Wisd
LABORATORY INSTRUMENTS

Certification by...
- ☑ CE & RoHS Certified
- ☑ KGMP Certified
- ☑ ISO 9001 Certified
- ☑ PL Insurance
- ☑ Validation(IQ&OQ) Service

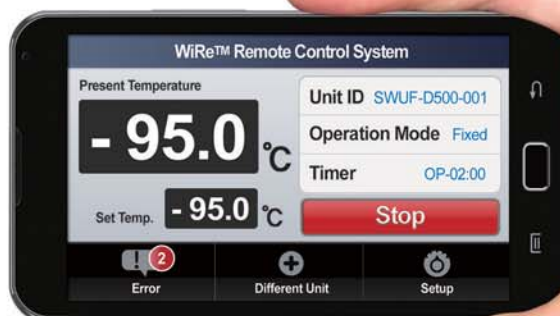# SmartCryo™ −86℃ / −95℃ Upright and Chest type Freezer

Dual SHFS™ **SWUF-D** models −95℃

SHFS™ **SWUF** models −86℃

Control in My Hand

WiRe™ Remote Control System

Present Temperature
- 95.0 ℃
Set Temp. **- 95.0** ℃

Unit ID SWUF-D500-001
Operation Mode Fixed
Timer OP-02:00
Stop

Error ② | Different Unit | Setup

Sales & A/S :
by the Official Distributors in your area

DAIHAN Scientific
YOUR PARTNER in LABORATORY

Cat 135 (25 Jan. 2013)

NEW

Innovative Technology to Improve the Quality of Human Life

Unique Features of *SmartCryo™* Ultra Low Temp. Freezer

One ! SMART Evolution of Freezer

It's the innovation to bring together the full-touch screen LCD Controller and the Smart-Lab™ System into the Freezers. The Full-Touch Screen Controller provides the intuitive user interface as well as the Smart-Lab™ System offers the remote control, self-diagnosis and real-time monitoring through App or Web. It is very simple and easy to control, secures your samples in safety, and improves your life being.


>> "Remote Laboratory" - No limitation on Time and Place

>> "Intuitive Use" - Easiest way to monitor and control

>> "Secure Laboratory" - Self-diagnostics & Real-time notification

Two ! Innovation of Freezing System

Most of the Ultra-Low Temperature Freezer has two compressors cooperating with each other to drop the internal temperature down to -86 ℃ as shown in the following figure and its overall freezing mechanism is very complicated.

However, our new **SHFS™** uses only single compressor. Even though, single set of a compressor, a capillary tube, a condenser and an evaporator is incorporated, it ensures the temperature down to -86 ℃ by an advanced control technology of the compressor and the process of specially mixed refrigerants. **SHFS™** overcomes technical complexity of the typical cascaded double compressor system. Simplification of the freezing mechanism and electricity minimizes the noise level, power consumption and failure.
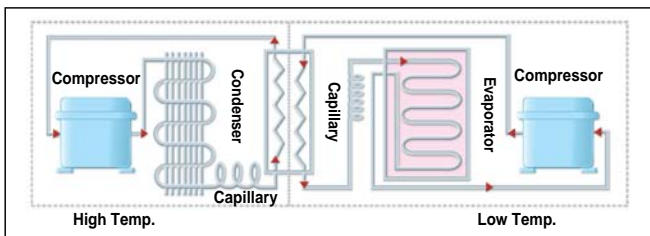
Typical Cascaded Compressor System
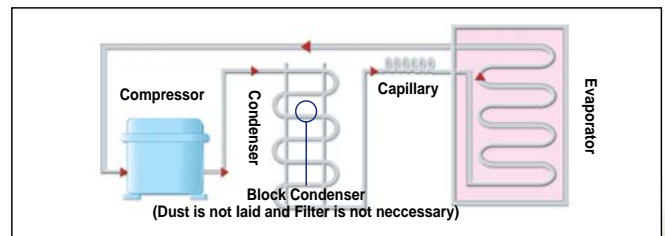
New Simplified Hi-Efficiency Freezing System (SHFS™)

>> Single SHFS™ System - The most Simplified Freezing System in the world, down to -86℃

>> Dual SHFS™ System - Independent operation of two Freezing Systems, down to -95℃

Three ! Eco-Friendly Products

>> **Low Power Consumption**

>> **RoHS Certified**

The RoHS is the directive on the restriction of the use of certain hazardous substances (Pb, Cd, Hg, Hex-Cr, PBB, PBDE) commonly used in electronic and electronic Equipment (2011/65/EU). SmartCryo™ ULT Freezers are strictly controlled and produced under RoHS Regulation.

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Innovative Technology to Improve the Quality of Human Life

SmartCryo™ Ultra Low Temp. Freezer with Smart-Lab™ Controller
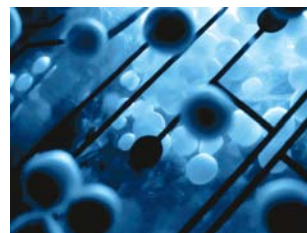
ULT Freezer is evolving like your Smart Phone in hand, and Smart TV at home.

The SmartCryo™ ULT Freezer is the innovation of the freezers. It has been equipped with 7-inch full-touch screen controller and integrated the most extensively applied Android System and Internet Connectivity.

Anytime! Anywhere! Anyhow!
You can monitor and control your freezers in your lab using your smart phone, tablet or on the web.

Smart-Lab™ Controller

- 7 inch full touch screen TFT LCD Controller of "Intuitive Use"
- Data Recording : On-Screen Temperature Chart and USB Storage for Recorded Data
- Internet Connectivity with WiFi
- Remote Monitoring and Control by WiRe™ Service
- Storage Management function: Record the location of samples in the chamber and find easily afterwards, on screen
- Self - Diagnostic Function : Automatic Check & Alarm for the Failures in Key parts

WiRe™ App & Web Service

- Innovative Service by DAIHAN Scientific based on Mobile and Web technology
- Support all different kinds of Web browser by HTML5 Standards
- Available in all the PCs, Laptops and MACs
- Offering Android App and Apple iOS App for Smart phone and Tablet
- Almost same UI as the Touch Screen Controller on the Equipment is available

Smart-Lab™ Controller of *SmartCryo*™ Ultra Low Temp. Freezer

① USB port:
   Data backup and program update of the controller
② Display of Present Temperature
③ Graph of Recorded Temperature
④ Configuration Setting with other functionss
⑤ Display of Set Temperature
⑥ LED Lamps indicating the operation status
⑦ Offset Setting
⑧ Storage Function to note the sample information in the chamber
⑨ Start / Stop
⑩ LCO2 Injection

No Button. No Knob. Simply Touch!!

Full Touch Screen Controller and Internet Connectivity!!

The DAIHAN Smart-Lab™ Controller is embedded in SmartCryo™ ULT Freezer, which has a lot of useful functions like self-diagnostic function, data recording function, and storage management function and so on.

These functions are unique and innovative in the laboratory equipments.

Also this controller is connected with researcher's smart phone, tablet or labtop computer through Internet, by WiFi, so scientists are able to check all the equipments in the laboratory at any time, and at any place.

Features of Smart-Lab™ Controller

Main Display of Controller

▶▶ Ergonomic Screen Design

- 7˝ Full Touch Screen TFT LCD
- Intuitive User Interface
- No-extra Button, knob or Switch
- All the main Functions and Parameters are displayed on the Main Screen.
- Simple Touch to set the Temperature, Time and other Parameters.

Temperature Chart Display

▶▶ Automatic Data Recording

- High Resolution Graphic Display.
- On-Screen Temperature Chart : Check the Temperature Record Graph on the Screen and could see the Details by Zoom-in & Zoom-out enabled at your finger tips.
- The Recorded Data could be transferred to PC by USB Memory.

Error Status Display

▶▶ Self Diagnostic Function

- Automatic Check & Alarm for Failures in Key Parts of the equipment.
- Real-time Notification of any Failure in the Equipment to the User(s), to the Service Man and to Supplier, through WiRe™ Service.
- Implemented by LIN and empowered by WiRe™ Service.

Storage Management Function

▶▶ Storage Management Function

- Record the location of samples in the chamber and find easily afterwards, on screen.
- Possible to easily and safely manage the location of sample in the chamber.
- Anyone could notice sample's history due to it is possible to take memo of sample location.

▶▶ Internet Connectivity with WiFi

- Internet Connectivity with WiFi
- WiRe™ App & Web Service : It is possible to monitor and control the SmartCryo™ ULT Freezer. through all smart phone, tablet on Web without restraint in time and place.

