

Ver. 1.2

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## 1. Overview

*"DynaDoctor V"* analyses data sent from the Dynakit, and supports the status display of outdoor and indoor units. This tool can be used to check refrigerant cycle data, display various data graphs, execute indoor unit test runs and create reports of test run results.

Furthermore, received data can be saved and browsed, and secondary use of data can be carried out easily.

## 2. Operating Environment

The following is the ideal operating environment for this software:

Item	Specifications
PC	Windows 7 Windows 8.1 Windows 10 compliant
Operating System	Windows 7 Windows 8.1 Windows 10 compliant
Microsoft Excel	Excel 2003 or later

- 3. DynaDoctor V basic operation
- 3.1. DynaDoctor V functions
- 3.1.1. Check refrigerant cycle data

A refrigerant cycle data check can be performed using DynaDoctor V. This function allows for visual checking of the status of outdoor and indoor units.

💭 System Configuration Di	iagram										- 0 -
Record No.	0 •		Þ	Time:	0.0	min Date a	& Time	9:52:38 AM			
System Configuration Diagram	m (Communication	) System Cor	nfiguration Diagr	am (Refrigeratio	on Cycle) Refri	geration Cycle D	)iagram (System	Data)			
Starting priority	Header	1	Follower1	3	Follower2 2	1					
Outdoor type	16.0		14.0		12.0						
	Comp1 Comp			2 Comp3	Comp1 Comp2						
Comp condigion	50.9 49.	1 47.3	0.0 52.9	51.1	60.9 64.5						
TOSHIBA						_			_		
Center Control	Indoor unit	Conne	ct 12 Cooli	ng Ope. 🛛 🛛 🛛	Heating Ope.	9 Fan Op	e. 0	Line ad	dress 5		
Connect	1	2	3	4	5	6	7	8	9	10	- 11
BMS Connect	H-Duct 8.0	C-Duct 5.0	2-way 1.7	2-way 4.0	4-way 1.7	2-way 4.0	4-way 3.0	4-way 3.0	4-way 2.0	2-way 4.0	10
	Thermo OFF	Heat ON	Heat ON	Heat ON	Heat ON	Thermo OFF	Thermo OFF	Heat ON	Heat ON	Heat ON	-
	2-way 6.0	2-way 1.7									20
	Heat ON	Heat ON			<u> </u>	<u> </u>		<u> </u>		<u> </u>	-
											30
	<u> </u>		<u> </u>	<u> </u>	<u> </u>	<u> </u>	I		<u> </u>		-
											40
Normal	<u> </u>		<u> </u>	<u> </u>	<u> </u>	<u> </u>	L	<u> </u>	-		-
Fresh											
DX COIL Unit	<u> </u>	<u> </u>			<u> </u>		<u></u>	<u> </u>			
P											

Figure 3.1.1

## 3.1.2. Save/browse data

Data communicated by the Dynakit can be saved. Furthermore, this saved data can be used to check past data.

[ File Name ]	C: \Users \User \Desktop \DD5 \manual.mis		<u>R</u> efer to
[ Comment ]			
[Data Sampling Time]	01sec 💌		
[Date]	Monday , December 10, 🔻		
[Data Count]	3539	OK	Cancel

Figure 3.1.2

### 3.1.3. Display data graphs

Data graphs for indoor and outdoor units can be displayed using saved data. Viewing several graphs together makes it easy to compare data.

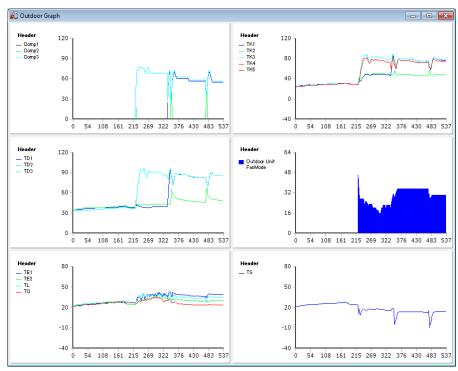


Figure 3.1.3

### 3.1.4. Air conditioner test runs

Test runs can be executed on connected indoor units. Furthermore, received data can be used to create reports of test run results.

l est c	operation	ON/OF	F control	ler															
C	ooling		Heating		Fa	in	м	ode sto	re	Mode re	e-store		Oper	ation		Stop		Test op	eration
lo. 1	Net 51	No. 2	Net 52	No. 3	Net 53	No. 4	Net 55	No. 5	Net 54	No. 6	Net 56	No. 7	Net 57	No. 8	Net 58	No. 9	Net 59	No. 10	Net 60
8.0	)/Stop mo OFF	5.0	/High at ON	1.7	7/High at ON	4.0	/High at ON	1.7	/High at ON	4.0	/Stop no OFF	3.0	)/Stop mo OFF	3.0	/High at ON	2.0	)/Med at ON	4.0	/High at ON
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR
ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST
	Net 61		Net 61 /High	No. 13	Net	No. 14	Net 📃	No. 15	Net 📃	No. 16	Net 📃	No. 17	Net	No. 18	Net	No. 19	Net	No. 20	Net 🗌
	at ON		/High at ON																
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR
ON	15	ON	15	ON	15 -	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST
lo. 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 🗌
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR
ON	15	ON	15	ON	15 -	ON	15 📩	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST
lo, 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
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR
ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST

Figure 3.1.4

- 3.2. Starting/exiting DynaDoctor V
- 3.2.1. Start-up DynaDoctor

DynaDoctor V can be started up in 2 ways, using a desktop shortcut or the Windows menu.

- ① Start-up DynaDoctor
  - Using a desktop shortcut
     Double-click the desktop shortcut.
  - Using the Windows menu
     In the [Start] menu, select [All Programs] > [Toshiba] > [DynaDoctor V] > [DynaDoctor V].
- ② When DynaDoctor V has started-up

The DynaDoctor V main menu screen is displayed when DynaDoctor V has started-up. The functions can now be used.

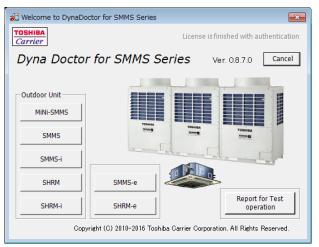


Figure 3.2.1

3.2.2. Exiting DynaDoctor V

Click the [Cancel] button to exit DynaDoctor V.

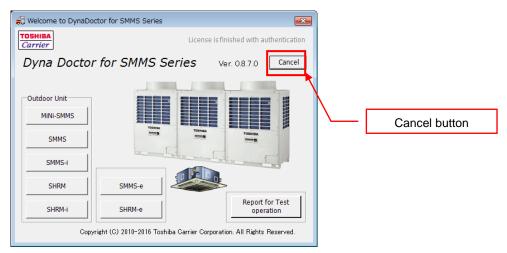


Figure 3.2.2

## 4. Using DynaDoctor V

DynaDoctor V uses an MDI window. Each window is displayed inside the MDI window.

### 4.1. Displaying data

Choose the button for the connected model from the [Outdoor unit] group box.

💭 Welcome to DynaDoct	or for SMMS Series		
TOSHIBA Carrier	Licens	e is finished with authentication	
Dyna Doctor	for SMMS Series	Ver. 0.8.7.0 Cancel	
Outdoor Unit			
MiNi-SMMS			
	TOSHIEA TOSHIEA	TOSHIBA	
SMMS		Contract of Contra	
SMMS-i	The surface of the surface	film film	
SHRM	SMMS-e		
		Report for Test	
SHRM-i	SHRM-e	operation	
Copuris	ght (C) 2010-2016 Toshiba Oarrier Cor	moration All Pighta Pasaruad	
Ооруна	an toy zone zone roshiba oanner oor		
		Outdoor unit	t group box
	Figure 4.1.1		

The MDI parent window opens. If the communication function is unavailable, a message is displayed. Choose [Yes] to open the window. Choose [No] to return to the main menu.

SMMS-i DYNA-I	DOCTOR	83
	munication function no se the already saved da	
	Yes	No
	Yes	No

Figure 4.1.2

When communication is possible, or when browsing data, a wait screen is displayed while the screen renders.



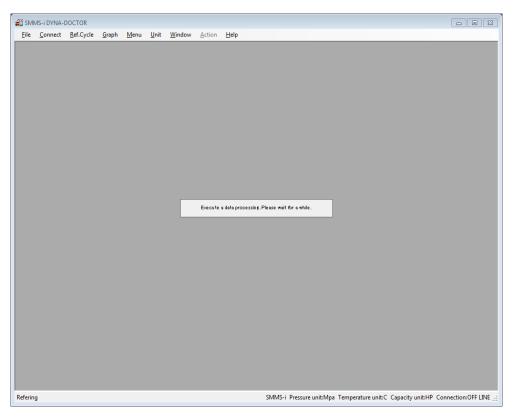


Figure 4.1.3

When the screen has been rendered, a system configuration diagram window opens.

System Configuration D	-			1 -							
Record No.	0 •		•	Time:	0.0	min Date (	& Time	9:52:38 AM			
ystem Configuration Diagra	m (Communicatio	n) System Co	nfiguration Diag	ram (Refrigerati	on Cycle)   Refri	geration Cycle D	)iagram (System	Data)			
		<u> </u>	<u>r</u>			-					
Starting priority	Header	1	Follower1	3	Follower2 2	i					
Outdoor type 🕨	16.0	-	14.0		12.0	]					
Comp condigion 🕨	Comp1 Comp 50.9 49	02 Comp3 .1 47.3	Comp1 Comp 0.0 52.9	2 Comp3 51.1	Comp1 Comp2 60.9 64.5	]					
						<u></u>					
TOSHIBA	Indoor unit	Conne	ect 12 Cool	ing Ope. 🛛 0	Heating Ope.	9 Fan Op	e. 🚺	Line a	ddress 5		
Center Control Connect	1	2	3	4	5	6	7	8	9	10	_
BMS Connect	H-Duct 8.0 Thermo OFF	C-Duct 5.0 Heat ON	2-way 1.7 Heat ON	2-way 4.0 Heat ON	4-way 1.7 Heat ON	2-way 4.0 Thermo OFF	4-way 3.0 Thermo OFF	4-way 3.0 Heat ON	4-way 2.0 Heat ON	2-way 4.0 Heat ON	10
	2-way 6.0 Heat ON	2-way 1.7 Heat ON									20
											30
											40
Normal Fresh DX COIL Unit											

Figure 4.1.4

### 4.2. Saving received data

To save communication data, select [Save...] from the [File] menu. A save window opens.

2	🖸 SM	MS-i DYNA-I	DOCTOR	
	<u>F</u> ile	<u>C</u> onnect	<u>R</u> ef.Cycle	<u>G</u>
		<u>S</u> ave		
		<u>B</u> rowse		
		<u>E</u> dit		
		Se <u>t</u> up		
		<u>P</u> rint		
		E <u>x</u> it		

Figure 4.2.1

To choose the save destination, click the [Browse] button. A save file dialogue is displayed. Choose a save destination. The destination file path is displayed in the window.

Change the [Data Sampling Time] to alter the frequency with which data is saved to the file. Comments can also be added to files.

Save Data			Browse button
[ File Name ]	C:\DD5\20101106_A Ver.0.0.1.9.mis	Browse	
[Comment]	•		
[ Data Sampling Time ]	01sec	File Name	
[ Date ]	Monday , December 10, 🔽	Cancel	
Please select the Dyna Doct	or save folder and file.		
mpling time	Figure 4.2.2		

Click the [OK] button to start saving data to the file.

💭 Save Data				
[ File Name ]	C:\DD5\20101106_A Ver.0.0.1.9.mis		Browse	
[ Comment ]				
[Data Sampling Time]	01sec			
[ Date ] [ Data Count ]	Monday , December 10, 💌	ОК	<u>C</u> ancel	
Please select the Dyna Doc	tor save folder and file.			
	Figure 4.2.3			OK button

### 4.3. Browsing saved data

Data saved in <u>Saving received data</u> can be browsed. To browse data, choose [Browse...] from the [File] menu. A file browsing window opens.

💭 SMMS-i DYNA-DOCTOR						
<u>F</u> ile	<u>C</u> onnect	<u>R</u> ef.Cy	cle	G		
<u>S</u> ave						
Browse						
	<u>E</u> dit					
Se <u>t</u> up						
Print						
Exit						
	<u>F</u> ile	File <u>Connect</u> <u>Save</u> <u>Browse</u> <u>Edit</u> Se <u>t</u> up <u>Print</u>	File <u>Connect Ref</u> .Cy <u>Save</u> Browse Edit Se <u>t</u> up <u>P</u> rint	File <u>Connect Ref.Cycle</u> Save Browse Edit Set up <u>Print</u>		

Figure 4.3.1

Click the [Refer to] button to select which data to browse. An open file dialogue is displayed. Select a file. The destination file path, save date and data count are displayed on the screen. If there are any comments attached to the file, they are also displayed.

