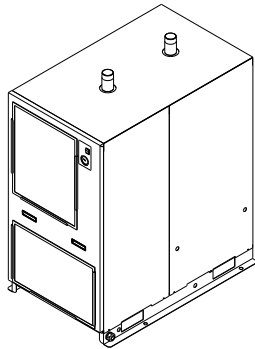




ORIGINAL INSTRUCTIONS

Instruction Manual
Refrigerated Air Dryer
IDFA100F/125F/150F-40-F



The intended use of this product is part of an air preparation line. This product cools down pressurised air and removes condensed water. Pressurised air is reheated and exits the dryer through to the next step of air preparation or application.

1 Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)^{*)}, and other safety regulations.

^{*)}ISO 4414: Pneumatic fluid power — General rules and safety requirements for systems and their components.
ISO 4413: Hydraulic fluid power — General rules and safety requirements for systems and their components
IEC 60204-1: Safety of machinery - Electrical equipment of machines. Part 1: General requirements
ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots

- Refer to product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.
- Keep this manual in a safe place for future reference.

1 Safety Instructions (Continued)

Danger	Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
Warning	Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
Caution	Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Warning

- Always ensure compliance with relevant safety laws and standards.
- All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.

2 Hazard Warnings

Caution

- Hazard of Fire:** This product uses a flammable refrigerant (R454C). Follow the contents of this combustible warning label and safety precautions and handling instructions.
- Hazard of Electricity:** Inside of this product, there is a power-supplying section with high voltage separated by the cover panel. Do not operate the product without the cover panel.
- Hazard of Hot Surface:** The product has surfaces that can reach high temperatures during operation. What is more, there is also the danger of burn injury due to remaining heat after the power supply is cut. Therefore, wait until the temperature of hot parts become 50°C and below.
- Hazard of Rotating Fan Motor:** Since this product has parts that rotate during operation, there is the danger of injury resulting from direct contact. The fan and rotor will start/stop automatically. Thus, do not work on them when power is on.
- Hazard of Compressed Air Circuit:** Before replacing or cleaning parts, be sure to bleed compressed air remaining inside of the product until the gauge indicates “0”. If there is no relief to the pressure, high pressure can propel objects at high velocity when unscrewing parts and cause injury.

3 Specifications

3.1 Specifications

Models			IDFA100F-40-F	IDFA125F-40-F	IDFA150F-40-F	
Operating range *1	Fluid		Compressed air			
	Inlet air temperature	°C	5 to 60			
	Inlet air pressure	MPa	0.15 to 1.0 ⁻⁶			
	Ambient temperature (humidity)		°C	2 to 45 (Relative humidity 85% or less)		
Rated conditions	Airflow capacity	Standard condition m3/h(ANR) ¹	860	1100	1340	
		Compressor intake condition m3/h ²	875	1119	1363	
	Inlet air pressure		MPa	0.7		
	Inlet air temperature		°C	35		
	Ambient temperature		°C	25		
	Outlet air pressure dew point		°C	3		
	Exhaust heat amount of unit		kW	7.3	8.4	10.6
	Voltage			400 VAC 3PH (50Hz)		
Electric spec	Power supply voltage (frequency)		400 VAC %PH (50Hz) Allowable voltage fluctuation +/-10% ³			
	Power consumption ^{*4}	W	2.8	3.1	3.3	
	Operating current ^{*4}	A	5.2	6.3	6.6	
Applicable earth leakage breaker capacity (sensitivity current: 30mA) ⁵		A	15			
SCCR		kA	5			
Noise Level		dB(A)	74	75	80	
Cooling method			Air-cooled refrigeration			
Refrigerant			R454C GWP: 146			
Amount of refrigerant to be filled		g	1250 ± 10	1360 ± 10	1800 ± 10	
Auto drain			Float type (Normally open: Mn. operating pressure 0.1 MPa)			
Drain tube O.D.		mm	10			
Piping port size			R2	R2 1/2	DIN Flange 80	
Weight		kg	245	270	350	
Coating colour			Panel: White 1 / Base: Gray 2			

3 Specifications (Continued)

Notes:
1* ANR indicates the following set of conditions: a temperature of 20°C, atmospheric pressure, and a relative humidity of 65%.
2* Air flow capacity converted by the compressor intake condition [32°C, atmospheric pressure, and 75% relative humidity].
3* Do not use this product with continuous voltage fluctuations.
4* These values are reference values under rated conditions and are not guaranteed. Do not use these values for the thermal set values, etc.
5* Products other than Option R are not equipped with an earth leakage breaker. Purchase an appropriate earth leakage breaker separately. Use an earth leakage breaker with a leak current sensitivity of 30mA.
6* The maximum operating pressure is 1.0MPa as standard, but it is possible to achieve 1.6MP when selecting Option K.