Innovative Technology to Improve the Quality of Human Life

SmartCryo™ Ultra Low Temp. Freezer
WiRe™ App & Web Service
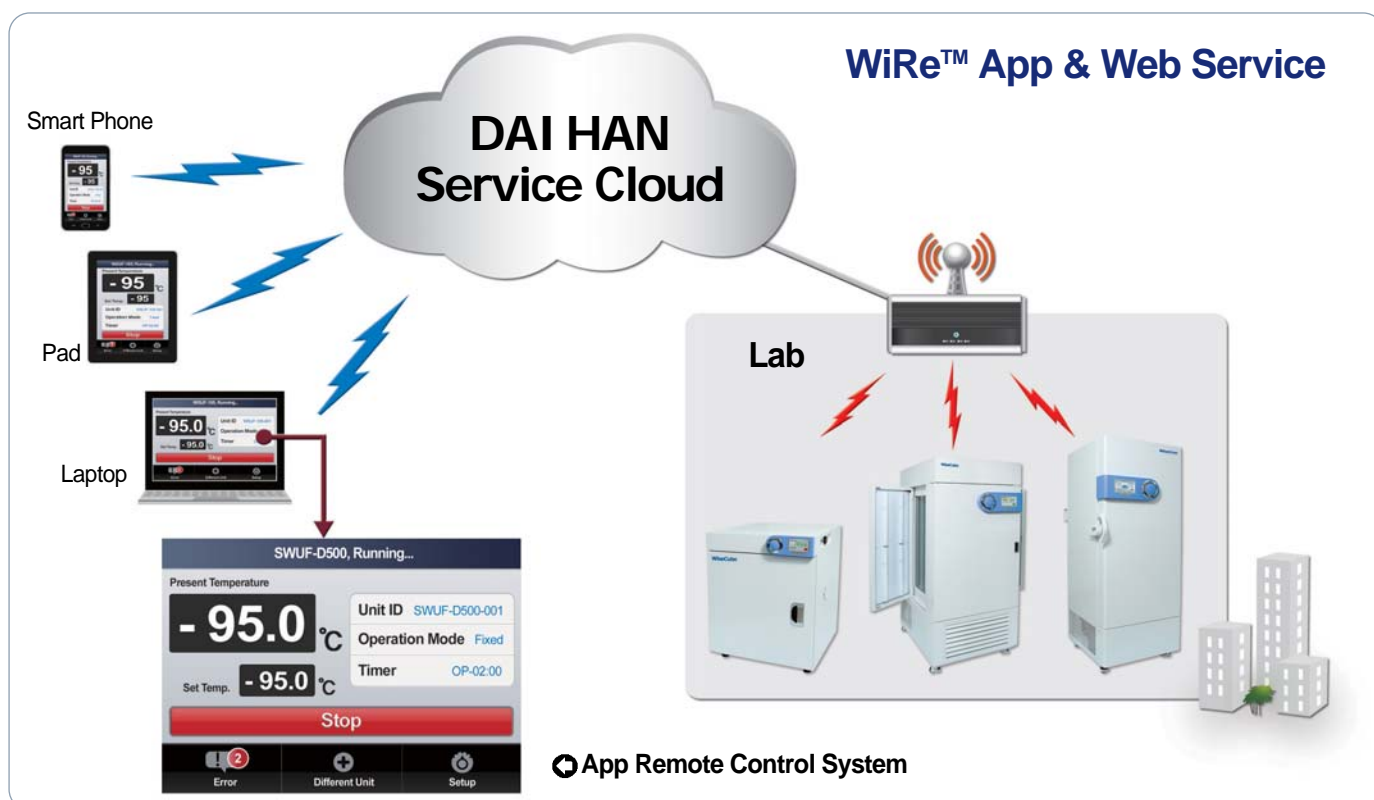
The DAIHAN WiRe™ App & Web Service

Make your lab SMART with WiRe™ App & Web Service offering with SmartCryo™ Ultra Low Temperature Freezers.

WiRe™ App & Web service enables gathering, analyzing, and sharing of experimental data, and direct control of the unit is possible as well, anywhere and at any time.

When a defect of the unit occurs, it is processed by self-diagnostic system automatically. If you want to get safe and reliable data comfortably, it's a Smart choice to be Supported by WiRe™ service.

*At anytime, Anywhere you are, and Anyhow, you can check and control the Freezer in your Lab **Using your Smart Phone or Web.***

WiRe™ App & Web Service

Smart Phone

Pad

Laptop

**DAI HAN
Service Cloud**

Lab

SWUF-D500, Running...

Present Temperature

- 95.0 ℃

Unit ID   SWUF-D500-001
Operation Mode   Fixed
Timer   OP-02:00

Set Temp. **- 95.0** ℃

Stop

Error   Different Unit   Setup

⟲ **App Remote Control System**

The Features of WiRe™ App & Web Service

Experiece the smart life at our work with SmartCryo™ ULT Freezer through WiRe™ App & Web Service !!
Once Smart-Lab™ Controller is connected with Ethernet or WiFi, you can control and monitor the unit with your
own Smart Phone, Tablet PC and Laptop computer through WiRe™ App & Web Service anytime, anywhere.

- Developed by Advanced Web Technology
- Support all different kinds of Web browser by HTML5 Standards
- Almost same UI as the Touch Screen Controller on the Equipment is available

- Available in all the PCs, Laptops and MACs
- Offering Android APP and Apple iOS App

›› WiRe™ Remote Control System

- Anytime, anywhere you are, and anyhow, you can check and control the Freezer in your Lab using your smart phone or web.
- It is possible to monitor and control the Smart-Lab™ equipment through all smart phone, tablet and web without restraint of time and place.
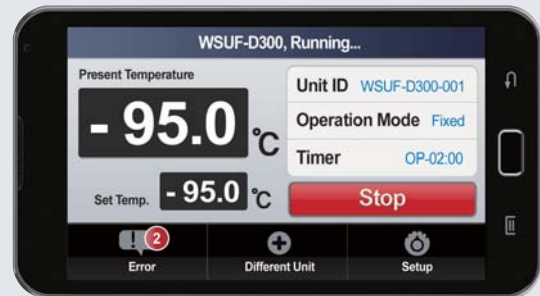
›› Device Settings and User Registration

- A single unit can be remote controlled by multiple users
- A single user can remote control multiple units in the Lab
- Smart-Lab™ equipments offer registration of multiple users with simple account information

›› Self Diagnostic Function

The Self-Diagnosis System senses a certain defect within the unit, and reports it to the service center through the servers operated by DAIHAN.
The Service Center verifies the defects of the unit received, and could offer prompt service.
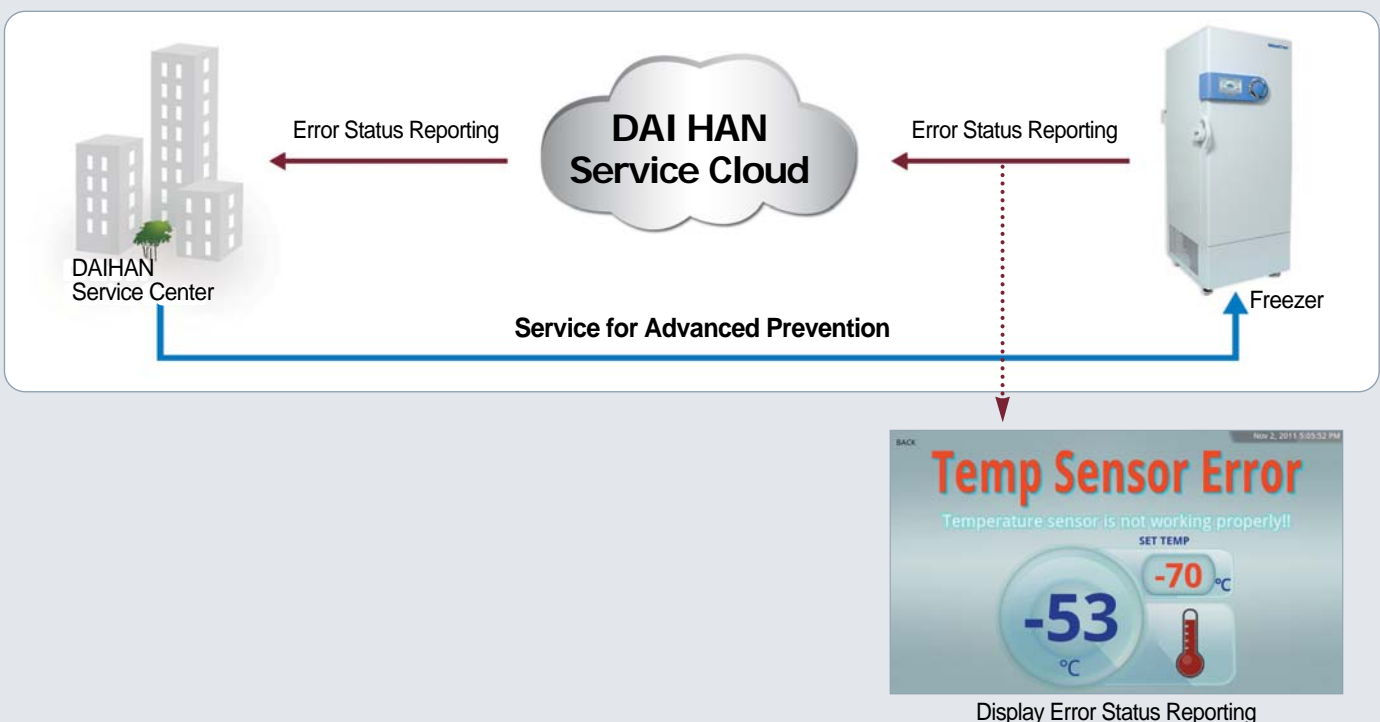
Display Error Status Reporting

7

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Innovative Technology to Improve the Quality of Human Life

SmartCryo™ **Ultra Low Temp. Freezer with SHFS™ System**

Innovation of Freezing System
DAIHAN SHFS™ System (Simplified Hi-Efficiency Freezing System)

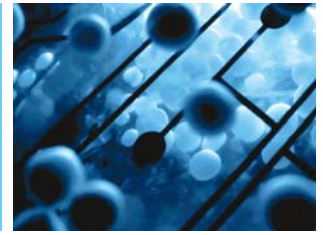Most of the Ultra-Low Temperature Freezers has two compressors cooperating with each other to drop the internal temperature down to -86 ℃ as shown in the following figure and its overall freezing mechanism is very complicated.

However, our new **SHFS™** uses only single compressor. Even though, single set of a compressor, a capillary tube, a condenser and an evaporator is incorporated, it ensures the temperature down to -86 ℃ by an advanced control technology of the compressor and the process of specially mixed refrigerants. **SHFS™** overcomes technical complexity of the typical cascaded double compressor system. Simplification of the freezing mechanism and electricity minimizes the noise, power consumption and failure of operation.