	💭 Data Reference				
	[ File Name ]	C:\DD5\20101106_A Ver.0.0.1.9.mis	<u>R</u> efer to		
	[ Comment ]	<b>X</b>		$-\Box$	Refer to button
Data Count	Jata Sampling Time ]	01sec	File Name		
	[Date]	Monday , December 10, 💌	DK <u>C</u> ancel		
	Please select the Dyna Docto	or data.			

Figure 4.3.2

Click the [OK] button to start browsing the file.

[ Data Count ] Please select the Dyna Doct	of data.	ОК	<u>C</u> ancel	
[Date]	Monday , December 10, 💌			
[ Data Sampling Time ]	01sec 💌			
[ Comment ]				
[ File Name ]	C:\DD5\20101106_A Ver.0.0.1.9.mis		<u>R</u> efer to	

When browsing files, [Record No.], a scroll bar, [Time] (time elapsed since the first piece of data was saved) and [Date & Time] (time that data was received) are displayed.

	Time that data was received
Record No.	
SMMS-i DYNA-DOCTOR	
Eile Connect Ref.Cycle Graph Menu Unit Window Action Help	
System Configuration Diagram	- • •
Record No.         0         ⊥         Time:         0.0 min         Date & Time         5:06:44 PM	
System Configuration Diagram (Communication) System Configuration Diagram (Refrigeration Cycle) Refrigeration Cycle Diagram (System Data)	
Figure 4.3.4	
	apsed since the first of data was saved

Move the scroll bar to change the data being displayed. A number can also be entered directly into Record No. to change the displayed data.

### 4.4. Editing data files

File comments saved in <u>Saving received data</u> can be edited. To edit comments choose [Edit...] from the [File] menu. A file edit window opens.

💭 SMMS-i DYNA-DOCTOR						
<u>F</u> ile	<u>File</u> <u>Connect</u> <u>R</u> ef.Cyc					
	Save					
	Browse					
	<u>E</u> dit					
	Se <u>t</u> up					
	<u>P</u> rint					
	Exit					

Figure 4.4.1

Click the [Renewal] button to select which data to edit. An open file dialogue is displayed. Select a file. The destination file path, save date and data count are displayed on the screen. If there are any comments attached to the file, they are also displayed.



	😴 File Edit		×		
	[ File Name ]		Renewal		
	[ Comment ]				Renewal button
Data Count	ata Sampling Time ]		File Name	9	
	[ Date ] [ Data Count ]	Monday , December 10, 🔽	OK <u>C</u> ancel		
	Select a File Name and Press	The [Renewal] Button.			

Figure 4.4.2

Click the [OK] button to save the edited comments.

💭 File Edit		<b>—</b>	
[ File Name ]		<u>R</u> enewal	
[ Comment ]			
[Data Sampling Time] 01sec 💌			
[Date] Monday , December 10, 💌			
[ Data Count ]	ОК	<u>C</u> ancel	
Select a File Name and Press The [Renewal] Button.	<b></b>		
Figure 4.4.3			OK button

#### 4.5. Communication settings

Communication settings can be changed. To open the communication settings window, select [Set up...] from the [File] menu.

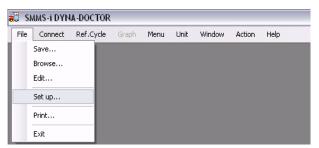


Figure 4.5.1

The COM port on the computer which is running the system is displayed in [Port Setting]. To change the COM port used for the connection, select a COM port from the list. Press the [Set] button to change the COM port.

TOSHIBA	Set up Port Setting COM1 COM1 COM2 1 Day. Port Setting
	<u>Set</u> <u>C</u> ancel
Set butto	Figure 4.5.2

### 4.6. Printing out the screen

The displayed screen can be printed out. To open the print settings window, select [Print...] from the [File] menu.

-	SMN	/IS-i DYNA-E	OCTOR	l	
E	ile	<u>C</u> onnect	<u>R</u> ef.Cy	cle	G
		Save			
	1	Browse			
	!	<u>E</u> dit			
	:	Se <u>t</u> up			
	ļ	<u>P</u> rint			
		E <u>x</u> it			

Figure 4.6.1

Click the [Property] button to change the printer settings. A print dialogue is displayed. The number of copies can also be input directly.

Print			
	rinter Microsoft XPS Document Writer	Property	
	Copies 1		Property button
		<u>O</u> K <u>C</u> ancel	
No. of copies	Figure 4.6.2		



Print		
Printer		
<u>N</u> ame:	Microsoft XPS Document Writer	✓ Properties
	Ready	
Type: Where:	Microsoft XPS Document Writer XPSPort:	
Comment		Print to file
Print range		Copies
• <u>A</u> ll		Number of <u>c</u> opies: 1 📫
C Page	s <u>f</u> rom: <u>t</u> o:	
C Selec	tion	11 22 33 Collate
		OK Cancel

Figure 4.6.3

Click the [OK] button to print out the screen.

4.7. Finishing communicating/browsing

To finish communicating with the outdoor unit or browsing a data file, select [Select Type...] from the [Connect] menu.

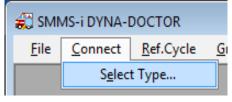


Figure 4.7.1

A finish confirmation message is displayed. Click [OK] to end communication/browsing and go to the main menu.

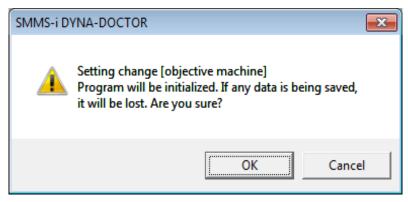


Figure 4.7.2

4.8. Managing the windows

Use the [Window] menu to manage the open windows.

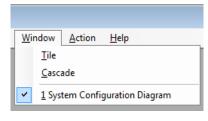


Figure 4.8.1

### 4.8.1. Displaying windows side by side

Choose [Tile] from the [Window] menu to display windows side by side. The open windows are automatically lined up and positioned.

Wir	ndow	Action	Help		
	Tile				
	Cascade				
✓ 1 System Configuration Diagram					

Figure 4.8.2

SMMS-i DYNA-DOCTOR	
File Connect Ref.Cycle Graph Menu Unit Window	
System control data table	
Record No. 0	▶ Time: 0.0 min Date & Time 9:52:38 AM ▶ Time:
Release protection           1         Hi pressure release         3.3         MPa           0         Discharge temp release         1900         A           0         Discharge temp release         1900         A           0         perationg current         IIV2         8.7         A           0         perationg current         IIV2         8.7         A           INV3         8.3         A         0         Heat sink overheat release           TH1         27.0         C         C           Heat sing Temp         TH2         25.0         C           TH3         27.0         C         0           Ocool stop(ambient temp low)         0         Heat stop(ambient temp hi)         -           Valve control         0         SV2         -         0           (2)Hig pressure release         0         0         -         0           (3)Low pressure release         0         -         -         0           (4)Ol dlubtion protect         0         -         -         -	detect error       U1
Center Control Connect H-Duct C-Duct 2-way	Coling Ope         0         Heating Ope         9         Fan Ope         0         Line address         5           4         5         6         7         8         9         10           2-way         4-way         2-way         4-way         2-way         10         10
Heating Refering	SMMS-i Pressure unit:Mpa Temperature unit:C Capacity unit:HP Connection:ON LINE;

Figure 4.8.3

4.8.2. Displaying windows in a cascade

Choose [Cascade] from the [Window] menu to display windows in a cascade. The open windows are automatically stacked and positioned.

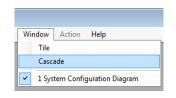


Figure 4.8.4

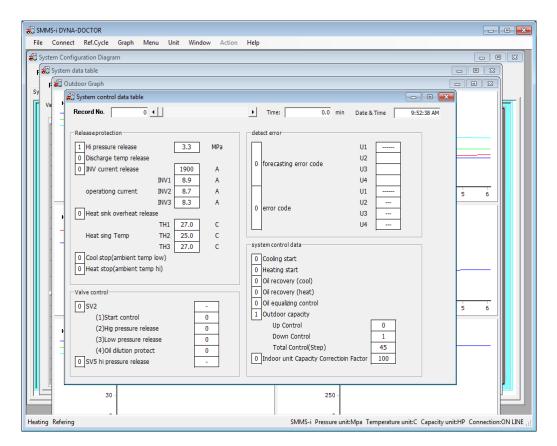


Figure 4.8.5

4.8.3. Displaying a specific window at the front

To display a specific window at the front, select the appropriate window from the [Window] menu. The selected window is displayed at the front.

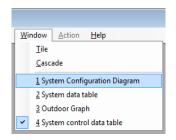


Figure 4.8.6

	SMMS-i DYNA-DOCTOR											
10	ystem Configuration Di			<u></u>	2	-						- • •
R	ecord No.	1		•	Time:	0.0	min Date	& Time	9:52:38 AM			
Sys	tem Configuration Diagrar	m (Communication	n) System Cor	nfiguration Diagr	am (Refrigeratio	n Cycle)   Refri	geration Cycle D	)iagram (System	Data)			1
		<u>ر</u>		"K		······						
	Starting priority  Outdoor type	Header	1	Follower1		ollower2 2	1					
		Comp1 Comp		Comp1 Comp2	2_Comp3	Comp1 Comp2						
	Comp condigion	50.9 49	.1 47.3	0.0 52.9	51.1	60.9 64.5						
	TOSHIBA	Indoor unit	Conne	ct 12 Cooli	ng Ope. 🛛 0	Heating Ope.	9 Fan Op	e. 0	Line ad	dress 5		
	Center Control	1	2	3	4	5	6	7	8	9	10	
	BMS Connect	H-Duct 8.0 Thermo OFF	C-Duct 5.0 Heat ON	2-way 1.7 Heat ON	2-way 4.0 Heat ON	4-way 1.7 Heat ON	2-way 4.0 Thermo OFF	4-way 3.0 Thermo OFF	4-way 3.0 Heat ON	4-way 2.0 Heat ON	2-way 4.0 Heat ON	10
		2-way 6.0 Heat ON	2-way 1.7 Heat ON									20
												30
												40
	Normal Fresh DX COIL Unit											
Ľ								_				
Heati	ng Refering					S	MMS-i Pressu	re unit:Mpa T	emperature u	nit:C Capacity	unit:HP Con	nection:ON LINE

Figure 4.8.7

- 5. Refrigerant cycle diagrams
- 5.1. Displaying a system configuration diagram (communication)

A system configuration diagram for the air conditioner currently connected or being browsed can be displayed. To display a system configuration diagram, select [System Diag] from the [Ref. Cycle] menu.

DOCTOR									
<u>R</u> ef.Cycle	<u>G</u> raph	<u>M</u> enu	<u>U</u> nit	Wi					
<u>S</u> ystem Diag									
<u>R</u> ef.Cycle Diag System Data									
<u>L</u> ist Data - System Data									
1									

Figure 5.1.1

A wait screen is displayed while data is loading. The system configuration diagram is displayed when data has finished loading.

The system configuration diagram can be used to check the indoor/outdoor unit connection or operation status.

System Configuration D	iagram									-	_ 0
Record No.	0 •		•	Time:	0.0	min Date a	& Time	9:52:38 AM			
System Configuration Diagra	m (Communicatio	n) System Cor	nfiguration Diag	ram (Refrigerati	on Cycle)   Refri	geration Cycle D	)iagram (System	Data)			
Starting priority	Header	) T	Follower1	3	Follower2						
Outdoor type	Header		14.0		12.0						
	Comp1 Comp			2 Comp3	Comp1 Comp2						
Comp condigion 🕨	50.9 49	.1 47.3	0.0 52.9	9 51.1	60.9 64.5						
	$\neg$ $\sim$		\								
Center Control	Indoor unit	Conne	ct 12 Coo	ling Ope. 0	Heating Ope.	9 Fan Op	e. 0	Line a	ddress 5		
Connect	1	2	3	4	5	6	7	8	9	10	_
BMS Connect	H-Duct 8.0	C-Duct 5.0	2-way 1.7	2-way 4.0	4-way 1.7	2-way 4.0	4-way 3.0	4-way 3.0	4-way 2.0	2-way 4.0	10
	Thermo OFF	Heat ON	Heat ON	Heat ON	Heat ON	Thermo OFF	Thermo OFF	Heat ON	Heat ON	Heat ON	_
	2-way 6.0	2-way 1.7									20
	Heat ON	Heat ON		<u> </u>				<u> </u>			_
											30
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	L	<u> </u>			_
											40
			<u> </u>	<u> </u>	<u> </u>			<u> </u>			_
Normal				1							
DX COIL Unit											

Figure 5.1.2

5.2. Displaying a system configuration diagram (refrigerant cycle)

The refrigerant cycle for the air conditioner currently connected or being browsed can be displayed. Refer to <u>Displaying a system configuration diagram (communication)</u> or <u>Displaying a refrigerant cycle diagram</u> (system data) for information on displaying the refrigerant cycle window.