3.2 Coefficient Factors

Inlet Air Temperature (°C)						
5 to 30	35	40	45	50	55	60
1.14	1.21	1	0.92	0.75	0.63	0.53

Inlet Air Pressure (MPa)								
0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1 to 1.6
0.84	0.87	0.9	0.93	0.96	1	1.03	1.06	1.09

Ambient Temperature (°C)					
2 to 25	30	32	35	40	45
1.06	1.02	1	0.99	0.98	0.92

Calculation example: The air flow capacity when the dew point of IDFA100F is set to 3°C under the following conditions.

Coefficient Factor Example (3°C dew point, Inlet air temp 35°C, Inlet air pressure 0.6MPa, Ambient temp 35°C):

860 m³ /h(ANR) ×1.21 × 0.96 × 0.98 =979 m³ /h(ANR)

3 Specifications (Continued)

Warning

Special products (-X) might have specifications different from those shown in this section. Contact SMC for specific drawings.

3.3 Production Serial Number Code

The production serial number code printed on the label indicates the month and year of production as per the following table:

Year	2025	2026	....	2029	2030	2031	....	
Month	D	E	....	H	i	J	....	
Jan	o	Do	Eo	....	Ho	io	Jo	....
Feb	P	DP	EP	....	HP	iP	JP	....
Mar	Q	DQ	EQ	....	HQ	iQ	JQ	....
Apr	R	DR	ER	....	HR	iR	JR	....
May	S	DS	ES	....	HS	iS	JS	....
Jun	T	DT	ET	....	HT	iT	JT	....
Jul	U	DU	EU	....	HU	iU	JU	....
Aug	V	DV	EV	....	HV	iV	JV	....
Sep	W	DW	EW	....	HW	iW	JW	....
Oct	X	DX	EX	....	HX	iX	JX	....
Nov	y	Dy	Ey	....	Hy	iy	Jy	....
Dec	Z	DZ	EZ	....	HZ	iZ	JZ	....

4 Transportation

Warning

- When moving the product, lift with care from the base so that the product is not on its side with careful attention to tipping.
- Do not transport the product lying down on its side, or the product will be damaged.
- Do not suspend the product.
- Do not mount the air filter, etc. to the fitting for air inlet and outlet when transporting. If they must be mounted, support the part with a bracket to avoid vibration during transportation.
- Do not install the product unless the safety instructions have been read and understood.

4 Transportation (Continued)

Warning

- Transportation, installation, and maintenance including dangerous work must be done by personnel who have require knowledge and experience about the product and system.
- This product is heavy. Follow above cautions to avoid risk during transportation. As the product weighs more than 200kg including package, move the product by a forklift. Moving by forklift should be done by personnel who have the licenses.

5 Installation

5.1 Environment

Warning

- Do not use in the following environments, as it may lead to a breakdown. Potential malfunction or damage to the product may occur if these instructions are disregarded.
- Avoid locations where the air dryer will be in direct contact with wind or rain. (Avoid locations where relative humidity is 85% or more)
 - Avoid locations where water, water vapor, salt water, or oil may splash on the product.
 - Avoid locations where dust or other particles are present.
 - Avoid locations where flammable or explosive gases are present.
 - Avoid locations where corrosive gases, solvents or combustible gases are present.
 - Avoid locations which receive direct sunlight or radiated heat.
 - Avoid locations where the ambient temperature exceeds the limits as mentioned below. During operation: 2 to 45°C During storage: 0 to 50°C (when there is no drain water inside of the piping)
 - Avoid locations where temperature substantially changes.
 - Avoid locations where strong magnetic noise occurs. (Avoid locations where strong electric field, strong magnetic fields, or surge voltage occur).
 - Avoid locations where static electricity occurs or conditions which make the product discharge static electricity.
 - Avoid locations where high frequencies occur.
 - Avoid locations where damage is likely to occur due to lightning.
 - Avoid installation on machines used for transporting, such as vehicles, ships, etc.
 - Avoid locations at altitudes of 2000 meters or higher.
 - Avoid locations where strong impacts or vibrations occur.