High-Efficiency! User Safety! Energy Conservation! Long Life time of **"The New Generation SHFS™"**

Simplified Hi-Efficiency Freezing System Mechanism : Easy Maintenance
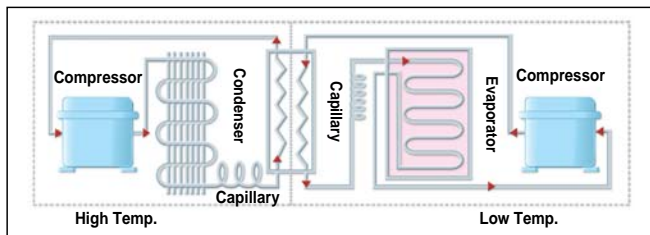
Typical Cascaded Compressor System
Two Freezing cycles contribute Complicated mechanism
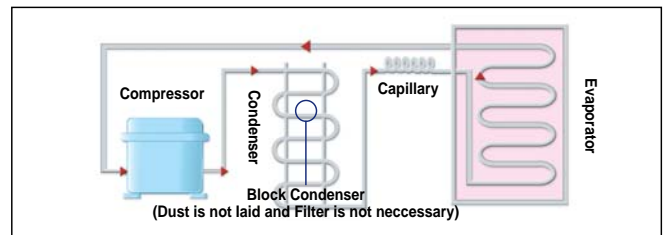
New **Simplified Hi-Efficiency Freezing System**
Single freezing cycle works only!!

Doubled Stability and Robustness! Dual SHFS™ (SWUF-D models)

We offer an extraordinary high-stability system powered by two **Simplified Hi-Efficiency Freezing System (SHFS™)** operating independently. Normally, both of the two compressors are running, and it drops the temperature inside the storage chamber down to −95°C. Even if one SHFS™ fails in operation by a certain unexpected problem, the other SHFS™ still works and maintains ultra-low temperature down to −80°C. It means one SHFS™ works as a 'backup' of the other SHFS™. This innovative mechanism realizes doubled stability, robustness and fault tolerance, which are the most important feature of the ULT freezer needed by all the customers.

(1) Typical Cascaded Compressor

(2) Dual SHFS™ ⇒ SWUF-D series

▶ **The lowest temperature** of −95°C is ensured by **Dual SHFS™** system running independently and simultaneously

▶ **Fault Tolerance System**
  - Realization of doubled stability and robustness

▶ **Incomparable Fast and Powerful Freezing**
  - Fast Recovery of Target Temperature
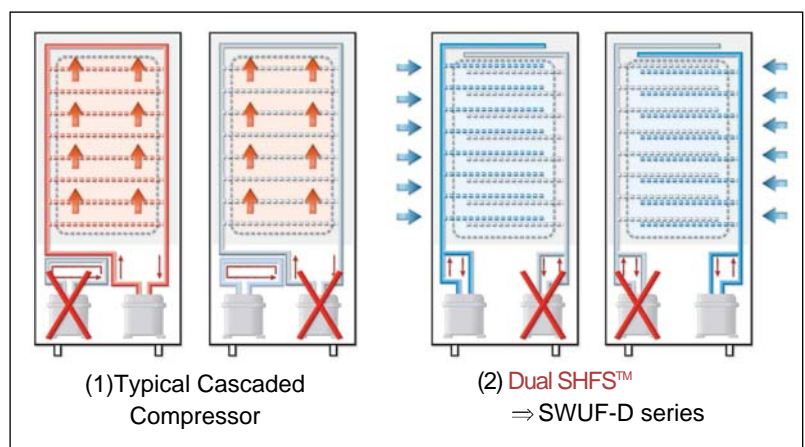
(1) Complicated mechanism
  ⇒ **If one of compressor fails, temperature would go up**

(2) Even if one of the two SHFS™ fails to run, the other one is still running properly
  ⇒ **Minimum − 80 ℃**

≫ Fastest Freezing by SHFS™
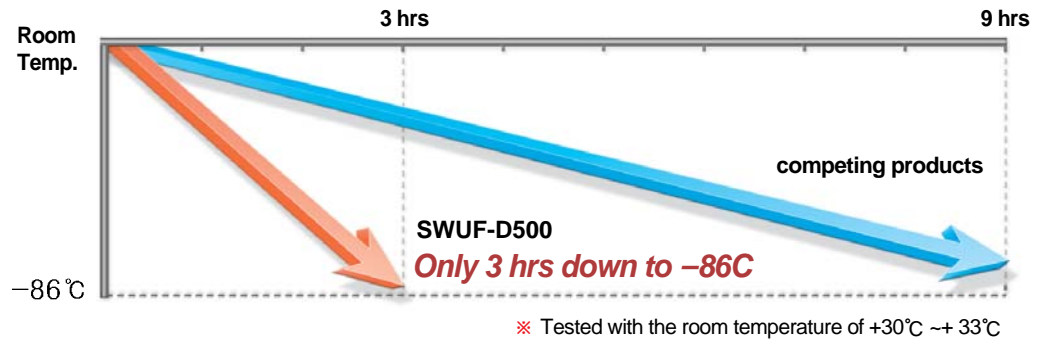
▶ Comparison Data of Freezing Speed between competing products

Room Temp.

3 hrs   9 hrs

competing products

SWUF-D500
Only 3 hrs down to −86C

−86℃

※ Tested with the room temperature of +30℃ ~+ 33℃

▶ Time Taken to Reach Down to Ultra Low Temperature

Model Temp.	Dual SHFS™			SHFS™ *Simplified Hi-Efficiency Freezing System*				
	SWUF-D300	SWUF-D500	SWUF-D700	SWUF-300	SWUF-500	SWUF-80	WUF-41	WUF-51
	308Lit.	503Lit.	683Lit.	308Lit.	503Lit.	82Lit.	375Lit.	438Lit.
	Upright Type						Chest Type	
− 80℃				240min.	330min.	150min.	120min.	150min.
− 86℃	160min.	180min.		270min.	420min.		210min.	270min.
− 90℃			240min.			270min.		
− 95℃	270min.	300min.						

※ Tested with the room temperature of 30 ~ 33℃

≫ Simple Mechanism for high-efficiency and safety.

· It is not requested to have oil separator which separates oil from the compressor, Although oil separator is equipped, it is not possible to completely separate oil from the compressor, which possibly cause oil frozen problem in capillary.
· Not necessary to have expansion tank as temporary storage of high-pressure gas
· Using Block condenser without typical pins : Dust Free, Filter Free, more users friendly from maintenance and safety perspective, no need for filter cleaning

≫ Configuration for user's convenience

· With the adoption of thermal temperature sensor through cable port, it is possible to monitor and check the temperature using seperate instruments
· Equipped signal terminal to enable user to easily connect external temperature alarm system
· Automatic Vacuum Breaker to easily open the door against pressure difference between the chamber inside and outside

NC COM NO

Signal Terminal for External
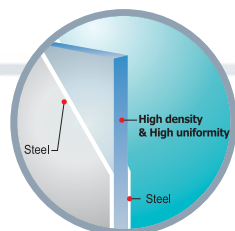Temp. Alarm System

Cable port for External Temp. Sensor

*SmartCryo*TM **Ultra Low**

- **Robust & Flexible Design of Power Door Handle with Locking function.**

- **Cable Port for external Temp. sensor**

High density & High uniformity

Steel

Steel

- **Insulation Panel packed in housing and door ensures defrosting around outer surface**

NC COM NO

- **Signal Terminal for External Temp. Alarm System**

- **Filter-Free Mechanism**
  Significantly Lowers Heat Generated by the Compressor.
  Block Condenser (without pins) Realizes Filter Free Structures.

- **Automatic Vacuum Dissolver making door opening easy**

- **Tripl for P**

SWUF - D300

SWUF

※ Design of pro

- **Temperature Recorder (Optional) Large and vivid LED display**

Comparison of Inside formation : SHFSTM **New technology *vs* competing products.**

Expesion Tank

Compressor   Compressor

Fan   Fan

Oil Separator

Evaporator   Evaporator

Back UP

Filter   Filter

▶ **Complicated Cascaded System**

Block Condenser
(Dust is not laid and Filter is not neccessary)

Compressor

Fan

Back UP

Evaporator
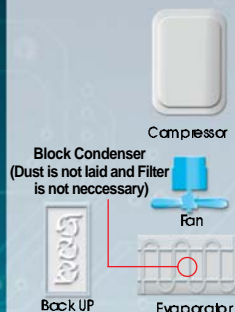
▶ **Innovative SHFS**TM
- **Simplified Hi-Efficiency Freezing System**
- **Much Simpler**
- **Oil separator free, Expansion tank free**
- **Block condenser against typical pin-type condenser - Dust free, Filter free**

Temp. Freezer

- **Inner door insulation material**

- **e-layer Gasket erfect Insulation.**

- **Inner Door Handle**
  - easily opened against frosting.

-95 ℃
-95 ℃

- **Smart-Lab™ Controller**
  - Easy setting, Temperature Graph, Storage function (USB interface), etc.

- **CFC-Free**
  HFC refrigerants are used.

- **Maintenance-free cooling device with fully Hermetic High-Capacity compressor.**

- **Alarm**
  Built in standard warning and alarm functions.

