control device reception trouble	Determining Method	There are more than one outdoor header units in one line. There is no outdoor header unit in one line.
C12	General-purpo	Batch alarm for general-purpose device control interface		
E01	Remote contri	Indoor-remote controller communication trouble (detected at remote controller end)	Check Contents	Outdoor header unit is outdoor unit to which indoor-outdoor tie cable (U1,U2) is connected. Check connection of indoor-outdoor communication line. Check for defect in outdoor P.C. board (I/F). 00:No header unit 02:Two or more header units
E02	Remote contri	Remote controller transmission trouble		
E03	Indoor	Indoor-remote controller communication trouble (detected at indoor end)		
E04	Indoor	Indoor-outdoor communication circuit trouble (detected at indoor end)		
E06	I/F	Signal lack of indoor unit		
E07	I/F	Indoor-outdoor communication circuit trouble (detected at outdoor end)		
E08	Indoor I/F	Duplicated indoor address		
E09	Remote contri	Duplicated master remote controller		
E10	Indoor	Indoor inter-MCU communication trouble		
E12-**	I/F	Automatic address starting trouble		
E15	I/F	Indoor unit not found during automatic address setting		
E16-**	I/F	Too many indoor units connected		
E17	Indoor	Indoor units(s) -FS unit(s) communication trouble		
E18	Indoor	Trouble in communication between indoor header and follower units		
E19-**	I/F	Trouble in number of outdoor header units		
E20-**	I/F	Connection to other line found during automatic address setting		
E23	I/F	Outdoor-outdoor communication transmission trouble		
E25	I/F	Duplicated follower outdoor address		
E26	I/F	Signal lack of outdoor unit		
E28	I/F	Outdoor follower unit trouble		
E31-**	I/F	IPDU communication trouble		
E31-80	I/F	Communication trouble between MCU and Sub MCU		
F01	Indoor	Indoor TCJ sensor trouble		
F02	Indoor	Indoor TC2 sensor trouble		
F03	Indoor	Indoor TC1 sensor trouble		

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Action button will allow user to control the system from Dyna Doctor. Greyed out here because I am not live.



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Test runs can be executed from this screen. Select 1 unit or all units.