5 Installation (Continued)

- Avoid locations where a massive force strong enough to deform the product is applied or the weight from a heavy object is applied.
- Avoid locations with insufficient space for maintenance. Necessary maintenance space Front: 600 mm Back: 600 mm Top: 600 mm Right side: 600 mm Left side: 600 mm
- Avoid locations where the ventilation grille is obstructed.
- Avoid locations where the air dryer will draw in high-temperature air discharged from an air compressor or other dryer.
- Avoid pneumatic circuits where rapid pressure fluctuations or flow speed changes are generated.

Warning

- Do not use or store the product in conditions of compressed air or an environment containing substances below. Otherwise, malfunction or parts damage may occur.
 - Corrosive gas, organic solvents, or chemicals.
- 5.2 Anchorage
- The product should be installed on a vibration-free, stable, horizontal flat surface
 - The anchor bolt sets sold separately as an accessory is (IDF-AB501)

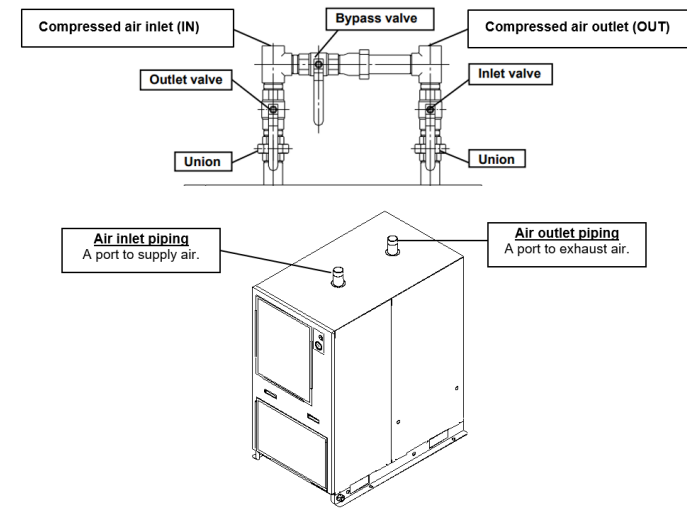
5.3 Piping

Caution

- Connection of the inlet and outlet of compressed air should be made removable by using union and so on.
- When an air fitting is connected with the body of the product, hold the pneumatic piping at the body with a pipe wrench and tighten.
- Avoid applying the piping weight directly to the dryer. When parts including air filter are mounted to the fitting of the inlet and outlet for compressed air, support the parts with the bracket to prevent force being applied to the product.
- Be careful not to let the vibration of the air compressor transmit.
- The piping surface temperature will be the same as the inlet temperature of the compressed air. Wrap the piping with insulator when the surface temperature exceeds 60°C.
- When the inlet temperature of the compressed air exceeds 65°C, install the aftercooler after the air compressor or decrease the temperature of the place to install the air compressor to keep the temperature at 65°C or lower.
- When the pressure of the air source fluctuates a lot, install an air tank.

5 Installation (Continued)

- Before piping, flush the inside of piping to eliminate foreign matter such as particles, seal tape or liquid gasket. Entry of the foreign matter may cause cooling failure or drain discharge failure.
- Use pipes and fittings that have enough endurance against the operating pressure and temperature. And connect it firmly to prevent air leakage.
- Provide bypass-piping to made it possible to do maintenance without stopping the air compressor.
- Metal flexible tube for air inlet and outlet piping may make noise. Please change the piping to steel tube.
- If rapid pressure fluctuation or flow change occurs, install a filter on the dryer outlet to prevent drain from splashing.
- Depending on the operating conditions, condensation might occur around the outlet piping surface. Wrap insulator around the piping to avoid condensation.