- D350C
duct will be changed

- **Standard Back up Battery System for Data logger and Alarm System.**

- **Remote Wire/Wireless Alarm System (Optional)**
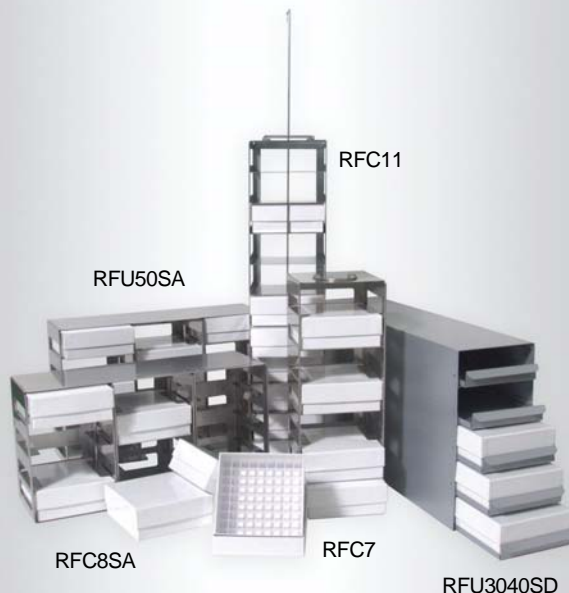 - Set to be activated when the temperature inside the chamber goes up to -65 ℃.
  - Main controller signals to RWAS, if connected, at the alarm status, and then RWAS makes phone calls or send messages.
  - User could set and store multiple phone numbers and alarm statements.

- **LCO2 back up system (Optional)**
  - without LCO2 Gas Tank

▶ Rack System

RFC11

RFU50SA

RFC8SA   RFC7

RFU3040SD

※ **See Page 24~25 for Freezer Accessories**

A

B

C
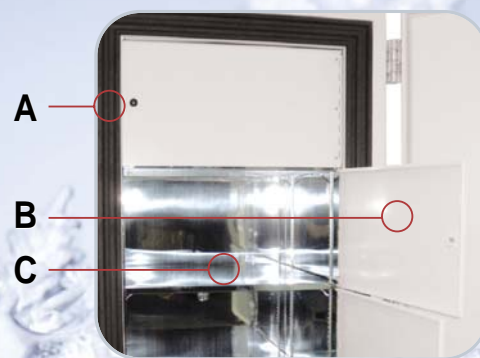
Inside Structure

A High-quality molded thermal insulation material is filled between outer housing and inner chamber, of which structure ensures the stability of the internal temperature and minimizes the frost.

B Four inner doors are equipped for better thermal insulation and efficient use of the storage chamber. They are made of powder coated stainless steel, so it is stronger for anti-frost.

C One piece of internal storage chamber made of high-quality stainless steel is divided into four sub chambers by three shelves, so it's very convenient to efficiently fill the storage boxes inside.

Innovative Technology to Improve the Quality of Human Life

Upright Type −95℃ ULT Freezer

Wisd SmartCryo™ SWUF-D Upright Type −95℃ ULT Freezer, −95℃~−65℃
with Smart-Lab™ System, Dual SHFS™, Non-Freon Refrigerants, Automatic Vacuum Releasing System, 308-/ 393-/ 503-/714-Lit.

NEW

CE
RoHS
Compliance

7-inch Smart-Lab™ Controller

Upright Type −95℃ Freezer (SWUF-D300)

Smart−Lab™ System and Dual SHFS™

◼◼◼ Application & Features

- Ergonomic 7″ Full Touch Screen TFT LCD(Smart-Lab™ Controller)
- WiRe™ App & Web Service.   • Storage Management Function
- Self-Diagnostic Function   • Automatic Data Recording
- Internet Connectivity with WiFi
- **Simplified Hi-Efficiency Freezing System** can freeze down to −86℃
  : realize robust and long life time.
- **Dual SHFS™**(Simplified Hi-Efficiency Freezing System) can freeze down to −95℃ and High-stability system can be offered.
  : If one of SHFS™ fails in operation, the other SHFS still works and maintains −80℃
- Automatic Vacuum Breaker - Easy to re-open the Door.
- Robust & Flexible design of Door Handle   • External Temp. Sensor Hole
- Easy Monitoring and Control - Eye level Controller
- CFC-free Refrigerants are used
- Use of Block Condenser removes filter and causes of related failure.
- Filter-free Mechanism lowers heat generated by the compressor
- Easy Maintenance and Improved Performance
- High-quality Insulation Panel and Inner Doors ensure defrosting around outer surface.
- Built in Standard Warning and Alarm Functions
- RS232 Communication Link and a Remote Control Software are supported
- KGMP Certified   • CE & RoHS Certified
- PL(Product Liability) Insurance

◼◼◼ Specification

Capacity & Model		308 Lit. "SWUF-D300"	393 Lit. "SWUF-D400"	503 Lit. "SWUF-D500"	714 Lit. "SWUF-D700"
Freezing System		Dual Simplified Hi-Effiency Freezing System(Dual SHFS™)			
Temp.	Range	−95℃ ~ −65℃			
		at room temperature of 30℃ and humidity of 70%			
	Sensor	PT100 Sensor			
Compressor		Hermetic Type			
Condenser Type		Block Condenser, No Pin, Filter Free Mechanism			
Refrigerant		HFC (CFC Free Refrigerant System)			
Controller & Display		7″ Full Touch Screen TFT LCD (Smart-Lab™ Controller)			
Shelves		Included 3 Stainless Steel Shelves			
Max. Q'ty of Racks		12pcs of 15(3×5)-Placed Rack (RFU3040)	16pcs of 15(3×5)-Placed Rack (RFU3040)	16pcs of 20(4×5)-Placed Rack (RFU50)	24pcs of 20(4×5)-Placed Rack (RFU50)
Material	Internal	Stainless Steel (#304)			
	External	Powder Coated Steel Plate			
	Inner Door	Powder Coated Stainless Steel (#304)			
Others		KGMP Certified, CE & RoHS Certified PL(Product Liability) Insurance, CFC-Free Refrigerants Touch-Screen TFT LCD Smart-Lab™ Controller Built in Standard Warning and Alarm Functions RS232 Communication Link, Remote Control Software			
Chamber Dimension (w×d×h)	Internal(mm)	470×500×1,310	600×500×1,310	600×640×1,310	880×620×1,310
	External(mm)	710×750×1,900	840×750×1,900	840×890×1,900	1,120×870×1,900
Net Weight		220 kg	260 kg	300 kg	320 kg
Packing Size (w×d×h) (mm) & Gross Weight		110×110×222	116×116×222	116×124×222	140×140×221
		300 kg	352 kg	352 kg	442 kg
Power Consumption		720 W	1.6 kW	1.6 kW	1.6 kW
Power Supply & Cord Plug*		1 Phase, AC 120V, 60Hz or AC 230V, 50 / 60Hz, with Cord/Plug			

∗ Other Specifications are available upon Customer's Request.
∗∗ 50Hz condition may cause 5% of temperature increase at −95℃ (SWUF-D700)

■■■ Ordering Information

DH.SWUF01300	Upright Type −95 ℃ Freezer, **SWUF-D300,** −95 ℃~ −65 ℃, 308 Lit., **230V**, with Power Cord
DH.SWUF01400	Upright Type −95 ℃ Freezer, **SWUF-D400,** −95 ℃~ −65 ℃, 393 Lit., **230V**, with Power Cord
DH.SWUF01500	Upright Type −95 ℃ Freezer, **SWUF-D500,** −95 ℃~ −65 ℃, 503 Lit., **230V**, with Power Cord
DH.SWUF01700	Upright Type −95 ℃ Freezer, **SWUF-D700,** −95 ℃~ −65 ℃, 714 Lit., **230V**, with Power Cord
DH.SWUF02300	Upright Type −95 ℃ Freezer, **SWUF-D300,** Same as Above, but only **120V**
DH.SWUF02400	, **SWUF-D400,** Same as Above, but only **120V**
DH.SWUF02500	, **SWUF-D500,** Same as Above, but only **120V**
DH.SWUF02700	, **SWUF-D700,** Same as Above, but only **120V**

Validation (IQ, OQ) Service

DH.SWUF31300	Validation Service(IQ, OQ), **SUFDV300**, for **SWUF-D300**
DH.SWUF31400	, **SUFDV400**, for **SWUF-D400**
DH.SWUF31500	, **SUFDV500**, for **SWUF-D500**
DH.SWUF31700	, **SUFDV700**, for **SWUF-D700**

Rack System

※ Validation(IQ&OQ) Service

Providing IQ / OQ Documentation Service

- Installation Qualification & Operation Qualification
- Operation of High-Performance Validation Instrument
- Test and Documentation for Accuracy and Uniformity

〈Temp. Chart〉

7″ Full Touch Screen TFT LCD(Smart-Lab™ Controller)

It is possible to monitor and control the Smart-Lab™ equipment through all smart phone, tablet and web without restraint of time and place.

WiRe™ App & Web Service

Upright Type −86℃ ULT Freezer
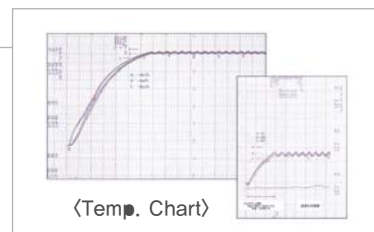
Innovative Technology to Improve the Quality of Human Life

Wisd. SmartCryo™ SWUF Upright Type −86℃ ULT Freezer, −86℃~−65℃

with Smart-Lab™ System, SHFS™, Non-Freon Refrigerants, Automatic Vacuum Releasing System, 308-/ 393-/ 503-/714-Lit.