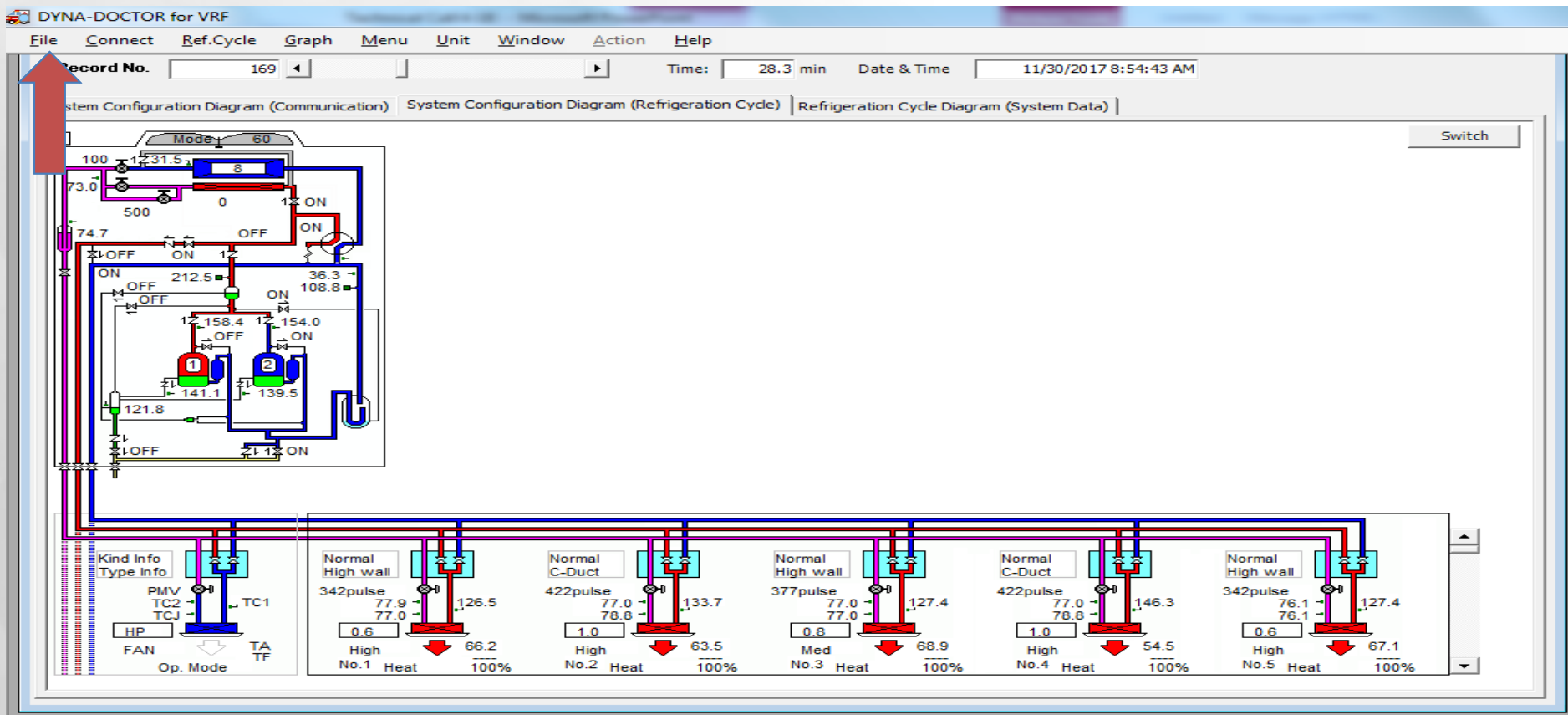
The screenshot shows the 'Test operation ON/OFF controller' window. It features a top navigation bar with tabs: Cooling, Heating, Fan, Mode store, Mode re-store, Operation, Stop, and Test operation. The main area is a grid of 40 unit controls, numbered 1 to 40. Each unit has a status display showing temperature and mode (e.g., '8.0/Stop Thermo OFF' for Unit 1). Below the status display are buttons for 'SEL', 'AIR', 'ON', 'OFF', 'TEST', and '15'. The 'TEST' button is highlighted in yellow for Unit 1. The '15' button is a small square with the number 15 inside. The grid is organized into four rows of ten units each. Units 1-10 are in the first row, 11-20 in the second, 21-30 in the third, and 31-40 in the fourth. Units 11-40 have empty status displays and buttons.

No.	Net	Status	SEL	AIR	ON	OFF	TEST	15
No. 1	Net 51	8.0/Stop Thermo OFF						
No. 2	Net 52	5.0/High Heat ON						
No. 3	Net 53	1.7/High Heat ON						
No. 4	Net 55	4.0/High Heat ON						
No. 5	Net 54	1.7/High Heat ON						
No. 6	Net 56	4.0/Stop Thermo OFF						
No. 7	Net 57	3.0/Stop Thermo OFF						
No. 8	Net 58	3.0/High Heat ON						
No. 9	Net 59	2.0/Med Heat ON						
No. 10	Net 60	4.0/High Heat ON						
No. 11	Net 61	6.0/High Heat ON						
No. 12	Net 61	1.7/High Heat ON						
No. 13	Net							
No. 14	Net							
No. 15	Net							
No. 16	Net							
No. 17	Net							
No. 18	Net							
No. 19	Net							
No. 20	Net							
No. 21	Net							
No. 22	Net							
No. 23	Net							
No. 24	Net							
No. 25	Net							
No. 26	Net							
No. 27	Net							
No. 28	Net							
No. 29	Net							
No. 30	Net							
No. 31	Net							
No. 32	Net							
No. 33	Net							
No. 34	Net							
No. 35	Net							
No. 36	Net							
No. 37	Net							
No. 38	Net							
No. 39	Net							
No. 40	Net							