5 Installation (Continued)

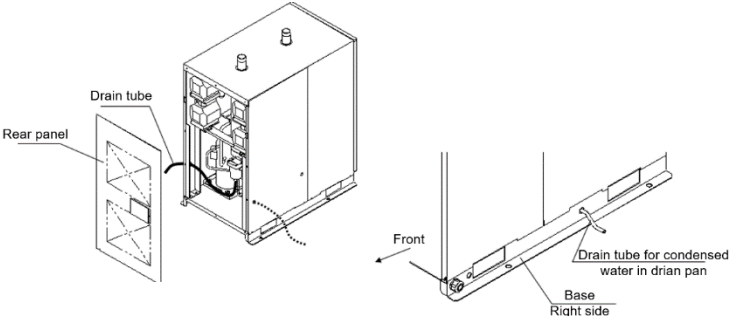
5.4 Drain Tube

- A drain tube of 10mm O.D. is included as an accessory. The outlet end of the tube is released to atmosphere and lets the drain flow through the tube. (When customers prepare the drain tube, keep its length at 5m or less and the I.D. at 8mm or larger for correct operation of the auto drain)
- Using the pressure of the compressed air, the drain will be discharged periodically. Fix the outlet end of the tube so as not to swing during discharge.
- Prevent the drain tube from having a rise in its piping.
- Do not bend or crush the drain tube. When installing the product, take care not to place the product on the drain tube.
- For piping the drain tube to the back of the dryer, use the holder included as an accessory.

5.4.1 The drain tube is at the left side of the product, but can be taken from the right side.

Remove the rear panel.

1. Take out the drain tube inward.
2. Cut the rubber grommet on the opposite side using a cutter.
3. Pass the drain tube through.
4. Replace the rear panel.



5.4.2 Draining piping for condensed water

When the product is used in a environment with high humidity, condensation may be generated internally. The condensed water can be drained from the right side of the base of the product. Let condensate flow into a water outlet or install a drain pan, etc. This draining piping is only for condensed water in inside drain pan.

5 Installation (Continued)

5.5 Electrical Wiring

Warning

- Only qualified personnel should do electrical wiring work.
- Cut off the power supply for safety before the wiring. Wiring with the product energized is strictly prohibited.
- Use a power supply suitable for the specifications of the product.
- Supply power from a stable place, which is free from the effects of any surge.
- Do not plug too many leads into a single socket. It can cause a fire. - Supply power from a system with an emergency stop equipped.
- To avoid electric shock and burnout of the compressor motor, select the earth leakage breaker with the correct sensitivity of leakage current and load capacity and mount to the supply power side referring to the 3.1 Specifications.
- Install the breaker correctly, so that all power can be shut off and easy access to the operation panel is realized.
- Install a breaker compliant with applicable local safety regulations and standards.
- The equipment should be grounded for safety.
- Add an allowance to the length of the grounding cable so that external force is not applied to it.
- Connect the grounding cable first before connecting other cables and remove it last when removing cables.
- Do not connect the earth to a water pipe, a gas pipe, or lightning rod.
- Do not modify the internal electrical wiring of the product.
- For use in Europe, install a breaker compliant with applicable IEC standards to the power supply of the product.

5.5.1 Power supply cable specification

- Prepare the power supply cables below.
- Approx. 0.6m of cable is necessary for wiring in the product.

IDFA100F-40-F	IDFA125F-40-F	IDFA150F-40-F
12AWG (3.5mm ²) or larger		
Cable O.D. Approx. 14 to 18mm, 4 cores (including ground)	Cable O.D. Approx. 18 to 23mm, 4 cores (including ground)	
Wiring of electric: TB1 (Option R connects directly to breaker)		
The power supply cable from the product should be less than 30m.		

5 Installation (Continued)

5.5.2 Power supply cable specification

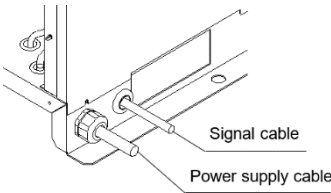
- Prepare the power supply cables below.
- Approx. 0.9m of cable is necessary for wiring in the product.

IDFA100F-40-F	IDFA125F-40-F	IDFA150F-40-F
20AWG (0.5mm ²)		
Cable O.D. Approx. 14 to 18mm, 4 cores (including ground)		
Wiring of electric: TB1 (Option R connects directly to breaker)		
The power supply cable from the product should be less than 30m.		