Click the [System Configuration Diagram (Refrigeration Cycle)] tab in the system configuration diagram window to display a refrigerant cycle diagram for the whole system.

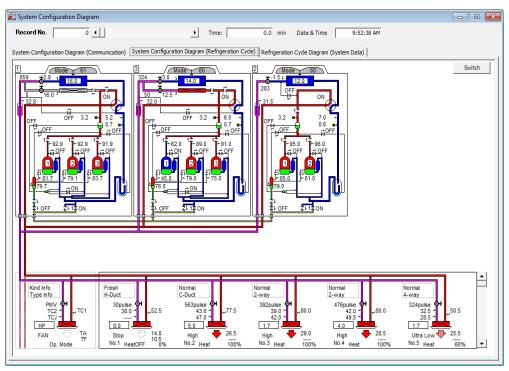


Figure 5.2.1

Click the [Switch] button to switch between displaying the refrigerant cycle diagram data item and the actual data. Move the [Indoor unit] scroll bar to change the indoor units being displayed (five units at a time).



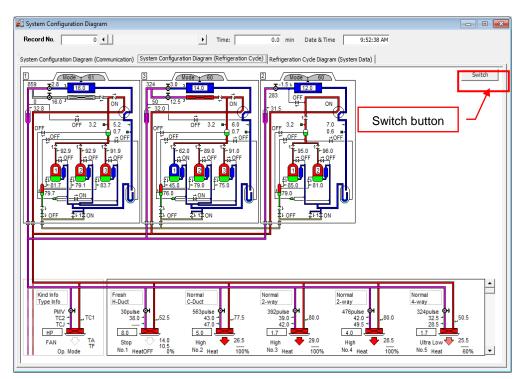


Figure 5.2.2

5.3. Displaying a refrigerant cycle diagram (system data)

A refrigerant cycle diagram for each air conditioner currently connected or being browsed can be displayed. To display the refrigerant cycle diagram screen, select [Ref. Cycle Diag. - System Data] from the [Ref. Cycle] menu.

DOCTOR	1								
Ref.Cycle	Graph	Menu	Unit	Wi					
System Diag									
Ref.Cycle Diag System Data									
List Data - System Data									

Figure 5.3.1

A wait screen is displayed while data is loading. The system configuration diagram is displayed when data has finished loading.

The refrigerant cycle for each indoor/outdoor unit can be checked individually on the refrigerant cycle diagram screen.

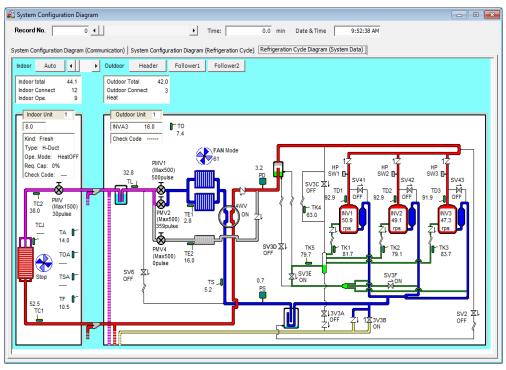


Figure 5.3.2

Click the [Switch] button to change the display mode. The display modes are [Automatic] and [Fixed]. In [Automatic] mode the indoor unit changes once a second. In [Fixed] mode the unit being viewed can be changed using the [Indoor unit] scroll bar.

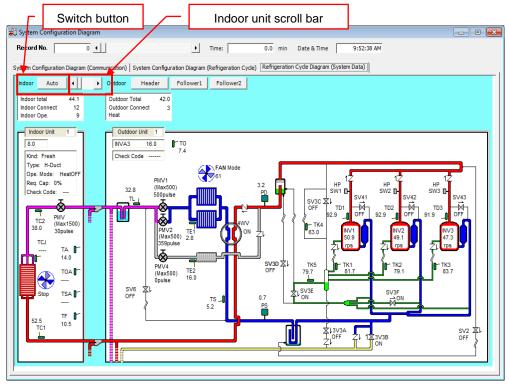


Figure 5.3.3

The outdoor unit being displayed can also be changed. Click the [Header], [Follower 1], and [Follower 2] buttons to choose an outdoor unit to be displayed.

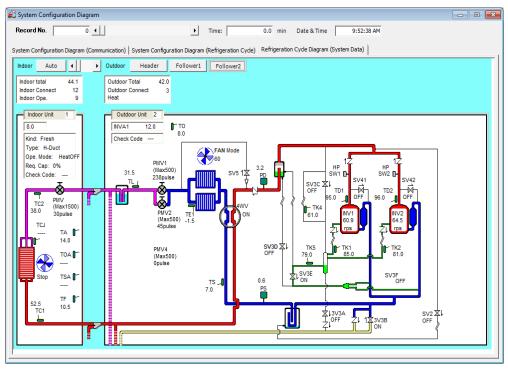


Figure 5.3.4

5.4. Displaying list data/system data

A list of system data can be displayed. To open the system data table window, select [List Data - System Data] from the [Ref. Cycle] menu.

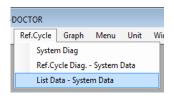


Figure 5.4.1

A wait screen is displayed while data is loading. The system data table window is displayed when data has finished loading.

The system data table window can be used to check the status of outdoor/indoor units in a table format.

þ 🔹			► Tim	ne: [		0.0	min	Date	& Time	9	:52:3	8 AM	
			_	,						,			
				_		r				_			-
			Follower3	-			HP				Â	Line Address	5 🤺
							8.0						R410A
-					-							-	100%
												· · ·	100%
				- 1	-								•
				- 1									•
					Ľ								•
					-							Heating Start	
					Ľ –								
					-								•
					-							Oil Equalizing Control	•
92.9	89.0	96.0										-	
91.9	91.0				11								100%
2.8	3.0	-1.5			12	61	1.7	Heat	80%	374		Control	•
16.0	12.5			•								Snowfall Fan Control	•
859	324	283											
0	50	0											
OFF	OFF	OFF											
OFF	OFF	OFF											
OFF	OFF	OFF									-		
ON	ON	ON									_	Stop Koop Timor	0
OFF	OFF	OFF						_			- 1	· ·	02:11:15
OFF	OFF	OFF			Total C	Cap.	53	5% To	tal Conne	ct	12	On une From start	02.11:15
	Header 16.0 1 50.9 49.1 47.3 61 ON 3.2 0.7 92.9 92.9 91.9 2.8 16.0 859 0 OFF OFF OFF ONF	Header         Follower1           16.0         14.0           1         3           50.9         0.0           447.3         51.1           61         60           ON         ON           3.2         3.2           0.7         0.7           92.9         62.0           92.9         89.0           91.9         91.0           2.8         3.0           16.0         12.5           859         324           0         50           OFF         OFF           OFF         OFF	Header         Follower1         Follower2           16.0         14.0         12.0           1         3         2           50.9         0.0         60.9           49.1         52.9         64.5           47.3         51.1            61         60         60           0N         0N         0N           3.2         3.2         3.2           0.7         60.6         92.9           92.9         62.0         95.0           92.9         89.0         96.0           91.9         91.0            2.8         3.0         -1.5           16.0         12.5            859         324         283           0         50         0           0FF         0FF         0FF           0FF         0FF         0FF           0FF         0FF         0FF           0FF         0FF         0FF           0FF         0FF         0FF	Header         Follower1         Follower2         Follower3           16.0         14.0         12.0           1         3         2           50.9         0.0         60.9           49.1         52.9         64.5           47.3         51.0         1           61         60         60           0N         0N         0N           3.2         3.2         3.2           0.7         0.7         0.6           92.9         62.0         95.0           92.9         83.0         96.0           91.9         91.0            2.8         3.0         -1.5           16.0         12.5            15.0         12.5            16.0         50         0           0         50         0      0.0FF         0FF         0FF           0FF         0FF         0FF      0FF         0FF <td>Header         Follower1         Follower2         Follower3         ▲           16.0         14.0         12.0         ▲</td> <td>Header         Follower1         Follower2         Follower3         Indoo           16.0         14.0         12.0         Adr           15.0         14.0         12.0         1           1         3         2         1           50.9         0.0         60.9         1           47.1         52.9         64.5         1           47.3         52.1         6.6         6           0         0N         0N         0           3.2         3.2         3.2         3.2           92.9         62.0         95.0         9           92.9         89.0         96.0         9           91.9         91.0          -           16.0         12.5          -           16.0         12.5          -           16.0         12.5          -           859         324         283         -           0         50         0         -           0FF         0FF         0FF         -           0FF         0FF         0FF         -           0FF         0FF</td> <td>Header         Follower1         Follower2         Follower3         Adr         No.           16.0         14.0         12.0         Adr         No.         Cycle         NET           1         3         2         1         51.1         S1.1         S1.2         S2.4         S3.5         S3.5         S3.5         S3.5         S3.5         S4.6         S5.9         S2.9         S6.0         S5.9         S5.9         S5.9         S5.9         S5.9         S5.6         S5.5         S5.5         S5.4         S5.5         S5.4         S5.5         S5.4         S5.9         S5.9</td> <td>Header         Follower1         Follower2         Follower3         Indoor           16.0         14.0         12.0         Adr         No.         P           1         3         2         1         So.9         0.0         60.9         So.9         So.9</td> <td>Header         Follower1         Follower2         Follower3         ▲           16.0         14.0         12.0         ▲         Adr         No.         Mode           1         3         2         ▲         1         \$16.0         1.0         1.2.0         ▲         1         \$1         8.0         Heat           1         3         2         ▲         1         \$1         8.0         Heat           40.1         52.9         64.5         ↓         ↓         \$3         \$1.7         Heat           47.3         51.1         60         60         ↓</td> <td>Header         Follower1         Follower2         Follower3         Indoor           16.0         14.0         12.0         Adr         Mode         Req           1         3         2         1         S1         8.0         Heat         0%           40.1         52.9         64.5         49         53         1.7         Heat         100%           47.3         51.1        </td> <td>Header         Follower1         Follower2         Follower3           16.0         14.0         12.0           1         3         2           50.9         0.0         60.9           49.1         52.9         64.5           51.1          1           61         60         60           61         60         60           0.7         0.7         0.6           0.7         0.7         0.6           92.9         89.0         96.0           92.9         89.0         96.0           91.9         91.0            859         324         283           0         50         0           0FF         0FF         0FF           0FF         0FF         0FF           0FF         0FF         0FF           0FF         0FF         0FF           0FF         0FF         0FF</td> <td>Header         Follower1         Follower2         Follower3         Adr         No.         HP         Ope.         Cap.         PMV         Adr         No.         &lt;</td> <td>Header         Follower1         Follower2         Follower3         Adr         No.         HP         Ope.         Cap.         PMV         Cap.         Ine Address           1         3         2         1         51         8.0         Heat         0%         30         2         52         5.0         Heat         0%         30         2         52         5.0         Heat         100%         563         3         53         1.7         Heat         10%         30         2         55         4.0         Heat         10%         30         2         55         56         4.0         Heat         10%         30         2         59         2.0         Heat         10%         50         10         10</td>	Header         Follower1         Follower2         Follower3         ▲           16.0         14.0         12.0         ▲	Header         Follower1         Follower2         Follower3         Indoo           16.0         14.0         12.0         Adr           15.0         14.0         12.0         1           1         3         2         1           50.9         0.0         60.9         1           47.1         52.9         64.5         1           47.3         52.1         6.6         6           0         0N         0N         0           3.2         3.2         3.2         3.2           92.9         62.0         95.0         9           92.9         89.0         96.0         9           91.9         91.0          -           16.0         12.5          -           16.0         12.5          -           16.0         12.5          -           859         324         283         -           0         50         0         -           0FF         0FF         0FF         -           0FF         0FF         0FF         -           0FF         0FF	Header         Follower1         Follower2         Follower3         Adr         No.           16.0         14.0         12.0         Adr         No.         Cycle         NET           1         3         2         1         51.1         S1.1         S1.2         S2.4         S3.5         S3.5         S3.5         S3.5         S3.5         S4.6         S5.9         S2.9         S6.0         S5.9         S5.9         S5.9         S5.9         S5.9         S5.6         S5.5         S5.5         S5.4         S5.5         S5.4         S5.5         S5.4         S5.9         S5.9	Header         Follower1         Follower2         Follower3         Indoor           16.0         14.0         12.0         Adr         No.         P           1         3         2         1         So.9         0.0         60.9         So.9         So.9	Header         Follower1         Follower2         Follower3         ▲           16.0         14.0         12.0         ▲         Adr         No.         Mode           1         3         2         ▲         1         \$16.0         1.0         1.2.0         ▲         1         \$1         8.0         Heat           1         3         2         ▲         1         \$1         8.0         Heat           40.1         52.9         64.5         ↓         ↓         \$3         \$1.7         Heat           47.3         51.1         60         60         ↓	Header         Follower1         Follower2         Follower3         Indoor           16.0         14.0         12.0         Adr         Mode         Req           1         3         2         1         S1         8.0         Heat         0%           40.1         52.9         64.5         49         53         1.7         Heat         100%           47.3         51.1	Header         Follower1         Follower2         Follower3           16.0         14.0         12.0           1         3         2           50.9         0.0         60.9           49.1         52.9         64.5           51.1          1           61         60         60           61         60         60           0.7         0.7         0.6           0.7         0.7         0.6           92.9         89.0         96.0           92.9         89.0         96.0           91.9         91.0            859         324         283           0         50         0           0FF         0FF         0FF           0FF         0FF         0FF           0FF         0FF         0FF           0FF         0FF         0FF           0FF         0FF         0FF	Header         Follower1         Follower2         Follower3         Adr         No.         HP         Ope.         Cap.         PMV         Adr         No.         <	Header         Follower1         Follower2         Follower3         Adr         No.         HP         Ope.         Cap.         PMV         Cap.         Ine Address           1         3         2         1         51         8.0         Heat         0%         30         2         52         5.0         Heat         0%         30         2         52         5.0         Heat         100%         563         3         53         1.7         Heat         10%         30         2         55         4.0         Heat         10%         30         2         55         56         4.0         Heat         10%         30         2         59         2.0         Heat         10%         50         10         10