NEW

CE
RoHS Compliance

7-inch Smart-Lab™ Controller

Upright Type −95℃ Freezer (SWUF-300)

Smart−Lab™ System and SHFS™

Application & Features

- Ergonomic 7″ Full Touch Screen TFT LCD(Smart-Lab™ Controller)
- WiRe™ App & Web Service.　　• Storage Management Function
- Self-Diagnostic Function　　• Automatic Data Recording
- Internet Connectivity with WiFi
- **Simplified Hi-Efficiency Freezing System** can freeze down to −86℃
  : realize robust and long life time.
- Automatic Vacuum Breaker - Easy to re-open the Door.
- Robust & Flexible design of Door Handle　　• External Temp. Sensor Hole
- Easy Monitoring and Control - Eye level Controller
- CFC-free Refrigerants are used
- Use of Block Condenser removes filter and causes of related failure.
- Filter-free Mechanism lowers heat generated by the compressor
- Easy Maintenance and Improved Performance
- High-quality Insulation Panel and Inner Doors ensure defrosting around outer surface.
- Built in Standard Warning and Alarm Functions
- RS232 Communication Link and a Remote Control Software are supported
- CE & RoHS Certified
- PL (Product Liability) Insurance

Specification

Capacity & Model		308 Lit. "SWUF-300"	393 Lit. "SWUF-400"	503 Lit. "SWUF-500"	714 Lit. "SWUF-700"
Freezing System		Simplified Hi-Effiency Freezing System(SHFS™)			
Temp.	Range	−86℃ ~ −65℃			
		at room temperature of 30℃ and humidity of 70%			
	Sensor	PT100 Sensor			
Compressor		Hermetic Type			
Condenser Type		Block Condenser, No Pin, Filter Free Mechanism			
Refrigerant		HFC (CFC Free Refrigerant System)			
Controller & Display		7″ Full Touch Screen TFT LCD (Smart-Lab™ Controller)			
Shelves		Included 3 Stainless Steel Shelves			
Max. Q'ty of Racks		12pcs of 15(3×5)-Placed Rack (RFU3040)	16pcs of 15(3×5)-Placed Rack (RFU3040)	16pcs of 20(4×5)-Placed Rack (RFU50)	24pcs of 20(4×5)-Placed Rack (RFU50)
Material	Internal	Stainless Steel (#304)			
	External	Powder Coated Steel Plate			
	Inner Door	Powder Coated Stainless Steel (#304)			
Others		CE & RoHS Certified, PL(Product Liability) Insurance Touch-Screen TFT LCD Smart-Lab™ Controller CFC-Free Refrigerants Built in Standard Warning and Alarm Functions RS232 Communication Link, Remote Control Software			
Chamber Dimension (w×d×h)	Internal(mm)	470×500×1,310	600×500×1,310	600×640×1,310	880×620×1,310
	External(mm)	710×750×1,900	840×750×1,900	840×890×1,900	1,120×870×1,900
Net Weight		180 kg	210 kg	240 kg	320 kg
Packing Size (w×d×h) (mm) & Gross Weight		110×110×222	116×116×222	116×124×222	140×140×221
		275 kg	296 kg	327 kg	442 kg
Power Consumption		360 W	780 W	780 W	1.6 kW
Power Supply & Cord Plug*		1 Phase, AC 120V, 60Hz or AC 230V, 50 / 60Hz, with Cord/Plug			

＊Other Specifications are available upon Customer's Request.
＊＊50Hz condition may cause 5% of temperature increase at −95℃ (SWUF-700)

■■ Ordering Information

DH.SWUF00300 Upright Type −86 ℃ Freezer, **SWUF-300,** −86 ℃~ −65 ℃, 308 Lit., **230V**, with Power Cord

DH.SWUF00400 Upright Type −86 ℃ Freezer, **SWUF-400,** −86 ℃~ −65 ℃, 393 Lit., **230V**, with Power Cord

DH.SWUF00500 Upright Type −86 ℃ Freezer, **SWUF-500,** −86 ℃~ −65 ℃, 503 Lit., **230V**, with Power Cord

DH.SWUF00700 Upright Type −86 ℃ Freezer, **SWUF-700,** −86 ℃~ −65 ℃, 714 Lit., **230V**, with Power Cord

DH.SWUF03300 Upright Type −86 ℃ Freezer, **SWUF-300,** Same as Above, but only **120V**
DH.SWUF03400 , **SWUF-400,** Same as Above, but only **120V**
DH.SWUF03500 , **SWUF-500,** Same as Above, but only **120V**
DH.SWUF03700 , **SWUF-700,** Same as Above, but only **120V**

Rack System

Validation (IQ, OQ) Service

DH.SWUF30300 Validation Service(IQ, OQ), **SUFV300**, for **SWUF-300**
DH.SWUF30400 , **SUFV400**, for **SWUF-400**
DH.SWUF30500 , **SUFV500**, for **SWUF-500**
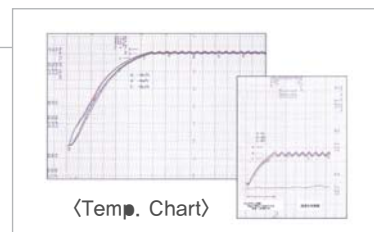**DH.SWUF30700** , **SUFV700**, for **SWUF-700**

※ Validation(IQ&OQ) Service

Providing IQ / OQ Documentation Service

- Installation Qualification & Operation Qualification
- Operation of High-Performance Validation Instrument
- Test and Documentation for Accuracy and Uniformity
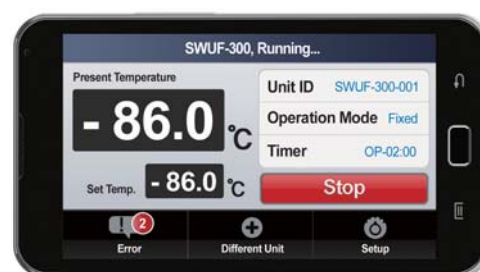

〈Temp. Chart〉

7˝ Full Touch Screen TFT LCD(Smart-Lab™ Controller)

It is possible to monitor and control the Smart-Lab™ equipment through all smart phone, tablet and web without restraint of time and place.

WiRe™ App & Web Service

Upright Personal Type −86℃ ULT Freezer

Wisd.✍ *SmartCryo*™ *SWUF* Upright Personal Type −86℃ ULT Freezer, −86℃～−65℃
with Smart-Lab™ System(SWUF-80), SHFS™(SWUF-80), Non-Freon Refrigerants, , Non-Freon Refrigerants, 25-/82-Lit.

NEW

CE
RoHS Compliance

7-inch Smart-Lab™ Controller

82Lit.

Upright Personal Type −86℃ Freezer (SWUF-80)

※ Design of product will be changed.

CE
RoHS Compliance

25Lit.

Upright Personal Type −86℃ Freezer (WUF-25)

Smart−Lab™System(only SWUF-80 model) and SHFS™

Application & Features

- Personal type Compact Ultra Low Temperature Freezer
- Ergonomic 7″ Full Touch Screen TFT LCD (Smart-Lab™ Controller) (only SWUF-80 model)
- WiRe™ App & Web Service (only SWUF-80 model) .
- Storage Management Function (only SWUF-80 model)
- Self-Diagnostic Function (only SWUF-80 model)
- Automatic Data Recording (only SWUF-80 model)
- Internet Connectivity with WiFi (only SWUF-80 model)
- **Simplified Hi-Efficiency Freezing System** can freeze down to −86℃ : realize robust and long life time.
- Robust & Flexible design of Door Handle
- CFC-free Refrigerants are used
- Use of Block Condenser removes filter and causes of related failure.
- Filter-free Mechanism lowers heat generated by the compressor
- Easy Maintenance and Improved Performance
- High-quality Insulation Panel and Inner Doors ensure defrosting around outer surface.
- Built in Standard Warning and Alarm Functions
- RS232 Communication Link and a Remote Control Software are supported
- CE & RoHS Certified
- PL(Product Liability) Insurance

Specification

Capacity & Model		25 Lit. "WUF-25"	80 Lit. "SWUF-80"
Freezing System		Simplified Hi-Effiency Freezing System(SHFS™)	
Temp.	Range	−86℃～−65℃	
		at room temperature of 30℃ and humidity of 70%	
	Sensor	PT100 Sensor	
Compressor		Hermetic Type	
Condenser Type		Block Condenser, No Pin, Filter Free Mechanism	
Refrigerant		HFC (CFC Free Refrigerant System)	
Controller		Digital Feedback Controller	7″ Full Touch Screen TFT LCD
Shelves		None	Included 1 Stainless Steel Shelf
Max. Q'ty of Racks		None, Only 10~15 boxes are applicable	4pcs of 12(3x4)-Placed Rack (RFU8)
Material	Internal	Stainless Steel (#304)	
	External	Powder Coated Steel Plate	
	Inner Door	Powder Coated Stainless Steel (#304)	
Others		CE & RoHS Certified PL(Product Liability) Insurance Touch-Screen TFT LCD Smart-Lab™ Controller (SWUF-80) CFC-Free Refrigerants Built in Standard Warning and Alarm Functions RS232 Communication Link, Remote Control Software	
Dimension (w ×d ×h)	Internal (mm)	200×420×300	340×485×520
	External (mm)	390×627×785	530×687×1,060
Weight		69 kg	102 kg
Packing Size (w ×d ×h) (mm) & Gross Weight		880×860×1,300	960×760×1,350
		52 kg	60 kg
Power Consumption		250 W	
Power Supply & Cord Plug*		1 Phase, AC 120V, 60Hz or AC 230V, 50 / 60Hz, with Cord/Plug	

* Other Specifications are available upon Customer's Request.