5.6 Wiring Procedure

5.6.1 Power supply cables wiring procedure

1. Remove the front panel of the product. When lifting the front panel, be sure to hold the handle.
2. Pass the power supply cable through by using the cable fixture at the right bottom base of the product, and connect it to the terminal block. (Refer to the label on the terminal block.)
3. Insert the screwdriver into terminal block and open spring of terminal. (The cable insulator must be stripped at 10mm.)
4. Insert the cable and remove the screwdriver. Option R: M5 tightening torque: 2.5±0.5N·m Do not touch equipment other than the terminal block during wiring.
5. If you are not performing wiring for operation, error signal and remote control, do not perform step "Signal cable wiring procedure" and replace the front panel.



5.6.2 Signal cable wiring procedure

1. Remove the front panel of the product.
2. Take out the signal cable from the signal cable entry at the right bottom base of the product, fix it to the steel plate at the back with a cable bushing, etc. and connect it to the terminal block. (Refer to the label on the terminal block.) Do not touch equipment other than the terminal block during wiring.
3. Insert the screwdriver into terminal block and open spring of terminal. (The cable insulator must be stripped at 10mm.)
4. Insert the cable and remove the screwdriver.
5. Put back the front panel.

5 Installation (Continued)

5.7 Reinstallation

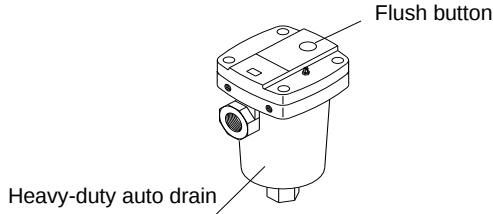
If you move the product and reinstall it into another place after some operations (including trial running), all installation instructions in chapter 5 should be followed as well as the following instructions.

Warning

- Only someone who has enough knowledge about the product and incidental devices should reinstall it in another place.
- Cut off the power source before you disassemble the power cable
- Only qualified personnel should do the wiring work.
- Cut off the power supply for safety before the wiring. Wiring with the product energized is strictly prohibited.
- Separate the compressed air source from the product for safety before removing the piping.
- Do not remove any piping when there is remaining compressed air pressure inside of it.
- Remove the seal tape completely after detaching the piping. Remaining tape could cause imperfect cooling or failure by entering the product.

5.8 Procedure to release residual compressed air

- Even while the dryer is removed, only open the bypass piping valve when compressed air is needed.
- Close the compressed air inlet and outlet valves.
- Check the ball valve of the drain is open.
- Press and hold the flush button at the top of the auto drain to release the internal air pressure from the product.



6 Operation/Shutdown

Caution

Only someone who has enough knowledge and experience about the product and incidental devices should operate or shut down the product.

6.1 Check points before operation

- Check product is installed on level surface with anchor bolts.
- Do not place heavy objects on product or piping.
- Check if the power cable and ground cable are connected correctly.
- Drain tube should be connected correctly.
- Confirm that the piping to the compressed air is correctly connected. Check that the IN and OUT side of the product and bypass piping valves are completely closed.
- Ensure that the ball valve of the auto drain is opened.

6.2 Operation

1. Turn on the main power supply breaker. Turn on the switch with the lamp.
2. The operation lamp turns on. After a moment, the cooling fan will rotate, and hot air will be exhausted from the ventilation outlet.
3. Open the IN and OUT side valves slowly. Ensure the bypass valve is completely closed. Confirm that there is no air leakage.
4. The fan keeps starting and stopping depending on the compressed air and ambient temperature conditions, but the compressor keeps operating continuously, and the evaporation thermometer stays within the green area. When the refrigerant pressure gauge indicator is in the area higher than the green area, refer to Chapter 8 Troubleshooting.
5. After supplying compressed air for a while, the drain will be discharged from the drain tube automatically.
6. Continue the operation.

Caution

- Frequently switching ON and OFF leads to malfunction.
- The auto drain is normally open and the valve closes when the air pressure is 0.1MPa or more. When the IN side valve starts to open, air bleeds from the drain outlet until the pressure reaches 0.1MPa. The pressure may not reach 0.1MPa when the air compressor discharge flow rate is small.
- Dehumidified drain may flow into the secondary piping if there is a sudden change of pressure or flow speed. Do not use the product where these conditions are present.