Figure 5.4.2

Click [View 1] or [View 2] to switch between the data being displayed.

Duttoor Unit HP Starting Provity Comp(1) Hz Comp(2) Hz Comp(2) Hz Duttoor Unit PanMode	ader 16.0 1 50.9 49.1 47.3	Folower1 14.0 3 0.0 52.9	Follower2 12.0 2 60.9	Follower3	-	Index	No.					_	System Data	
Hes Dutdoor Unit HP Starting Pronty Comp(1) He Comp(2) He Comp(2) He Outdoor Unit FamMode	15.0 1 30.9 49.1 47.3	14.0 3 0.0	12.0 2	Follower3	•	Adr						-	System Data	
Outdoor Unit HP Starting Pronity Comp(1) Hz Comp(2) Hz Comp(2) Hz Outdoor Unit PanMode	15.0 1 30.9 49.1 47.3	14.0 3 0.0	12.0 2	Follower3	-									
Starting Provity Comp(1) Hz Comp(2) Hz Comp(3) Hz Outdoor Unit FanMode	1 50.9 49.1 47.3	3 0.0	2					HP	Ope.	Cap.	PHV	(-1)	Line Address	. 5
Comp(1) Hz Comp(2) Hz Comp(3) Hz Outdoor Unit FanMode	\$0.9 49.1 47.3	0.0				Cyde	NET		Mode	Req	Open			
Comp(2) Hz Comp(3) Hz Outdoor Unit FarMode	49.1 47.3		65.9			1	51	8.0	Heat	016	20		Refrigerant	R410A
Comp(3) Hz Outdoor Unit FanMode	47.3	\$2.9				2	52	5.0	Heat	100%	563		Capacity Control	100%
Outdoor Unit FarMode			64.5			3	53	1.7	Heat		592		Of Recovery(Cool)	
		\$1.1				4	55	4.0	Heat		476		Oi Recovery(Heat)	
	61	60	60			5	\$4	1.7	Heat	60%	324		Cooling Start	•
Away Valve	-ON	ON	ON			6	56	4.0	Heat	0%	30		Heating Start	
Pd:High Pressure	3.2	3.2	3.2			7	57	3.0	Heal		30			
Pst.ow Pressure	0.7	0.7	0.6			8	58	3.0	Heat	200%	479		Defrost	*
TD1:Discharge Temp	92.9	62.0	95.0			9	59	2.0	Heat	50%	299		OI Equalizing Control	
TD2:Discharge Temp	92.9	89.0	96.0			10	60	4.0	Heat		462			
TD3:Discharge Temp	91.9	91.0	*****			11	61	6.0	Heat	60%	459		Demand	100%
TE:Heat Exchanger Temp	2.8	3.0	-1.5			12	61	1.7	Heat	80%	374		Sound Reduction Control	•
TE2:Heat Exchanger Temp2	16.0	12.5	-		•								Snowfall Fan Control	
PMV1+2	859	324	283		٠									
PMV4	0	50	0											
9V2	OFF	OFF	OFF											-
svs	OFF	OFF	OFF										-	
SV3A:OI Supply	OFF	OFF	OFF		-							-1		
SV38:OI Return	ON	ON	ON			Index	rTotal H		1	stal One.		9	Stop Keep Timer	
SV3C:Gas Pressure	OFF	OF#	OFF			Total				otal Upe. Istal Conne	-	12	a second second second	02:11:11
SV3D:Separator Open	OFF	OFF	OFF		-1	1008	uap.	- 23	74 11	ous conne	ct .	-	an and the start	

Figure 5.4.3

Recor	d No.	-	0	•			•	Time:		0	0 min	Dat	e & Tim	-	9:52	38.AM	
ev1	Ven2	1															
Indo	or																
Adr Cycle	No. NET	Kind	Type	HP	Ope. Mode	Requirement Capacity	Fan Mode	PMV	TC1	TC2	TCJ	R. TA	oom tem TOA	TSA	47	Indoor unit error code	
1	\$1	Fresh	H-Duct	8.0	Heat	0%	Stop	30	52.5	38.0		14.0			10.5	-	
2	52	Normal	C-Duct	5.0	Heat	100%	High	563	77.5	43.0	47.0	36.5	-	-			
3	\$3	Normal	2-way	1.7	Heat	100%	High	592	80.0	39.0	42.0	29.0	-				
4	55	Normal	2-way	4.0	Heat	100%	High	4%	90.0	42.0	49.5	28.5				-	
5	54	Normal	4-aby	1.7	Heat	60%	Ubstow	324	50.5	32.5	29.5	25.5				-	
6	56	Normal	2-way	4.0	Heat	0%	Stop	. 30	52.5	40.5	43.0	27.5	-	****			
7	57	Normal	4way	3.0	Heat	0%	Stop	30	47.0	37.0	-12.0	28.5	100				
8	58	Normal	4 may	3.0	Heat	100%	High	429	80.0	39.5	40.0	31.5				÷.	
9	59	Normal	41107	2.0	Heat	50%	Med	299	77.0	33.5	32.5	29.0					
10	60	Normal	2-way	4.0	Heat	200%	High	462	78.5	38.0	46.0	27.0	-				
11	61	Normal	2-way	6.0	Heat	60%	High	459	78.5	40.5	-49.0	28.0	1000				
12	-61	Normal	2-way	1.7	Heat	80%	High	374	75.5	32.0	34.0	26.5		****			
Outd	- C.																
	gh Pres		3.		High Pressu	e \$3.0	TO:Ou Temp	Idoor Air		7.4		covery				ip Keep Timer	Osec
Palo	w Press	sire	0.		Low Pressur	e 4.5	1.00		1	0	OI RA	covery	Heat)		On	time From start	02:11:15

Figure 5.4.4

## 6. Displaying graphs

Data can be displayed in graph form. Graphs can be displayed when browsing data files.

### 6.1. Displaying outdoor unit graphs

Outdoor unit data can be displayed in graph form. To open the outdoor unit graph item selection window, select [Outdoor Unit - System Data] from the [Graph] menu.

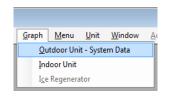


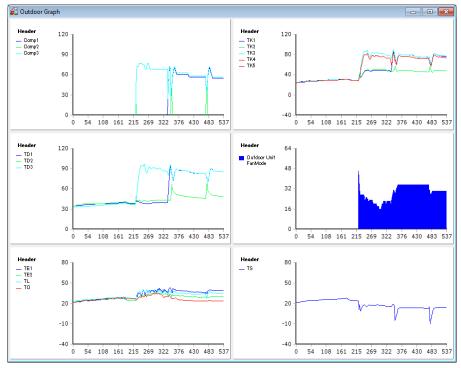
Figure 6.1.1

The items to be displayed on the graph can be chosen in the outdoor unit graph item selection window. A maximum of 6 items can be displayed on the graphs.

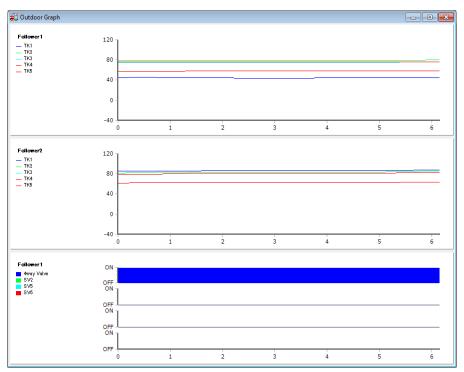
heck	Header unit	Check	Follower 1 unit	Check	Follower 2 unit	Check	Follower 3 unit
	Comp Hz		Comp Hz		Comp Hz	Г	Comp Hz
	Pressure sensor		Pressure sensor		Pressure sensor		Pressure sensor
	Td sensor		Td sensor		Td sensor		Td sensor
	TE1/TE2/TL/TO sensor		TE1/TE2/TL/TO sensor		TE1/TE2/TL/TO sensor		TE1/TE2/TL/TO sensor
	Ts sensor		Ts sensor		Ts sensor		Ts sensor
	PMV1/2 open ratio		PMV1/2 open ratio		PMV1/2 open ratio		PMV1/2 open ratio
	PMV4 open ratio		PMV4 open ratio		PMV4 open ratio		PMV4 open ratio
	4W-Valve/SV2/SV5/SV6		4W-Valve/SV2/SV5/SV6		4W-Valve/SV2/SV5/SV6		4W-Valve/SV2/SV5/SV6
	TK1,2,3,4,5		TK1,2,3,4,5		TK1,2,3,4,5		TK1,2,3,4,5
	Outdoor Fan mode		Outdoor Fan mode		Outdoor Fan mode		Outdoor Fan mode
	Indoor signal				1		· · · · ·
	, , ,						

Figure 6.1.2

Select the desired item and click the [OK] button to display a graph. When the [OK] button is clicked, a wait screen is displayed while graphs are rendered. When graphs are rendered the graph display window opens.







#### Figure 6.1.4

6.2. Displaying indoor unit graphs

Indoor unit data can be displayed in graph form. To open the indoor unit graph item selection window, select [Indoor Unit] from the [Graph] menu.

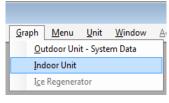


Figure 6.2.1

The items to be displayed on the graph can be selected in the indoor unit graph item selection window. A maximum of 20 indoor units can be selected. [Cycle Data] and [Control Data] can be selected when 1 unit is chosen. [Indoor Comparison Data] can be selected when 1 or more units are chosen. [Cycle Data]/[Control Data] and [Indoor Comparison Data] cannot be selected at the same time.

🕄 Indoo	or Un	it Data/Gra	ph ( Selection )				x
Check	No	Indoor HP	Fresh Air	<b>A</b>	Check	Graph Contents	^
	1	8.0	Normal			Cycle Data	
	2	5.0	Fresh			(1) PMV Opening	
	3	1.7	Fresh			(2) TA / TF / TC1 / TC2 / TCJ	
	4	4.0	Fresh			Temperature	
	5	1.7	Fresh			(3) Outdoor unit pressure saturation temperature	
	6	4.0	Normal			sacuración cemperacure	
<u>ব</u>	7	3.0	Normal			Control Data	
4	8 9	3.0 2.0	Fresh Fresh			(1) Capacity Requirement	
<b>V</b>	9 10	2.0	Fresh			(2) Operation Mode	
4	11	6.0	Fresh			(3) Indoor Fan	
4	12	1.7	Fresh			Indoor Comparison Data (1)	
	12	1.7	Tream			<pmv opening,="" status=""></pmv>	
						Indoor Comparison Data (2) <suction relative<br="" temperature,="">ability&gt;</suction>	
				Ψ.			<b>-</b>
9	Select	All	Reset All			<u>O</u> K <u>C</u> ancel	

Figure 6.2.2

6.2.1. Displaying individual indoor unit graphs

To display graphs for individual indoor units, select 1 indoor unit and cycle data/control data. Then click [OK]. When the [OK] button is clicked, the wait screen is displayed while graphs are rendered. When graphs are rendered the graph display window opens.