■■■ Ordering Information

DH.WUF0032   Upright Personal Type −86℃ Freezer, **WUF-25,** −86℃~ −65℃, 25 Lit., **230V,** with Power Cord

DH.SWUF0075   Upright Personal Type −86℃ Freezer, **SWUF-80,** −86℃~ −65℃, 82 Lit., **230V,** with Power Cord

DH.WUF0132   Upright Personal Type −86℃ Freezer, **WUF-25,** Same as Above, but only **120V**

DH.SWUF0175   , **SWUF-80,** Same as Above, but only **120V**

Validation (IQ, OQ) Service

DH.WUF30032   Validation Service(IQ, OQ), **UFV32,** for **WUF-25**

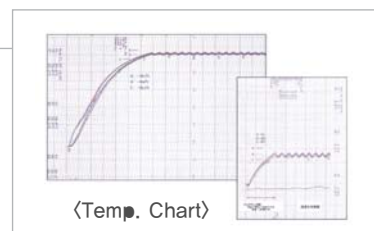**DH.SWUF30075**   , **SUFV75,** for **SWUF-80**
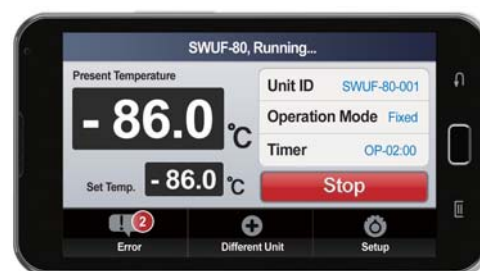

Rack System

※ Validation(IQ&OQ) Service

Providing IQ / OQ Documentation Service

- Installation Qualification & Operation Qualification
- Operation of High-Performance Validation Instrument
- Test and Documentation for Accuracy and Uniformity

〈Temp. Chart〉

7˝ Full Touch Screen TFT LCD(Smart-Lab™ Controller)

It is possible to monitor and control the Smart-Lab™ equipment through all smart phone, tablet and web without restraint of time and place.

WiRe™ App & Web Service

Chest Type −95℃ ULT Freezer

Wisd. SmartCryo™ SWUF-D Chest Type −95℃ ULT Freezer, −95℃～−65℃
with Smart-Lab™ System, Dual SHFS™, Non-Freon Refrigerants,, 350-/ 500-/ 600-Lit.

NEW

CE RoHS Compliance

Touch Screen TFT LCD Controller

Chest Type −95℃ Freezer (SWUF-D350C)

※ Design of product will be changed.

Stainless Steel

Powder Coated Steel Plate

Chest Type −95℃ Freezer (SWUF-D350C)

Smart−Lab™System and Dual SHFS™

▪▪▪ Application & Features

- Ergonomic 7″ Full Touch Screen TFT LCD(Smart-Lab™ Controller)
- WiRe™ App & Web Service. • Storage Management Function
- Self-Diagnostic Function • Automatic Data Recording
- Internet Connectivity with WiFi
- **Simplified Hi-Efficiency Freezing System** can freeze down to −86℃
  : realize robust and long life time.
- **Dual SHFS™**(Simplified Hi-Efficiency Freezing System) can freeze down to
  −95℃ and High-stability system can be offered.
  : If one of SHFS™ fails in operation, the other SHFS™ still works and maintains −80℃
- Robust & Flexible design of Door Handle
- CFC-free Refrigerants are used
- Use of Block Condenser removes filter and causes of related failure.
- Filter-free Mechanism lowers heat generated by the compressor
- Easy Maintenance and Improved Performance
- High-quality Insulation Panel and Inner Doors ensure defrosting around outer surface.
- Built in Standard Warning and Alarm Functions
- RS232 Communication Link and a Remote Control Software are supported
- CE & RoHS Certified
- PL (Product Liability) Insurance

▪▪▪ Specification

Capacity & Model		350 Lit. "SWUF-D350C"	500 Lit. "SWUF-D500C"	600 Lit. "SWUF-D600C"
Freezing System		Dual Simplified Hi-Effiency Freezing System(Dual SHFS™)		
Temp.	Range	−95℃～−65℃		
		at room temperature of 30℃ and humidity of 70%		
	Sensor	PT100		
Compressor		Hermetic Type		
Condenser Type		Block Condenser, No Pin, Filter Free Mechanism		
Refrigerant		HFC (CFC Free Refrigerant System)		
Controller & Display		7″ Full Touch Screen TFT LCD (Smart-Lab™ Controller)		
Max. Q'ty of Racks		21pcs of 11(1×11)-Placed Rack & 3pcs of 7(1×7)-Placed Rack	30pcs of 11(1×11)-Placed Rack & 3pcs of 7(1×7)-Placed Rack	36pcs of 11(1×11)-Placed Rack & 3pcs of 7(1×7)-Placed Rack
Material	Internal	Stainless Steel (#304)		
	External	Powder Coated Steel Plate		
Others		CE & RoHS Certified, PL(Product Liability) Insurance Touch-Screen TFT LCD Controller CFC-Free Refrigerants Built in Standard Warning and Alarm Functions RS232 Communication Link, Remote Control Software		
Chamber Dimension (w ×d ×h)	Internal (mm)	1,050×470×665	1,500×470×665	1,800×470×665
	External (mm)	1,690×895×1,155	2,140×895×1,155	2,440×895×1,155
Net Weight		230 kg	270 kg	310 kg
Packing Size (w ×d ×h) (mm) & Gross Weight		1,900×1,100×1,400	2,300×1,100×1,400	2,600×1,100×1,400
		310 kg	362 kg	402 kg
Power Consumption		720 W	1.6 kW	1.6 kW
Power Supply & Cord Plug*		1 Phase, AC 120V, 60Hz or AC 230V, 50 / 60Hz, with Cord/Plug		

＊Other Specifications are available upon Customer's Request.

■■■ Ordering Information

DH.SWUF04350   Chest Type −95 ℃ Freezer, **SWUF-D350C,** −95 ℃~ −65 ℃, 350 Lit., **230V**, with Power Cord
DH.SWUF04500   , **SWUF-D500C,** −95 ℃~ −65 ℃, 500 Lit., **230V**, with Power Cord
DH.SWUF04600   , **SWUF-D600C,** −95 ℃~ −65 ℃, 600 Lit., **230V**, with Power Cord

DH.SWUF05350   Chest Type −95 ℃ Freezer, **SWUF-D350C,** Same as Above, but only **120V**
DH.SWUF05500   , **SWUF-D500C,** Same as Above, but only **120V**
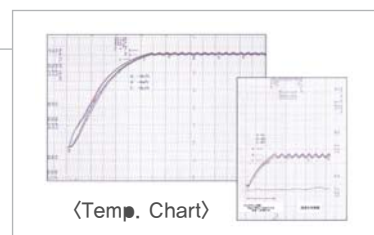**DH.SWUF05600**   , **SWUF-D600C,** Same as Above, but only **120V**

Validation (IQ, OQ) Service

DH.SWUF32350   Validation Service(IQ, OQ), **SUFDV350C**, for **SWUF-D350C**
DH.SWUF32500   , **SUFDV500C**, for **SWUF-D500C**
DH.SWUF32600   , **SUFDV600C**, for **SWUF-D600C**
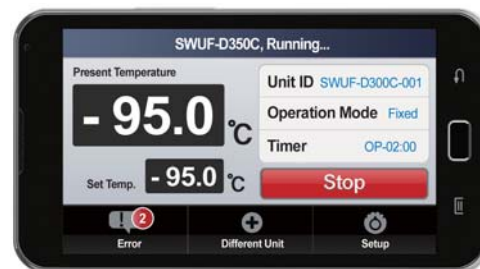
※ Validation(IQ&OQ) Service

Providing IQ / OQ Documentation Service

- Installation Qualification & Operation Qualification
- Operation of High-Performance Validation Instrument
- Test and Documentation for Accuracy and Uniformity

⟨Temp. Chart⟩

7″ Full Touch Screen TFT LCD(Smart-Lab™ Controller)

It is possible to monitor and control the Smart-Lab™ equipment through all smart phone, tablet and web without restraint of time and place.

WiRe™ App & Web Service

Chest Type −86℃ ULT Freezer

Wisd23 *SmartCryo*™ *SWUF* Chest Type −86℃ ULT Freezer, −86℃～−65℃

with Smart-Lab™ System, SHFS™, Non-Freon Refrigerants,, 350-/ 500-/ 600-Lit.

NEW

CE RoHS Compliance

Chest Type −86℃ Freezer
(SWUF-350C)

※ Design of product will be changed.

Stainless Steel

Powder Coated Steel Plate

Chest Type −86℃ Freezer
(SWUF-350C)

❄ Smart−Lab™System and SHFS™

■■■ Application & Features

- Ergonomic 7″ Full Touch Screen TFT LCD(Smart-Lab™ Controller)
- WiRe™ App & Web Service.
- Storage Management Function
- Self-Diagnostic Function
- Automatic Data Recording
- Internet Connectivity with WiFi
- **Simplified Hi-Efficiency Freezing System** can freeze down to −86℃
  : realize robust and long life time.
- Robust & Flexible design of Door Handle
- CFC-free Refrigerants are used
- Use of Block Condenser removes filter and causes of related failure.
- Filter-free Mechanism lowers heat generated by the compressor
- Easy Maintenance and Improved Performance
- High-quality Insulation Panel and Inner Doors ensure defrosting around outer surface.
- Built in Standard Warning and Alarm Functions
- RS232 Communication Link and a Remote Control Software are supported
- CE & RoHS Certified
- PL(Product Liability) Insurance