6 Operation/Shutdown (Continued)

6.3 Stop

1. Turn off the switch with lamp.
2. The lamp turns off and operation stops.

6.4 Cautions for re-start

- Allow at least 3 minutes before restarting the product. If the product is restarted within 3 minutes after being stopped, the protection circuit may be activated, and the dryer will not start.
- When operation does not start, restart it referring to Chapter 8 Troubleshooting.

6.5 Check points before restart

When starting operation, check the following points. Immediately stop operation if any abnormality occurs. Turn off the switch with lamp and shut off the breaker of the power supply.

- There should be no leakage of compressed air.
- Compressed air pressure, temperature, flow rate and ambient temperature are within the specifications of the product.
- Confirm that drain comes out of the drain tube. - The evaporation thermometer is in the green area.
- Drain should not be exhausted from the compressed air outlet of the air dryer.
- There should be no abnormality with noise or vibration or odour from the product

6.6 Cautions when the product is shut down for an extended period of time

- When the product is not used for longer than 24 hours, turn off the operation switch or power supply for safety and saving energy. It is recommended to discharge pressure from the compressed air piping.
- The residual drainage in the air dryer may splash over the outlet when the operation is re-started, so it is recommended to install a filter on the outlet of the air dryer.

7 Maintenance

7.1 General maintenance

Caution

- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
- If handled improperly, compressed air can be dangerous.
- Maintenance of pneumatic systems should be performed only by qualified personnel.
- Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
- After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
- If any electrical connections are disturbed during maintenance, ensure they are reconnected correctly, and safety checks are carried out as required to ensure compliance with applicable national regulations.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions.

Warning

- Only people who have sufficient knowledge and experience about the product and its incidental devices are allowed to perform maintenance.
- Before maintenance, read and understand the important cautionary notifications in this operation manual.

Danger

- Cut off the power supply upstream when removing the panel.
- Before replacing or cleaning parts, be sure to bleed compressed air remaining inside of the product until the gauge indicates "0". Do not remove the auto drain case assembly with any air pressure remaining internally. If there is residual pressure in the product, there would be great danger of an unexpected accident, such as shooting out of parts when they are being unscrewed.
- Power supply parts become hot and will be applied with high voltage during operation. Heat may cause burns, or electric shock can result due to high voltage. Even if the switch with lamp is turned off and the operation is stopped, electricity will be applied to the primary line. During the work for primary line, turn off the electrical leakage breaker of the user's equipment.

7 Maintenance (Continued)

- Even if the device operation stops, there is a danger of burns due to residual heat. Do not start working on the parts inside the product until the temperature has decreased to 50°C or less. Guideline: 10 to 15 minutes
- There is the possibility of contacting the condensate during the auto drain maintenance work. Follow the procedure that you define to keep the worker safe. (e.g. Put on protective glasses, apron, and gloves).
- Use an aqueous solution of neutral detergent for cleaning of the auto drain and do not use solvents.
- When removing the panels and auto drain case assembly, wear protective gloves to prevent injuries from sharp edges.

7.2 Daily Inspection

Before daily operation, check the following points. When any abnormality is found, stop operation immediately and refer to Chapter 8 Troubleshooting.

- There should be no leakage of compressed air.
- The lamp is on during operation.
- Confirm that condensate comes out of the drain tube.
- The evaporation thermometer is in the green area.
- There should be no abnormality with noise or vibration from the product.
- There should be no smell or smoke from the product.

7.3 Regular Maintenance

7.3.1 Clean the dustproof filter of the ventilation grille

Vacuum or air-blow the filter every month to remove dust and particles of the ventilation grille.

Caution

Wear protective goggles or mask during air blowing.

7.3.2 Auto drain maintenance

- Remove the dust accumulated in the auto drain element and bowl assembly every month. Use neutral detergent for cleaning.
- When cleaning does not improve the operation, replace the element and bowl assembly. From the next time, clean them with intervals shorter than a month.