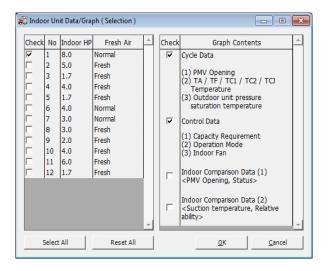


Figure 6.2.3

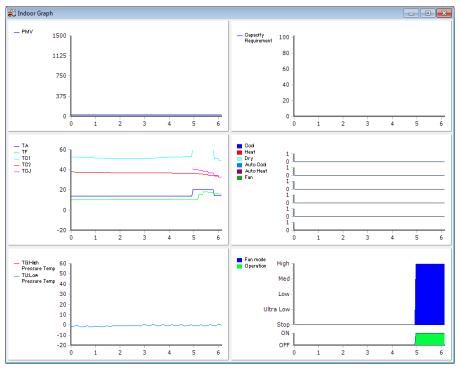


Figure 6.2.4

6.2.2. Displaying [PMV Opening, Status] comparison graphs for indoor units

To display [PMV Opening, Status] comparison graphs for indoor units, select 1 or more indoor units and [PMV Opening, Status]. Then click [OK]. When the [OK] button is clicked, the wait screen is displayed while graphs are rendered. When graphs are rendered the graph display window opens.

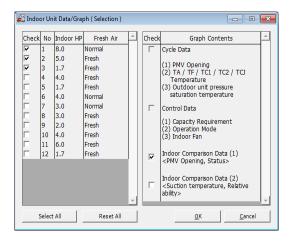


Figure 6.2.5

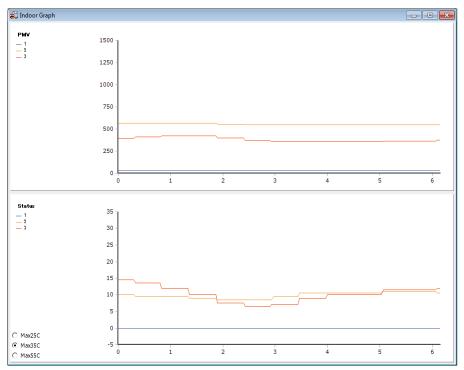


Figure 6.2.6

6.2.3. Displaying [Suction Temperature, Relative Ability] comparison graphs for indoor units To display [Suction Temperature, Relative Ability] comparison graphs for indoor units, select 1 or more indoor units and [Suction Temperature, Relative Ability]. Then click [OK]. When the [OK] button is clicked, the wait screen is displayed while graphs are rendered. When graphs are rendered the graph display window opens.

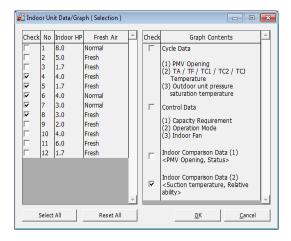


Figure 6.2.7

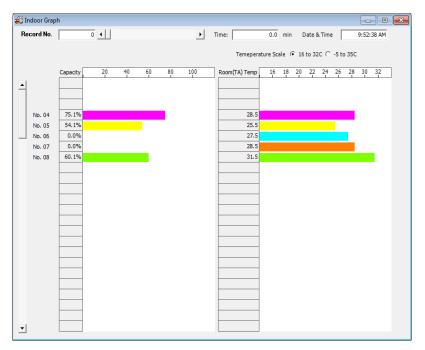


Figure 6.2.8

Historical data can be used for [Suction Temperature, Relative Ability] comparison graphs. Refer to Browsing saved data for more information about using historical data.

Move the scroll bar to change the indoor unit display. The temperature scale can also be changed.

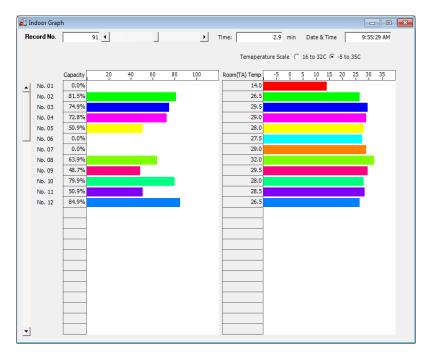


Figure 6.2.9

- 7. Other functions
- 7.1. Checking the list of check codes

Select [List Check Codes] from the [Menu] menu. The list of check codes window opens.

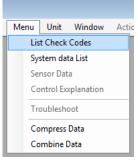


Figure 7.1.1

Choose a check code to display detailed information about it.

Check code	Detecting	Operating Element			Detailed Information	
E01	Remote contro	Communication error between indoor and remo		Check Code	E01	
E02	Remote contro	Sending error of remote controller		Operating	Communication error between indoor and remote	
E03	Indoor	Communication error between indoor and remo		Element	controller(Detected at remote controller side)	
E04	Indoor	Indoor/outdoor communication circuit error (De	_		o	-
E06	I/F	Decrease of indoor units			Communication interrupted between indoor P.C. board and remote controller	^
E07	I/F	Indoor/outdoor communication circuit error (De		Determining		
E08	Indoor I/F	Duplicated indoor addresses		Method		
E09	Remote contro	Duplicated main remote controllers				-
E10	2Indoor	Communication error between indoor MCU			Check remote controller inter-unit cable (A/B)	
E12-**	I/F	Automatic address start error			Check disconnection, connector contact error.	
E15	I/F	No indoor during automatic address			Check indoor power supply. Check indoor P.C. board error.	
E16-**	I/F	No. of connected indoor units / Capacity over			Check remote controller address setup. (When	
E18	Indoor	Communication error between indoor header ar			two remote controllers operate) Check remote controller P.C. board	
E19-**	I/F	Outdoor header unit quantity error		Check	Check remote controller P.C. board	
E20-**	I/F	Connection of other line during automatic addre		Contents		
E23	I/F	Communication sending error between outdoor				
E25	I/F	Duplicated outdoor follower address setup				
E26	I/F	Decrease of No. of connected outdoor units				
E28	I/F	Outdoor follower unit error				
E31-**	I/F	IPDU communication error	-			-

Figure 7.1.2

7.2. Displaying a system control data table

Select [System data list] from the [Menu] menu. The system control data table window opens.

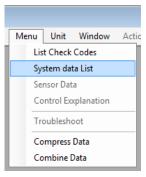


Figure 7.2.1

In the system control data table window, system control status information being received or browsed can be checked in table format.

😴 System control data table	
Record No. 0	Time: 0.0 min Date & Time 9:52:38 AM
Release protection       1     Hi pressure release     3.3     MPa       0     Discharge temp release     1900     A       0     INV current release     1900     A       0     INV1     8.9     A       0     INV2     8.7     A       INV3     8.3     A       0     Heat sink overheat release	detect error         U1            0         forecasting error code         U2            U4          U4            0         error code         U2            0         error code         U3            U4          U2            U1          U2            U4          U2            U4          U2            U4          U4            U4          U4
Heat sing Temp TH2 25.0 C TH3 27.0 C Cool stop(ambient temp low) 0 Heat stop(ambient temp hi)	System control data           0         Cooling start           0         Heating start
Valve control  SV2  (1)Start control  (2)Hig pressure release  (3)Low pressure release  (4)Oil dilution protect  SV5 hi pressure release  -	0     Oil recovery (cool)       0     Oil recovery (heat)       0     Oil equalizing control       1     Outdoor capacity       Up Control     0       Down Control     1       Total Control(Step)     45       0     Indoor unit Capacity Correction Factor

Figure 7.2.2

### 7.3. Changing the displayed pressure data unit

The unit used to display pressure data can be changed. To change the unit, select [Pressure unit] from the [Unit] menu, and choose the desired unit.

<u>U</u> nit	Window	<u>A</u> ction	<u>H</u> elp	
Pressure Unit		~	M <u>P</u> a	
Temperature Unit			<u>kg</u> /cm2G	
<u>C</u> apacity Unit ▶				P <u>s</u> i

Figure 7.3.1

When the unit is changed, the displayed pressure data is displayed using the selected unit.

7.4. Changing the displayed temperature data unit

The unit used to display temperature data can be changed. To change the unit, select [Temperature unit] from the [Unit] menu, and choose the desired unit.

Unit Window Action	<u>H</u> e	lp
		-F
Pressure Unit		
Temperature Unit	~	<u>C</u> elsius
Capacity Unit		<u>F</u> ahrenheit

Figure 7.4.1

When the unit is changed, the displayed temperature data is displayed using the selected unit.

7.5. Displaying tips

The system tips display can be turned on or off. Select [Tips] from the [Help] menu to turn it on or off.

H	elp
	Function
~	Tips
	Version

Figure 7.5.1

When Tips are turned on, system operation information is displayed in the status bar.



Figure 7.5.2

#### 7.6. Compressing data

Select [Compress Data] from the [Menu] menu. The compress data window opens.

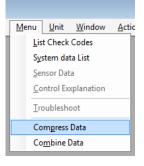
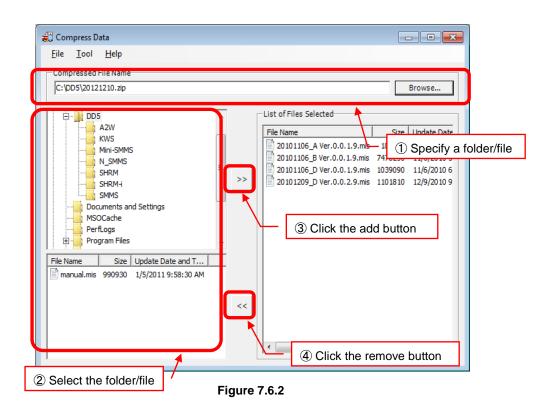


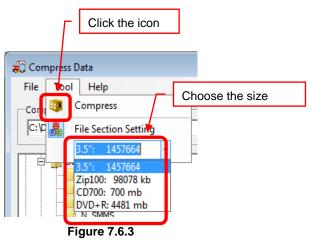
Figure 7.6.1

Use the following procedure to compress data:

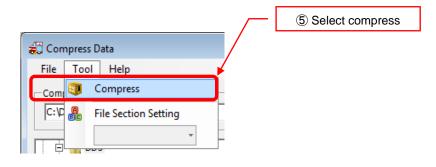
- ① Specify a folder in which to store the compressed data and a file name.
- ② Select the folder or file which the data to be compressed is saved in.
- ③ Select the files to be compressed and click the [>>] button or drag and drop them to add them.
- To remove selected files, select the file to be removed and click the [<<] button or drag and drop it to remove it.



To split and save compressed files, click the file section setting menu and choose the size.



⑤ Select [Compress] from the [Tool] menu on the menu bar to perform compression.





7.7. Combining data

Select [Combine Data] from the [Menu] menu. The combine data window opens.

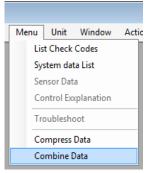


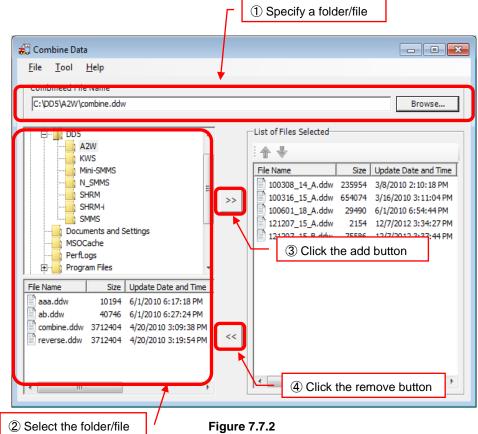
Figure 7.7.1

Data split and saved using DynaDoctor can be combined into one consecutive file.

Use the following procedure to combine data:

① Specify the folder and file name for the combined data file.

- 2 Select the folder or file which the data to be combined is saved in.
- ③ Select the files to be combined and click the [>>] button or drag and drop them to add them.
- ④ To remove selected files, select the file to be removed and click the [<<] button or drag and drop it to remove it.</p>



(5) Click the combine button on the tool bar, or select [Combine] from the [Tool] menu on the menu bar to combine the data.

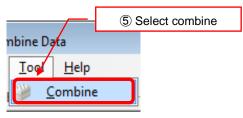


Figure 7.7.3

### 8. ON/OFF Control

Operation status and settings can be changed by sending a command to indoor units. ON/OFF control can be used when communicating with the outdoor unit.