■■■ Specification

Capacity & Model		350 Lit. "SWUF-350C"	500 Lit. "SWUF-500C"	600 Lit. "SWUF-600C"
Freezing System		Simplified Hi-Effiency Freezing System(SHFS™)		
Temp.	Range	−86℃～−65℃ at room temperature of 30℃ and humidity of 70%		
	Sensor	PT100		
Compressor		Hermetic Type		
Condenser Type		Block Condenser, No Pin, Filter Free Mechanism		
Refrigerant		HFC (CFC Free Refrigerant System)		
Controller & Display		7″ Full Touch Screen TFT LCD (Smart-Lab™ Controller)		
Max. Q'ty of Racks		21pcs of 11(1×11)-Placed Rack & 3pcs of 7(1×7)-Placed Rack	30pcs of 11(1×11)-Placed Rack & 3pcs of 7(1×7)-Placed Rack	36pcs of 11(1×11)-Placed Rack & 3pcs of 7(1×7)-Placed Rack
Material	Internal	Stainless Steel (#304)		
	External	Powder Coated Steel Plate		
Others		CE & RoHS Certified, PL(Product Liability) Insurance Touch-Screen TFT LCD Controller CFC-Free Refrigerants Built in Standard Warning and Alarm Functions RS232 Communication Link, Remote Control Software		
Chamber Dimension (w ×d ×h)	Internal (mm)	1,050×470×665	1,500×470×665	1,800×470×665
	External (mm)	1,690×895×1,155	2,140×895×1,155	2,440×895×1,155
Net Weight		190 kg	220 kg	250 kg
Packing Size (w ×d ×h) (mm) & Gross Weight		1,900×1,100×1,400	2,300×1,100×1,400	2,600×1,100×1,400
		285 kg	306 kg	337 kg
Power Consumption		360 W	780 W	780 W
Power Supply & Cord Plug*		1 Phase, AC 120V, 60Hz or AC 230V, 50 / 60Hz, with Cord/Plug		

＊Other Specifications are available upon Customer's Request.

Ordering Information

DH.SWUF06350	Chest Type −86 ℃ Freezer, **SWUF-350C,** −86 ℃~ −65 ℃, 350 Lit., **230V**, with Power Cord
DH.SWUF06500	, **SWUF-500C,** −86 ℃~ −65 ℃, 500 Lit., **230V**, with Power Cord
DH.SWUF06600	, **SWUF-600C,** −86 ℃~ −65 ℃, 600 Lit., **230V**, with Power Cord
DH.SWUF07350	Chest Type −86 ℃ Freezer, **SWUF-350C,** Same as Above, but only **120V**
DH.SWUF07500	, **SWUF-500C,** Same as Above, but only **120V**
DH.SWUF07600	, **SWUF-600C,** Same as Above, but only **120V**

Validation (IQ, OQ) Service

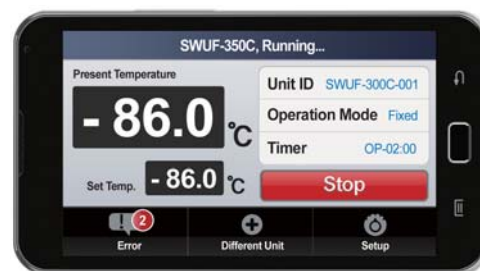|	
DH.SWUF33350	Validation Service(IQ, OQ), **SFV350C**, for **SWUF-350C**
DH.SWUF33500	, **SFV500C**, for **SWUF-500C**
DH.SWUF33600	, **SFV600C**, for **SWUF-600C**

※ Validation(IQ&OQ) Service

Providing IQ / OQ Documentation Service

- Installation Qualification & Operation Qualification
- Operation of High-Performance Validation Instrument
- Test and Documentation for Accuracy and Uniformity

〈Temp. Chart〉

7″ Full Touch Screen TFT LCD(Smart-Lab™ Controller)

It is possible to monitor and control the Smart-Lab™ equipment through all smart phone, tablet and web without restraint of time and place.

WiRe™ App & Web Service

Economic Chest Type −86℃ ULT Freezer

Wisd.23 WiseCryo™ WUF Economic Chest Type −86℃ ULT Freezer, −86℃~−65℃
Non-Freon Refrigerants, 136-/ 237-/ 314-/ 375-/ 438-Lit.

CE RoHS Compliance

Economic Chest Type −86℃ Freezer (WUF-31)

Aluminum Plate

Steel Plate with Acrylic Acid Resin Coating

Economic Chest Type −86℃ Freezer (WUF-31)

SHFS™ Simplified Hi−Efficiency Freezing System

■■ Application & Features

- **Simplified Hi-Efficiency Freezing System** can freezes down to −86℃
  : Can Realize Robust and Long Life Time
- CFC-free Refrigerants are Used
- Use of Block Condenser Removes Filter and Causes of Related Failure
- Filter-Free Mechanism Lowers Heat Generated by the Compressor
- Easy Maintenance and Improved Performance
- High-quality Insulation Panel Ensure Defrosting Around Outer Surface
- Built in Standard Warning and Alarm Functions
- CE & RoHS Certified
- PL (Product Liability) Insurance

■■ Specification

Capacity & Model		136 Lit. "WUF-11"	237 Lit. "WUF-21"	314 Lit. "WUF-31"	375 Lit. "WUF-41"	438 Lit. "WUF-51"
Freezing System		Simplified Hi-Effiency Freezing System(SHFS™)				
Temp.	Range	−86℃ ~ −65℃ at the room temperature of 30℃ and the humidity of 70%				
	Sensor	PT100 Sensor				
Compressor		Hermetic Type				
Condenser Type		Block Condenser, No Pin, Filter Free Mechanism				
Refrigerant		HFC (CFC Free Refrigerant System)				
Controller		Digital Feedback Controller				
Max. Q'ty of Racks		6pcs of 11(1x11)-Placed Rack & 3pcs of 7(1x7)-Placed Rack	12pcs of 11(1x11)-Placed Rack & 3pcs of 7(1x7)-Placed Rack	18pcs of 11(1x11)-Placed Rack & 3pcs of 7(1x7)-Placed Rack	21pcs of 11(1x11)-Placed Rack & 3pcs of 7(1x7)-Placed Rack	27pcs of 11(1x11)-Placed Rack & 3pcs of 7(1x7)-Placed Rack
Material	Internal	Aluminum Plate				
	External	Steel Plate with Acrylic Acid Resin Coating				
Dimension (w ×d ×h)	Internal (mm)	520×450×680	850×450×680	1,100×450×680	1,300×450×680	1,500×450×680
	External (mm)	720×730×860	1,050×730×860	1,300×730×860	1,500×730×860	1,700×730×860
Weight		45 kg	55 kg	67 kg	73 kg	82 kg
Packing Dimension (w ×d ×h) (cm)		90×94×115	128×94×115	158×94×115	180×94×115	205×94×115
Gross Weight		98 kg	100 kg	120 kg	126 kg	135 kg
Power Consumption		300W	400W	450W	500W	550W
Power Supply& Cord Plug*		1 Phase, AC 120V, 60Hz or AC 230V, 50 / 60Hz, with Cord/Plug				

＊Other Specifications are available upon Customer's Request.

▪▪▫ Ordering Information

DH.WUF00011	Economic Chest Type -86℃ Freezer, **WUF-11,** −86℃~ −65℃, 136 Lit., **230V**, with Power Cord
DH.WUF00021	, **WUF-21,** −86℃~ −65℃, 273 Lit., **230V**, with Power Cord
DH.WUF00031	, **WUF-31,** −86℃~ −65℃, 314 Lit.. **230V**, with Power Cord
DH.WUF00041	, **WUF-41,** −86℃~ −65℃, 375 Lit., **230V**, with Power Cord
DH.WUF00051	, **WUF-51,** −86℃~ −65℃, 438 Lit., **230V**, with Power Cord
DH.WUF00111	Economic Chest Type -86℃ Freezer, **WUF-11,** Same as Above, but only **120V**
DH.WUF00121	, **WUF-21,** Same as Above, but only **120V**
DH.WUF00131	, **WUF-31,** Same as Above, but only **120V**
DH.WUF00141	, **WUF-41,** Same as Above, but only **120V**
DH.WUF00151	, **WUF-51,** Same as Above, but only **120V**

Validation (IQ, OQ) Service

DH.WUF30011	Validation Service(IQ, OQ), **UFV11**, for **WUF-11**
DH.WUF30021	, **UFV21**, for **WUF-21**
DH.WUF30031	, **UFV31**, for **WUF-31**
DH.WUF30041	, **UFV41**, for **WUF-41**
DH.WUF30051	, **UFV51**, for **WUF-51**

※ Validation(IQ&OQ) Service

Providing IQ / OQ Documentation Service

- Installation Qualification & Operation Qualification
- Operation of High-Performance Validation Instrument
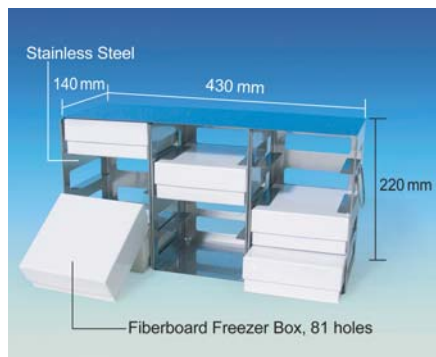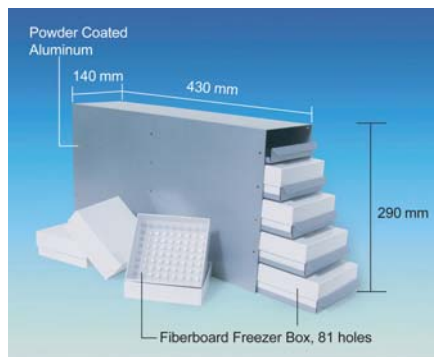- Test and Documentation for Accuracy and Uniformity
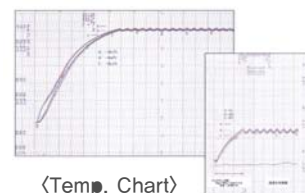
⟨Temp. Chart⟩