7 Maintenance (Continued)

 Danger

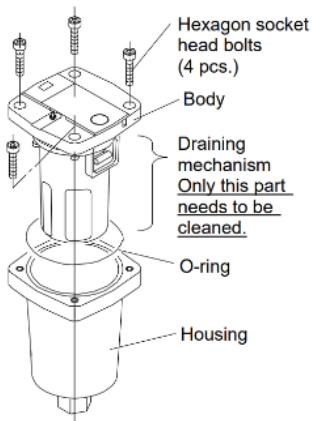
- Be sure to release the residual pressure of the auto drain before starting maintenance.
- When the bowl assembly is broken or very dirty, replace it with a new one.

7.3.3 Auto drain maintenance

- Turn off the STOP switch.
- Fully close the valve at the compressed air IN and OUT piping. (Open the bypass valve, only when compressed air is required during maintenance.)
- 1. Remove the rear panel and check the ball valve is closed.
- 2. Press the flush button and release the internal air pressure of the auto drain.
- 3. Remove the 4 hexagon socket head bolts using a hexagon wrench key with nominal size 5, and lift up the body. The whole draining mechanism can be taken out.
- 4. Hold the body and immerse the lower part from the body (draining mechanism) into water or tepid water solution of neutral detergent, and remove dirt. When the main valve (drain port) is damaged or too dirty to be cleaned, the whole draining part needs to be replaced. Wipe the internal surface of the housing with a cloth. If there is dust stuck to the inside of the housing, leakage can occur after reassembly.
* If the O ring gets dirty, wipe its surface with a soft cloth, and check there are no flaws and deformation. If any flaw or deformation is found, they can cause leakage after reassembly, and so the O-ring should be replaced.
- 6. Mount the O-ring in the groove on the top of the housing. Take care not to let the O-ring protrude.
- 7. Hold the body with the draining mechanism at the bottom, and mount it to the housing in the direction where the flush button comes to the opposite side of the inlet of condensate. (If there is a gap of approx. 3mm between the body and housing when this is done, the drain mechanism may not be inserted fully. Turn it to the right and left slightly.)
- 8. In the condition of step 7, tighten the 4 hexagon socket head bolts. Appropriate tightening torque: 5Nm.

7 Maintenance (Continued)

- 9. After reassembly is completed, open the valve at the inlet of condensate slowly, and check there is no leakage before using. If operation failure occurs even after disassembly and cleaning, replace the whole draining mechanism, and, shorten the time to the next cleaning timing.



Part number	Description	Quantity
ADH-E400	Draining mechanism replacement kit	1

8 Troubleshooting

Problems	Possible causes	Action
Air dryer does not operate, and the running lamp does not turn on, even when the switch is ON.	Power cord is loose or not connected.	- Connect the cord correctly.
	The ground fault circuit interrupter is not turned on.	Check the capacity of the ground fault circuit interrupter . - Check the product was not restarted within 3 minutes after being stopped. - Turn on the ground fault circuit interrupter and try to operate. If the ground fault circuit interrupter turns back off, the insulation failure of the product is suspected. Turn off the power supply and contact SMC. [Ground fault circuit interrupter (Option R)] - The ground fault circuit interrupter is turned off at the time of shipment. Turn on it before starting operation. - Operation cannot be recovered automatically by turning on the ground fault circuit interrupter. Be sure to eliminate the cause before turning it on. Restarting without solving the cause can cause a serious accident.
	The 3-phase power supply is connected incorrectly.	- Swap over the connection of 2 of the 3 wires (R and T phases).
	The external switch for remote control is not turned on.	- Turn on the external switch.
	The wiring for remote control has been loosened or disconnected.	- Reconnect it firmly.