#### 8.1. Executing indoor unit test runs

Operation status and settings can be changed by sending a command to indoor units. To open the ON/OFF controller window, select [ON/OFF control] from the [Action] menu.

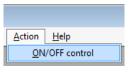


Figure 8.1.1

When the ON/OFF window opens, controls for operating the connected indoor units are displayed. Unconnected indoor unit controls cannot be operated.

			F control												1					
Co	oling		Heating		Fa	in	M	ode sto	re	Mode re	e-store		Oper	ation		Stop		Test op	eration	
o. 1 I	Net 51	No. 2	Net 52	No. 3	Net 53	No. 4	Net 55	No. 5	Net 54	No. 6	Net 56	No. 7	Net 57	No. 8	Net 58	No. 9	Net 59	No. 10	Net 60	
8.0/ Therm	Stop 10 OFF		)/High at ON		/High at ON		/High at ON		7/High at ON		/Stop no OFF		/Stop no OFF		/High at ON		/Med at ON		)/High at ON	
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	
ON	15	ON	15 .	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	
o. 11	Net 61	No. 12	Net 61	No. 13	Net 🕅	No. 14	Net 📃	No. 15	Net 🗌	No. 16	Net 📃	No. 17	Net 📃	No. 18	Net 📃	No. 19	Net 🗌	No. 20	Net	
6.0/ Hea	High t ON		7/High at ON																	
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	
ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	
o. 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	
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	
ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	1

Figure 8.1.2

8.1.1. Changing the operation mode for all units

The mode for all indoor units can be changed simultaneously. The mode for all units can be simultaneously changed to 3 different modes - [Cooling], [Heating] and [Fan].

Click the [Cooling], [Heating] and [Fan] buttons to send a mode change command to all indoor units and change the operating mode.

i	😴 Test (	operation		F control		ange	mod	e for a	all ur	nits bu	utton	s (Co	oling	, Heat	ting a	and F	an)				<b>×</b>
	C	Cooling		Heating	,	F	an	м	ode sto	re	Mode re	e-store		Oper	ation		Stop		Test op	eration	
	8.0	Net 51 D/Stop mo OFF	5.0	Net 52 )/High at ON	1.3	Net 53 7/High at ON	4.0	Net 55 /High at ON	1.7	Net 54 7/High at ON	4.0	Net 56 //Stop mo OFF	3.0	Net 57 /Stop no OFF	3.0	Net 58 /High at ON	2.0	Net 59 D/Med at ON	4.0	Net 60 )/High at ON	Î
Cha	ange	opera	tion	status	s for	all un	its bu	uttons	(Op	erate	, Sto	o and	Test	opera	ation	) R	SEL ON	AIR 15	SEL ON	AIR	
	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	E
		Net 61			No. 13	Net	No. 14	Net 📃	No. 15	Net	No. 16	Net 🗌	No. 17	Net 📃	No. 18	Net 📃	No. 19	Net	No. 20	Net 📃	
		)/High at ON		/High at ON																	
	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	
	ON	15	ON	15	ON	15	ON	15	ON	15 🔆	ON	15	ON	15	ON	15	ON	15 📩	ON	15	U.
	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	
	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	
	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	
	ON	15 -	ON	15 🔆	ON	15	ON	15	ON	15 🔆	ON	15 :	ON	15	ON	15	ON	15 🔆	ON	15	
	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	-

Figure 8.1.3

All units can also be simultaneously switched to Operate, Stop and Test Operation. Click the [Operate], [Stop] and [Test Operation] buttons to send a operation status change command to all indoor units and change the operation status.

### 8.1.1. Changing operation mode for individual units

Operation mode for each indoor unit can be changed individually by operating each unit's controls. Click the select operation mode button (initially displayed as SEL) to switch between operation modes in the following order: [Cooling]  $\Rightarrow$  [Heating]  $\Rightarrow$  [Fan]. Click the [ON], [OFF] or [TEST] button to send a command to the relevant unit to change to the chosen operation mode or status.

No. 1	Net 51
	0/Stop mo OFF
SEL	AIR
ON	15 .
OFF	TEST

Figure 8.1.4

#### 8.2. Storing operation modes

Click the [Mode store] button to save the current indoor unit's operation mode. When the [Mode store] button is clicked, the current indoor unit operation mode is saved. However, saved operation data is erased if communication is halted.

									[		Мо	ode s	tore							
Test o	peration	ON/OF	F control	ler																
C	ooling		Heating		Fa	an	М	ode sto	re	Mode re	e-store		Oper	ration		Stop		Test op	eration	
lo. 1	Net 51	No. 2	Net 52	No. 3	Net 53	No. 4	Net 55	No. 5	Net 54	No. 6	Net 56	No. 7	Net 57	No. 8	Net 58	No. 9	Net 59	No. 10	Net 60	1
	/Stop no OFF		/High at ON		7/High at ON		)/High at ON		7/High at ON		)/Stop mo OFF		)/Stop mo OFF		0/High at ON		0/Med at ON		)/High at ON	
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	
ON	15 🔆	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15 📩	ON	15	ON	15	ON	15	
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	;
	Net 61	No. 12	Net 61	No. 13	Net	No. 14	Net	No. 15	Net	No. 16	Net 📃	No. 17	Net	No. 18	Net 📃	No. 19	Net	No. 20	Net	
	/High at ON		/High at ON																	
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	
ON	15	ON	15	ON	15 .	ON	15	ON	15	ON	15 .	ON	15	ON	15 .	ON	15	ON	15	Ĺ
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	
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	
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	
ON	15 .	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	Í
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	

Figure 8.2.1

#### 8.3. Restoring operation mode

Operation modes saved in <u>Storing operation modes</u> can be restored. Click the [Mode re-store] button to restore the operation mode. When the [Mode re-store] button is clicked, a command to change to the saved operation mode is sent to each unit.

												Γ		Μ	ode	re-st	tore		
Test o	operation	ON/OF	F control	ler								/							
с	ooling		Heating		F	an	М	ode sto	re	Mode re	e-store	1	Ope	ration		Stop		Test op	eration
No. 1	Net 51	No. 2	Net 52	No. 3	Net 53	No. 4	Net 55	No. 5	Net 54	No. 6	Net 56	No. 7	Net 57	No. 8	Net 58	No. 9	Net 59	No. 10	Net 60
	/Stop no OFF		l/High at ON		7/High at ON		)/High at ON		//High at ON		/Stop no OFF		)/Stop mo OFF		/High at ON		)/Med at ON		)/High at ON
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR
ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST
No. 11	Net 61	No. 12	Net 61	No. 13	Net	No. 14	Net	No. 15	Net	No. 16	Net 📃	No. 17	Net 📃	No. 18	Net 📃	No. 19	Net	No. 20	Net
	l/High at ON		/High at ON																
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR
ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15 :
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST
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 📃
SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR	SEL	AIR
ON	15 🔆	ON	15	ON	15 🔆	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15	ON	15
OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST	OFF	TEST

Figure 8.3.1

### 9. Creating test run reports

Data saved when communicating with outdoor units can be used to create test run reports. The created data can also be used to print out test run reports.

9.1. Opening the test operation report window

Click the [Report for Test Operation] button on the main menu screen.

💭 Welcome to SMMS-i DY	NA DOCTOR			<b>-</b>
TOSHIBA Carrier		License is fin	ished with auth	entication
DynaDoct	orV	Ver.	0.3.6.0	Cancel
SMMS-i su	uper modula	r multi syst	tem	
Outdoor Unit				_
MiNi-SMMS				
Report for	test operatio	n button	TOSHIBA	
SMMS-i	in man			
SHRM				- -
SHRM-i			Report for T operatio	
Copyri	⊐ ght (C) 2010-2012 Toshil	oa Carrier Corporation.	All Rights Res	erved.

Figure 9.1.1

The report type selection window opens. Choose the data for the relevant outdoor unit from the list. Click the [Start] button to open the report for test operation window.

💭 Report type selection 📃 💷 💌	
The type of the report is selected.	
MiNi-SMMS	
<u>C</u> ancel <u>S</u> tart	
Figure 9.1.2	
	Start button

	ation <u>R</u> efrigerant amou	nt calculation	Help							
	ect/Site		System			date		To		
Project/	Site data		Test result (Outdoor)	1		Test result (Inc	door)	1	Display Data attachment	
Project/Site						System name or No.		_		_
Customer						Date   Mo	nday , Decem_	▼ To	Monday , Decem 💌	
st result file File name									Search	
stomer data					Test F	Result				
Customer List	New customer da	ta		•	An	ew line is refrected in	a report directo	ory (Max. 1	11 lines)	
Customer					1 2					
Div ./Section					3 4					
Name					5					
E-mail					7 8					
Tel					9 10					
	Postcode			-	11					
Audress	Postcode	1		<sup>[</sup>	1					
	]				- Pr	(	proposal, pls ch		rite below.	
st person name Test Person List	New test person			•		write proposal, Test	result is Max. 5	lines)		_
	Inew test person			<u> </u>	1 2 3					
Company name					4					
Div ./Section					٠					
Name										
E-mail										
Tel		Fax								
Address	Post code									

Figure 9.1.3

### 9.2. Creating report data

Enter data into each field on the screen to create report data. The items which can be input are as follows:

#### Project/Site data

Item	Method	Note
Project/Site	Entered by user	Required
System name or No.	Entered by user	
Customer	Entered by user	
Date	Selected by user	
Test result file	Selected by user	Required
Customer	Entered/Selected by user	Required
		Existing data can be selected from the
		drop-down list
Div./Section (Customer data)	Entered by user	
Name (Customer data)	Entered by user	
E-mail (Customer data)	Entered by user	
Tel (Customer data)	Entered by user	
Address (Customer data)	Entered by user	
Company name	Entered/Selected by user	Required
		Existing data can be selected from the
		drop-down list
Div./Section (Test person name)	Entered by user	
Name (Test person name)	Entered by user	

Item	Method	Note
E-mail (Test person name)	Entered by user	
Tel (Test person name)	Entered by user	
Address (Test person name)	Entered by user	
Test result	Entered by user	
Proposal	Entered by user	

#### Outdoor unit information

Item	Method	Note
Installation location	Entered by user	
Breaker installation location	Entered by user	
No. of outdoor units	Selected by user	Required
Equipment name	Entered by user	
Equipment number	Entered by user	
Piping length	Entered by user	
Additional amount of refrigerant	Entered by user	
Item(s) to be checked	Entered/Selected by user	Required for items which can be selected

#### Indoor unit information

Item	Method	Note
No. of indoor units	Entered by user	Required
Pattern for each type	Selected by user	
Refrigerant name	Selected by user	
Date	Selected by user	
Inspector	Entered by user	
Breaker capacity	Selected by user	
Measured value or judgement	Entered by user	
Installation location	Entered by user	
Model	Entered by user	
Equipment number	Entered by user	
Item(s) to be checked	Entered/Selected by user	

#### Data attachments

Item	Method	Note
Refrigerant cycle operation	Selected by user	Required
status		
System data list	Selected by user	
Indoor unit operation status	Selected by user	
Outdoor unit operation graphs	Selected by user	
System configuration diagram	Selected by user	
(communication)		
System configuration diagram	Selected by user	
(refrigerant cycle)		

9.2.1. Specifying test result data

To specify test result data, click the [Search] button. A select file dialogue is displayed. Select the file to be used to create the report.

When a file is selected, the file path appears in the test result file text box.

Test result file File name			Search
	Figure 9.2.1	Search button	

### 9.2.2. Creating customer/test person data

To create customer/test person data, choose [New customer data] from the drop down menu and enter the data. To edit existing customer/test person data, choose the data to be edited from the drop down menu and enter the data.

When report data is registered, the new customer/test person data is added or updated.

Customer data	
Customer List	New customer data
Customer	
Div ./Section	
Name	
E-mail	
Tel	
Address	Post code

Figure 9.2.2

### 9.2.3. Entering test results/proposals

Enter test results data into the [Test Result] text box. Check the [Proposal] box to enter a proposal. Data can then be entered into the [Proposal] text box.

If a proposal is entered, only 5 lines of test result data can be entered.