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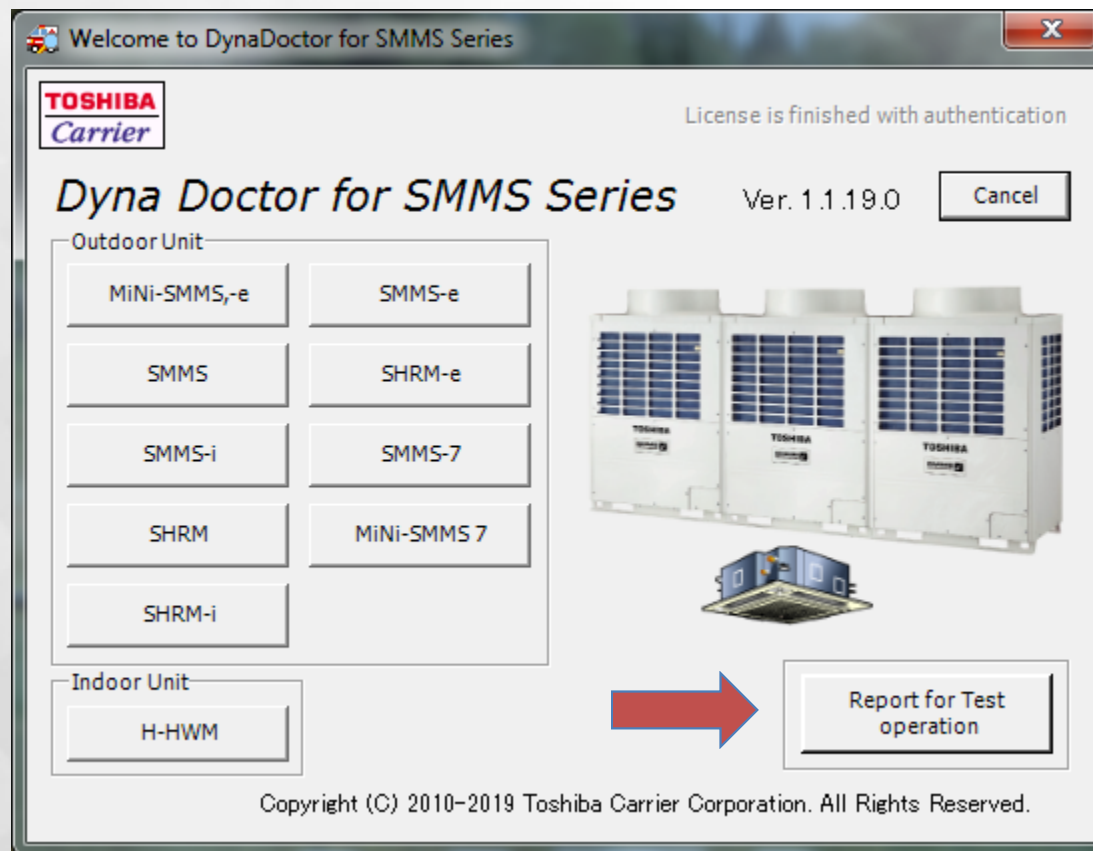
To save a data file click on the File drop down menu and select Save. Follow path to save to a folder. Save early.



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Dyna Doctor can generate a report. Select Report for Test Operation from main screen.



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Fill in the data fields and the report can be printed saved exported etc.

The screenshot shows a software window titled "Report for Test operation" with a menu bar (File, Test report, Refrigerant amount calculation, Help). The interface is divided into several sections:

- Report No.**: A field for the report number.
- Project/Site data**: Fields for Project/Site, Customer, and System name or No.
- Test result (Outdoor)**: A field for the outdoor test result.
- Test result (Indoor)**: A field for the indoor test result.
- Date**: Two date pickers labeled "Monday , Decem" and "Monday , Decem".
- Display Data attachment**: A checkbox.
- Test result file**: A field for the file name and a "Search" button.
- Customer data**: A dropdown menu for "Customer List" (set to "New customer data") and fields for Customer, Div./Section, Name, E-mail, Tel, Address, and Post code.
- Test person name**: A dropdown menu for "Test Person List" (set to "New test person") and fields for Company name, Div./Section, Name, E-mail, Tel, Fax, Address, and Post code.
- Test Result**: A section with a text area for the test result, a "Proposal" checkbox, and a note "(If have proposal, pls check, and write below. (If write proposal, Test result is Max. 5 lines)".

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Technical Call

Dyna Doctor has an installation manual and a separate operation manual that details all the possibilities for reporting etc. For more information please read these documents.