WiseCryo™ Freezer Accessories

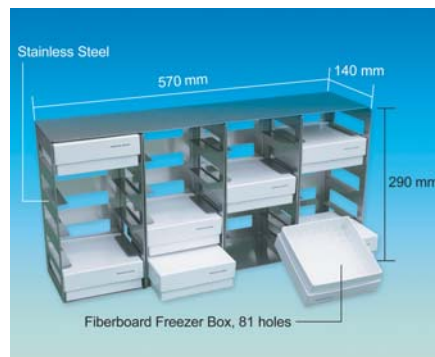## Wisd.ℬ *WiseCryo*™ Rack System for Freezer

■■■ Rack System for Upright type Freezer

12 (3 ×4) -Placed Rack, Side Access
(RFU8SA)
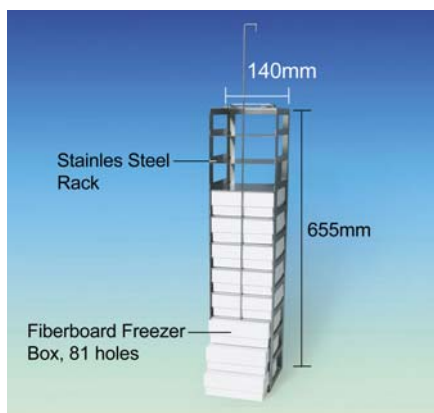
15 (3 ×5) -Placed Rack,
Sliding Drawer **(RFU3040SD)**

20 (4 ×5) -Placed Rack, Side Access
(RFU50SA)

Model	RFU8SD	RFU8SA	RFU3040SD	RFU3040SA	RFU50SD	RFU50SA
Applicable Freezer	For Upright type					
	SWUF-80		SWUF-(D)300/400		SWUF-(D)500/700	
Q'ty of Available Boxes	12ea(3 ×4)		15ea(3 ×5)		20ea(4 ×5)	
Dimension (w ×d ×h mm)	140 ×430 ×220		140 ×430 ×290		140 ×570 ×290	
Rack Type	Sliding Drawer	Side Access	Sliding Drawer	Side Access	Sliding Drawer	Side Access
Material	Stainles Steel					

■■■ Rack System for Chest type Freezer

7(1 ×7) -Placed Rack,
Side Access **(RFC7)**

11(1 ×11) -Placed Rack,
Side Access **(RFC11)**

Hard Board Freezer Box, 81 holes, with
Hard Board Divider or Polypropylene Divider

Model	RFC7	RFC11
Applicable Freezer	For Chest type	
	SWUF-(D)350C/500C/600C, WUF-11/21/31/41/51	
Q'ty of Available Boxes	7ea(1 ×7)	11ea(1 ×1)
Dimension (w ×d ×h mm)	140 ×140 ×385	140 ×140 ×665
Rack Type	Side Access	Side Access
Material	Stainless Steel	Stainless Steel

■■■ Ordering Information

For Upright type

DH.RFU8SD[*]   Rack, **RFU8SD**, Sliding Drawer, without boxes, 12 places,
Stainless Steel, for **SWUF-80**

DH.RFU8SA[*]   Rack, **RFU8SA**, Side Access, without boxes, 12 places,
Stainless Steel, for **SWUF-80**

DH.RFU3040SD[*]   Rack, **RFU3040SD**, Sliding Drawer, without boxes, 15 places,
Stainless Steel, for **SWUF-(D)300/400**

DH.RFU3040SA[*]   Rack, **RFU3040SA**, Side Access, without boxes, 15 places,
Stainless Steel, for **SWUF-(D)300/400**

DH.RFU50SD[*]   Rack, **RFU50SD**, Sliding Drawer, without boxes, 20 places,
Stainless Steel, for **SWUF-(D)500/700**

DH.RFU50SA[*]   Rack, **RFU50SA**, Side Access, without boxes, 20 places,
Stainless Steel, for **SWUF-(D)500/700**

Rack System

For Chest type

DH.RFC11[*]   Rack, **RFC11,** 11 Places, Stainless Steel, For **all Chest Type Freezer**
DH.RFC7[*]   Rack, **RFC7,**   7 Places, Stainless Steel, For **all Chest Type Freezer**

[*]-marks : without Fiberboard Freezer Box

Hard board Freezer Box

C11.001   Hard board Freezer Box, 81holes, with Hard Board Divider, w127 ×d127 ×h52mm
C11.002   , with PolyPropylene Divider, w127 ×d127 ×h52mm

WiseCryo™ Freezer Accessories

Wisd *WiseCryo*™ Optional Common Accessories

■■ Temperature Chart Recorder

- 7days temperature history can be recorded on a chart sheet. (60 chart sheets are provided as standard)
- Digital display for Min/Max during operation.
- Recordable temperature range : -100 to 0℃
- Chart size : 152 mm

Temperature Chart Recorder **(KT622)**

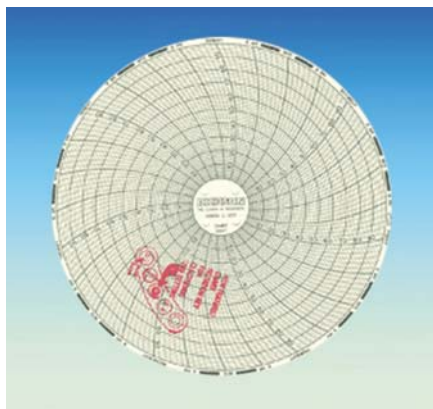

Chart Paper **(C657)**
(60 charts for 420 days)

Chart Recorder Replacement Pens,
6ea, Red color **(P222)**

Remote Alarm System **(RWAS)**

■■ Remote Alarm System

- Emergency calling system at the situation of abnormal operation(over -65℃) in a chamber.
- Up to 5 mobile numbers can be saved

LCO2 back up system **(LCO2B)**

■■ LCO2 Back up System - without LCO2 Gas Tank

- Connection kit between unit and LCO2 gas vessel for maintaining at -65℃ in case of power failure or unit breakdown.
- The temperature duration time depends on volume of LCO2 gas vessel.

Ordering Information

DH.KT622	Temperature Chart Recorder, **KT622,** with **C657** Chart Paper
DH.C657	Chart Paper, **C657**, 60 Charts per one box for 420 days recording in KT622
DH.P222	Chart Recorder Replacement Pens, **P222,** 6ea Red color, for **KT622**
DH.LCO2B	LCO$_2$ Back up System, **LCO2B**
DH.RWAS	Remote Wire/Wireless Alarm System, **RWAS**

Wisd. *WiseCryo*™ Refrigerant Charging System

Refrigerant Charging Kit & Charging Tank

- Designed for one stop A/S service (Vacuuming & Charging) of SWUF / SWUF-D model.
- Refrigerant Charging Tank is subject to purchasing as optional accessory.

Refrigerant Charging Kit

Refrigerant Charging Kit(Rear)
- Built in Charging Tank

Capacity : 3.4 Lit.

Refrigerant Charging Tank

Ordering Information

DH.WRCK1100	Refrigerant Charging Kit, for all SWUF Series, w550 ×d650 × h850 (without Charging Tank)
DH.WRCK1300*	Refrigerant Charging Tank, **RCK1300**, ϕ142 × h440, for **SWUF-D300**
DH.WRCK1400*	, **RCK1400**, ϕ142 × h440, for **SWUF-D400**
DH.WRCK1500*	, **RCK1500**, ϕ142 × h440, for **SWUF-D500**
DH.WRCK1700*	, **RCK1700**, ϕ142 × h440, for **SWUF-D700**
DH.WRCK0300	Refrigerant Charging Tank, **RCK0300**, ϕ142 × h440, for **SWUF-300**
DH.WRCK0400	, **RCK0400**, ϕ142 × h440, for **SWUF-400**
DH.WRCK0500	, **RCK0500**, ϕ142 × h440, for **SWUF-500**
DH.WRCK0700	, **RCK0700**, ϕ142 × h440, for **SWUF-700**
DH.WRCK2350*	Refrigerant Charging Tank, **RCK2350**, ϕ142 × h440, for **SWUF-D350C**
DH.WRCK2500*	, **RCK2500**, ϕ142 × h440, for **SWUF-D500C**
DH.WRCK2600*	, **RCK2600**, ϕ142 × h440, for **SWUF-D600C**
DH.WRCK3350	Refrigerant Charging Tank, **RCK3350**, ϕ142 × h440, for **SWUF-350C**
DH.WRCK3500	, **RCK3500**, ϕ142 × h440, for **SWUF-500C**
DH.WRCK3600	, **RCK3600**, ϕ142 × h440, for **SWUF-600C**
DH.WRCK0025	Refrigerant Charging Tank, **RCK0025**, ϕ142 × h440, for **WUF-25**
DH.WRCK0080	, **RCK0080**, ϕ142 × h440, for **SWUF-80**
DH.WRCK0011	Refrigerant Charging Tank, **RCK0011**, ϕ142 × h440, for **WUF-11**
DH.WRCK0021	, **RCK0021**, ϕ142 × h440, for **WUF-21**
DH.WRCK0031	, **RCK0031**, ϕ142 × h440, for **WUF-31**
DH.WRCK0041	, **RCK0041**, ϕ142 × h440, for **WUF-41**
DH.WRCK0051	, **RCK0051**, ϕ142 × h440, for **WUF-51**

∗-marks : The ordering number of Charging Tank is for one freezing system only.
　　　　　If you'd like to refill both freezing systems, you are requested to purchase 2 pcs of Charging Tank.

DAIHAN *Wisd* SmartCryo™ Freezer

DAIHAN Scientific Co., Ltd.

Distributor