	Test Result	
	A new line is refrected in a report directory (Max. 11 lines)	
Test result text box	1         2         3         4         5         8         9         11         11         12	
	Ś	
Proposal check box	Figure 9.2.3	
	Proposal text box	

### 9.2.4. Entering pipe lengths/additional amount of refrigerant

To enter the amount of added refrigerant and pipe lengths for the whole system, select the [Refrigeration amount calculation] menu or click the [Refrigerant calculation] button. Click the [Refrigerant calculation] button to open an additional refrigerant amount window.

		or Test operation											
	<u>F</u> ile <u>T</u> e	st report <u>R</u> efrig	gerant amount cal	culation <u>H</u> elp									
R	eport No	Project/3	ite 🖌		System			dat	e		То		
		Project/Site d	ata 🖊	Test res	sult (Outdoor)	1		Test and the	(tendered)		1	Disclose Data	attachment
nora	nt ar	nount	_/				Refr	ideran	t calcul	atior	h butt	on	<u> </u>
JUINT	ion n						-	3					Grapi
uiai									C Tempera	ure data			-+
		Model nam	ie	Serial r	number	Г	Pipe	length(m)				0.00	
							Ad	ditional				0.00	Refriger
					refriger	ant amount				0.00	calculati		
							Au	to fill to non	measure item				
ſ									Iı	verte	r		
	Che	eckitems	Che	k method	Standa	d		Unit A	Unit E		Init C	Unit D	Judge
	.5 Comp 500v megg		Record Min. valu 500v megger	e at U/V/W terminal.	1M ohm and over	1M ohm and over							
			500V Megger		1M ohm and over								1
	<u>ل</u> ے	Power	500V Megger		1M ohm and over								
	er Vic	Circuit bleaker, or Fuse	Install leakage br or field Fuse. Record its capac		Check local regulation, seclect by unit's total	Check local regulation, seclect by unit's total Max.current				•	•	•	
	Power supply line	Cable, Terminal	Check terminal s cable full inserti	crew tightness, on	Cable full insertion. loose.	No			-	-	•	-	1
	Refrigeran t pipe	Refrigerant pipe	Check leakage a portion by gas le	:welded / flared akage tester.	No leakage				-	•	•	•	
							R-S						
	ç					Stop	S-T						
	Operation Data	Power supply voltage	Record voltage b	etween each phases	± 10% of rated voltage. No voltage down in		T-R						
	80	Anuage			comp run mode.	_	R-S						
						Run	S-T						
-					Comp	T-R			_				
	Comp operation Management		Measure by amp	re clamometer	Less than Max.over	Comp							
		current	insusure by dripe	leasure by ampare clampmeter current li			3						
		High pressure	Measure in a stable condition after 20 Heating: min. operation. By pressure gauge or Cooling:										

Figure 9.2.4

In the calculator for additional refrigerant window, the outdoor unit model can be chosen, and pipe lengths can be entered. The entered results are used to calculate the refrigerant pipe length and the amount of additional refrigerant.

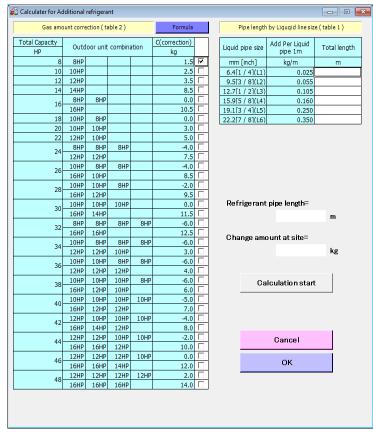


Figure 9.2.5

To calculate the refrigerant pipe length and the amount of additional refrigerant:

First, check the check box for the total capacity (hp) of the outdoor unit which executed test operation.

Next, enter the lengths of the connected pipes for each pipe diameter.

After entering the data, click the [Calculation start] button to calculate the refrigerant pipe length and the amount of additional refrigerant. Click the [OK] button to save the calculated results.



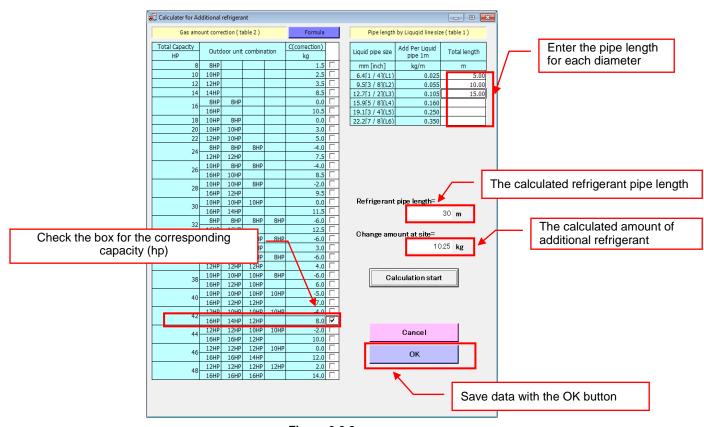
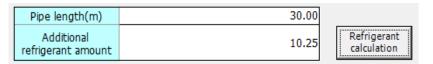


Figure 9.2.6

Click the [OK] button to close the calculator for additional refrigerant window, and automatically enter the calculated results for the outdoor unit [Pipe length] and [Additional refrigerant amount].





9.2.5. Checking the refrigerant amount calculation formula

Click the [Formula] button to check the formula for additional refrigerant amount calculation. The formula for additional refrigerant amount window opens when the [Formula] button is clicked.

The formula for calculating the additional refrigerant amount can be checked in the formula for additional refrigerant amount window. Click the [Back] button to return to the calculator for additional refrigerant window.



Calculater for Ad	lditional	nt								
Gas amo	unt corre	ection ( ta	ble 2)		Formula		Pi	pe length	by Liquqid line size	(table 1)
Total Capacity HP	Outd	oor unit	combina	ation	C(correction) kg		Liquid p	ipe size	Add Per Liquid pipe 1m	Total length
8	8HP				1.5	]	mm [	inch]	kg/m	m
10	10HP				2.5		6.4[1	/ 4](L1)	0.025	
12	12HP				3.5	_	9.5[3	/ 8](L2)	0.055	
14	14HP				8.5	_		/ 2](L3)	0.105	
16	8HP	8HP			0.0	-		/ 8](L4)	0.160	
	16HP				10.5	_		/ 4](L5)	0.250	
18	10HP	8HP			0.0	-	22.2[7	/ 8](L6)	0.350	
20	10HP	10HP			3.0	-				
22	12HP 8HP	10HP 8HP	8HP		-4.0	-				
24	12HP	12HP	8HP		-4.0 7.5	-				
	12HP 10HP	12HP 8HP	8HP		-4.0	-				
26	16HP	10HP	onr		8.5	-				
	10HP	10HP	8HP		-2.0	-				
28	16HP 12HP			9.5	-					
	10HP	10HP	10HP		0.0	-	Refri	ige rant	pipe length=	
30	16HP	14HP			11.5	-				m
32	8HP	8HP	8HP	8HP	-6.0					
32	16HP	16HP			12.5		Ohar		ount at site=	
34	10HP	8HP	8HP	8HP	-6.0		Unar	ige ami	Juni al sile-	
54	12HP	12HP	10HP		3.0					kg
36	10HP	10HP	8HP	8HP	-6.0					
50	12HP	12HP	12HP		4.0					1
38	10HP	10HP	10HP	8HP	-6.0	_		Са	lculation start	
55	16HP	12HP	10HP		6.0	_	_	_		
40	10HP	10HP	10HP	10HP	-5.0	-				
	16HP	12HP	12HP		7.0	-				
42	12HP	10HP	10HP	10HP	-4.0	-				
	16HP	14HP	12HP	1.01/2	8.0	-				1
44	12HP	12HP	10HP	10HP	-2.0	_			Cancel	
	16HP 12HP	16HP 12HP	12HP 12HP	10HP	10.0	-	-	_		
46	12HP 16HP	12HP 16HP	12HP 14HP	TOHN	0.0	-			ок	
	10HP	10HP	14HP 12HP	12HP	2.0	-	_	_		
48	12HP 16HP	12HP 16HP	12HP 16HP	1288	14.0	-				

Figure 9.2.8

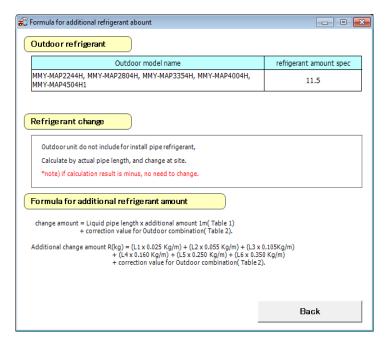


Figure 9.2.9

9.2.6. Automatically filling in test results

The test results for outdoor/indoor units can be filled in automatically. To automatically fill in results: Outdoor units - click the [Auto fill to non measure item] button in the [Outdoor unit] tab.

Indoor units - click the [Auto fill to non measure item] button on the [Indoor unit] tab.

Report f	for Test operation											- (
ie <u>T</u> e	est report <u>R</u> efrig	gerant amount ca	lculation <u>H</u> elp									
port No	Project/Si	te		System			da	ate		То		
	Project/Site da	ata	Test res	ult (Outdoor)			Test resu	ilt (In	idoor)		Display Data	attachment
Instal	l place				Out	door ur	it rumber	R	etrieve test dat	a		
	er place				ŀ	lunits	-		Pressure data			Graph
Didditt	· · · · · · · · · · · · · · · · · · ·		0.11					0	Temperature (	data		
	Model nam	e	Serial n	umber		Pipe	length(m)				0.00	
							lditional				0.00	Refrigerant calculation
					L	remge	rant a toun	IC	_			Calculation
						Au	to fill to nor	n me	asure item			
Ch	eck items	Cho	k method	Standa	1				Inve	rter		Judge
UI				otanuau			Unit A	•	Unit B	Unit C	Unit D	Juuge
Insulation	Comp	Record Min. valu 500v megger	e at U/V/W terminal.	1M ohm and over								-
Insul	Fan motor	500V Megger		1M ohm and over								
	Power	500V Megger		1M ohm and over				_				
Power supply line	Circuit bleaker, or Fuse	Install leakage b or field Fuse. Record its capac		Check local regulation, seclect by unit's total Max.current				•	-	-	-	-
	Cable, Terminal	Check terminal s cable full insert	crew tightness, ion	Cable full insertion. No loose.				•	•	•	•	-
Refrigeran t pipe	Refrigerant pipe	Check leakage a portion by gas le	t welded / flared akage tester.	No leakage				•	•	•	-	-
						R-S						-
5					Stop	S-T						
Operation Data	Power supply voltage	Record voltage b	etween each phases	± 10% of rated voltage. No voltage down in		T-R R-S		_				
o O				comp run mode.	Run	R-S S-T						
					I WIT	T-R						
					Comp			+				-
	Comp operation current	Measure by amp	are clampmeter	Less than Max.over current limit by model.	Comp 2						1	-
					Comp	3						-
		Measure in a sta	ble condition after 20	Heating:								

Figure 9.2.10



i	47 P		r Test operation																• <b>x</b>
			t report <u>R</u> efrie				elp												
	_	_		-	iniouni calcula	uon <u>n</u>													
	Report	: No	Project/S	ite			System				date To								
			Project/Site d	ata			Test result (Outdoor)				Te	st result	(Indoor)			Display Data attachment			L L
	In	door	units Q'ty	Test	node select				Date		Monday , December 10, 2012 🔻								
			nn(s@(y	Mod	Model type cool / hea			Cool		-	Check		Monday	, Decembe	er 10, 201				
			Refr	igerant 🛛	R-410A	• (	🗋 Heat			Oliecki									
															_				
					Check items Breaker cap		Check method record		ELB S	tan	dard	_		Measure/J		0 A			
					Breaker cap	acity	record		ELD			-S				0 V			
					Supply voltage		Measure between ea		Within $\pm 10(\lambda$	/) of		-т				οv			
				Power Line	voltage		phase in ope mode		d voltage			-т				οv			
						м	easure secondary o	í the											
					Insulatio	n  "	breaker	, and	1M ol	hm a	and over								
				Indo	or unit No.	In	stall place		Model nam	no			Soria	numhar					
				1		iotali piaco		Hodernan	noder name			Serial number							
					2														
					3 4											1			
					5											4			
	_		SIL .		6 7										-				
	1		ill to non ure item		8											-			
	-																		
			Check items		Check me	thod	Standard		1		2	1	3	4	5		6	7	8
			Inlet air temp		Thermometer		Temp difference												
	D	un	Outlet air temp	)	Thermometer		between inlet an	d outle											
Auto fill to non	K	un	Temp differenc	te	Difference bet inlet and out		Cooling:8-10°C Heating:15-20°C												
measure item			Temp setting		Change temp	setting	Can be operate												
button	ciii		Drain		Pour the wate	er	Smooth flow		•		-		•	•		-	•	-	
Dutton		hers	Operation sour	nd	By listening		No abnormal noise	e	-	·	•		•	+		-	•	•	
			Air filter		By brush		No clog /No dama	age	-	·	-		-	•		-	-	-	
			Terminal screw	loosen	Use screw driv	/er	No loose		-	·	•		•	•		•	•	•	
																			• •

Figure 9.2.11

If the number of outdoor/indoor units is below the maximum, a confirmation message appears. Click the [OK] button to automatically fill in the test results.

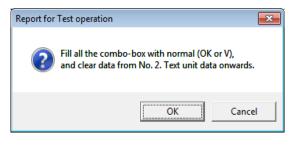


Figure 9.2.12

#### 9.2.7. Importing screens

System status can be imported as a picture using the test result file data. Screens can be imported when a test result file is saved.

Select the screen to be imported from the [Data selection] list displayed on screen. Then click the [Import] button when it can be clicked.

Import 55 / 68

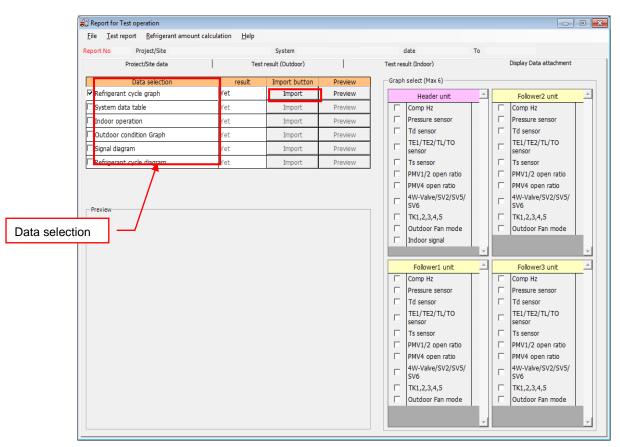


Figure 9.2.13

The wait screen is displayed while the screen is rendering. When it has been rendered, the selected screen is displayed.

The [Record No.] and scroll bar for browsing data appear on the import screen. Display the data to be imported, and select the [Retrieve] menu to import the screen data. Click the [Preview] button to check the imported screen data.



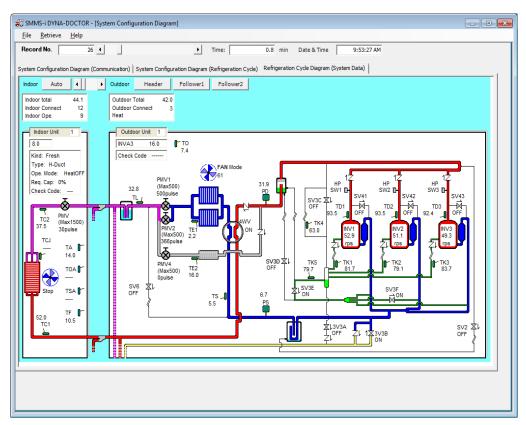


Figure 9.2.14

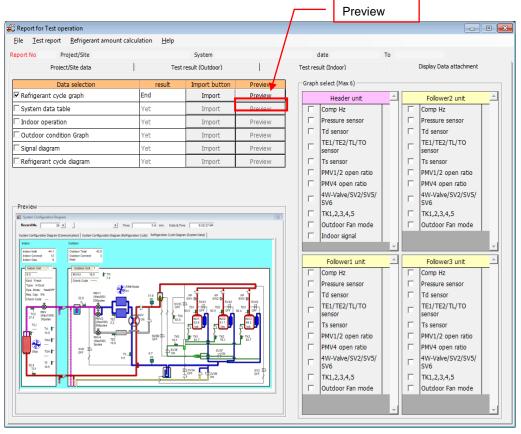
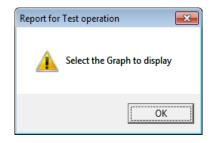
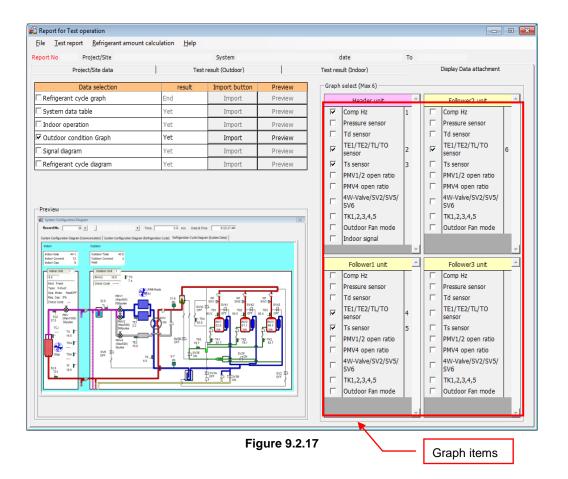


Figure 9.2.15

To import a screen from the [Outdoor unit operation graph list], graph items must be selected. If an attempt to import the [Outdoor unit operation graph list] is made without any graph items selected, an error message is displayed.







#### 9.2.8. Registering report data

Select [Registration/modify] from the [Test report] menu to register entered report data. To register new data, select [New report] from the [Test report] menu and allocate a [Report No.]. Then select [Registration/modify].

ort for Test operation	port for Test operation
Test report Refrigerant amount	<u>I</u> est report <u>R</u> efrigerant amou
New report	t <u>N</u> ew report
Registration / modify	
Retrieval / delete	R <u>e</u> trieval / delete
Figure 9.2.18	Figure 9.2.19

When [Registration/modify] is clicked a register/modify report data message is displayed. Click [OK] to start registering the report data to the database file. If the report data is registered correctly, a registration complete message is displayed.

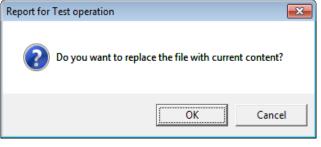
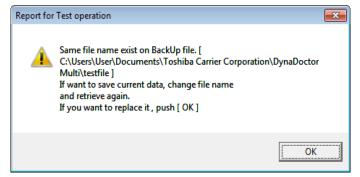


Figure 9.2.20

Report for Test operation	<b>—</b>
Registration data sav	ved correctly.
	ОК



If a test data file which has already been registered is registered again, a test results data confirmation message is displayed.



#### Figure 9.2.22

9.3. Searching for report data

Registered report data can be searched. Select [Retrieval/delete] from the [Test report] menu to open the test report retrieve window.

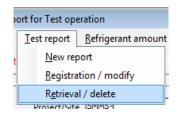


Figure 9.3.1

In the test report retrieve window, search conditions can be set and relevant report data can be retrieved. The following conditions can be set for searches:

Item	Method	Note
Report No.	Entered by user	
Project/site name	Entered by user	
Start date for test	Selected by user	
Customer name	Entered by user	

If no search conditions are set, all of the registered report data will be shown in the search results.

🕽 Test report retrieve					- • •
Report No. Report type	System name or No	Project/Site name	Customer name	Start date for te	est   Finish dat <u>(</u> ^
Search condition	To				↓ Search
If do not remember report	No., pls click SEARCH w	iith blank.			Delete
C Other				_	Cancel
Start date for test	AND search C (     And a constraints)     And a constraints     And a constraints     And a constraints	- To Monday	, December 1		Select
Customer name					

Figure 9.3.2



9.3.1. Searching by Report No.

Click the radio button next to [Report No.] to select a report no. to search for. Report numbers can be entered when the [Report No.] radio button is selected.

To specify the report numbers to search for, enter numbers in the text boxes next to [Report No.] and [To]. If the starting report no. or finishing report no. is unclear, leave the box blank.

Report No.	1 To	o 19		
If do not	, t remember report No., p	pls click SEARCH wiith b	blank.	

Figure 9.3.3

Click the [Search] button to search for report data with the specified report no.

😴 Test report retrieve	- • •	
Report No. Report type System name or No Project/Site name Customer name	Start date for test   Finish datr	
Image: Constraint of the second se	Search	- Search button
Foreit/Site name     AND search C OR search     Start date for test     Monday , December 11 T To Monday , December 11 T     G AND search C OR search     Customer name	Select	

Figure 9.3.4

If report data is found which fits the set conditions, it is displayed on screen. To display the contents of the report data, select the data and click the [Select] button.

A confirmation message is displayed before the data is displayed. If the currently entered data does not need to be registered, click the [OK] button.

The selected report data is displayed when the [OK] button is clicked.



Test n	eport retriev	ve						- 0	x
									_
			System name or No 2	Project/Site name SMMS-i			e for test 11:29:01 AM	Finish da	
1 2 2 4				Project/Site'		12/6/2012 7		12/6/2012	
									<b>-</b> 1
•								Þ	Ľ
Search	condition-						-		
Re Re	eport No. –							Search	
R	eport No.		1 To	15				Search	
	,	remember rep	port No., pls click SEAF	RCH wiith blank.				Delete	
									_
0t								Cancel	
	Project/Site	e name							
			AND search	C OR search				Select	1
Г	Start date f	fortest	Monday , Decemb	er 1 v To M	londay , Decembe	er 11 🔻		Jareet	
			AND search	C OR search					
Г	Customer r	name					1		
			,					$\mathbf{X}$	

Figure 9.3.5

Test report retrieve		×
Current data not saved ! . If proc	eed , your input data would	l be clear.
	OK	Cancel

Figure 9.3.6

9.3.2. Searching by project/site name, test start date and customer name

To select and search for project/site name, the test start date or customer name, click the radio button next to [Other]. When the [Other] radio button is selected, project/site name, the test start date and customer name can be entered.

To search for a project/site name, check the [Project/Site name] check box. When [Project/Site name] is checked, data can then be entered into [Project/Site name].

Check [Start date for test] to set a test start date to search for. Check [Customer name] to set a customer name to search for.



Figure 9.3.7

When several search items have been entered, AND search or OR search can be selected. If the AND search is checked, report data which matches both conditions will be searched for. If the OR search is checked, report data which matches one or more of the conditions will be searched for.

For example, if information is entered as below, report data in which the project/site name is "Air Conditioning System" and the start date is "February 2nd 2011", or the customer name is "Toshiba", will be searched for.

Other ✓ Project/Site name	Air conditioning System
	AND search C OR search
☑ Start date for test	Monday , December 11 - To Monday , December 11 -
	AND search C OR search
Customer name	Toshiba

Figure 9.3.8

#### 9.4. Deleting report data

Registered report data can be deleted. To erase report data, select the report data to be deleted and click the [Delete] button.

🕄 Tes	st report retrie	eve					- • •	
	Report No.	Report type	System name or No	Project/Site name	Customer name	Start date for test	: Finish da 🔺	
1	2	SMMS-i	2	SMMS-i	Toshiba	11/19/2012 11:29:01	AM 11/19/2012	
2	4	SMMS-i	System Name'	Project/Site'	Customer'	12/6/2012 7:14:39 P	4 12/6/2012	
	rch condition- Report No Report No.   If do not		To To port No., pls click SEAF	CH with blank.			Search Delete	
						•		
	Other						Cancel	
	Project/Sit	e name						Delete button
			AND search	C OR search			Select	Delete button
	🗌 Start date	for test	Monday , Decemb	er 11 - To M	londay , Decembe	er 11 -	Januar	
			AND search	C OR search				
	Customer	name						
			,					

Figure 9.4.1

A delete confirmation message is displayed. Click the [OK] button to delete the data. Clicking the [OK] button deletes the report data from the database file.



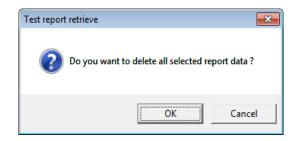


Figure 9.4.2

9.5. Printing out report data

Report data can be printed out. To print report data, select [Print...] from the [File] menu.

ł	🕻 Rep	ort for Test	oj
	<u>F</u> ile	<u>T</u> est repo	rt
		<u>P</u> rint	F
		<u>E</u> xit	je

Figure 9.5.1

A start printing confirmation message is displayed. Click [OK] to start printing. The test operation report printing screen is displayed when the [OK] button is clicked.

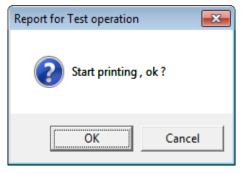


Figure 9.5.2

On the print screen, the printer settings, number of copies and printing format can be set.

Click the [Property] button to change the printer settings. A print dialogue is displayed. The number of copies can also be input directly.

	Print Printer Name Microsoft XPS Document Writer Option Option Print style ① Gancel Print style Occurrent Prin
No. of copies	Figure 9.5.3 Indoor unit print format settings
	Print         Pinter       Properties         Status:       Ready         Type:       Microsoft XPS Document Writer         Where:       XPSPort:         Comment:       Print to file         Print range       Copies         III233       Colleate         OK       Cancel
	Figure 9.5.4

Click the [OK] button to print the test operation report.

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