8 Troubleshooting (Continued)

Problems	Possible causes	Action
The lamp goes off and the compressor for refrigeration stops.	The product is installed in an inappropriate location. Ambient temperature is excessive.	- Improve ventilation condition and reduce the ambient temperature as much as possible. - Refer to operation manual "6.2 Reset of protective equipment" and reset the protective circuit.
	The ventilation port is obstructed by a wall or clogged with dust.	- Keep the product 600mm or more away from the surrounding walls. - Clean the ventilation ports once every month. - Refer to operation manual "6.2 Reset of protective equipment" and reset the protective circuit.
	The compressed air temperature is too high.	- Improve the ventilation in the location where the air compressor is installed, or decrease the ambient temperature to allow the discharge air temperature of the air compressor to go down. - Install an aftercooler after the air compressor to reduce the temperature. - Refer to operation manual "6.2 Reset of protective equipment" and reset the protective circuit.
	The fluctuation of the power supply voltage is too large.	- Install a power supply transformer or use a different power supply to provide appropriate voltage. - The fluctuation of the power supply voltage should be kept within +/-10% of the rated voltage. - Refer to operation manual "6.2 Reset of protective equipment" and a set the protective circuit.
The evaporation thermometer is over the green area with hot air coming from the ventilation port (exhaust port).	The product is installed in an inappropriate location. Ambient temperature is excessive.	- Improve ventilation condition and reduce the ambient temperature as much as possible.
	The ventilation port is obstructed by a wall or clogged with dust.	- Keep the product 600mm or more away from the surrounding walls. - Clean the ventilation ports once every month.
	The compressed air temperature is excessive.	- Improve the ventilation in the location where the air compressor is installed, or decrease the ambient temperature to allow the discharge air temperature of the air compressor to go down. - Install an aftercooler after the air compressor to reduce the temperature.

8 Troubleshooting (Continued)

Problems	Possible causes	Action
The evaporation thermometer is over the green area without hot air coming from the ventilation port (exhaust port). (The compressor for refrigeration has stopped with the lamp lit up.	The product is installed in an inappropriate location. Ambient temperature is excessive.	- Improve ventilation condition and reduce the ambient temperature as much as possible.
	The ventilation port is obstructed by a wall or clogged with dust.	- Keep the product 600mm or more away from the surrounding walls. - Clean the ventilation ports once every month.
	The compressed air temperature is excessive.	- Improve the ventilation in the location where the air compressor is installed or decrease the ambient temperature to allow the discharge air temperature of the air compressor to go down. - Install an aftercooler after the air compressor to reduce the temperature.
	The fluctuation of the power supply voltage is too large.	- Install a power supply transformer or use a different power supply to provide appropriate voltage. - The fluctuation of the power supply voltage should be kept within +/-10% of the rated voltage.
	The built-in overload relay of the compressor for refrigeration has started.	- Check the product was not restarted within 3 minutes after being stopped.
Moisture is generated at the downstream of the compressed air line.	The bypass valve is open.	- Be sure to fully close the bypass valve.
	Condensate is not drained from the auto drain.	- Check the draining piping is not used in an upward direction nor bent. - Check the auto drain. - Check the ball valve is open.
	The piping of a different system without an air dryer joins the piping after the product.	- Install another air dryer (this product) in that system. - Keep the two systems separate.
The compressed air pressure drop is too large.	The valves at the inlet and outlet of the piping of the product are not fully opened.	- Be sure to fully open the valves at the inlet and outlet of the product.
	The air filter, etc. installed in the compressed air piping has got clogged.	- Replace the element of the air filter. (Follow the Operation Manual of the equipment.)

9 Documents

9.1 Refrigerant and GWP Value

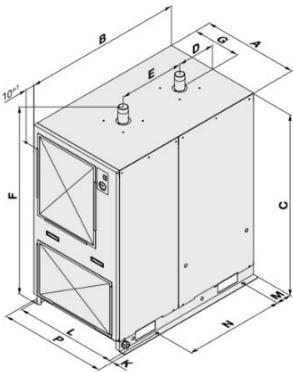
Refrigerant	Global Warming Potential (GWP)	
	Regulation (EU) No 2024/573 (Based on the IPCC AR6)	AIM Act 40 CFR Part 86
R454C	146	

Note 1: This product is hermetically sealed and contains fluorinated greenhouse gases (HFC).

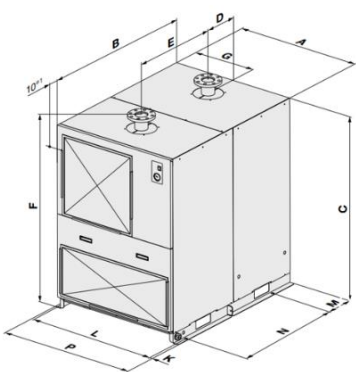
9.2 Dimensions

Model	A	B	C	D	E	F	G	K	L	M	N	P
IDFA100F	690	1120	1276	267	460	1375	335	2	712	107	700	752
IDFA125F	710						355			78	935	
IDFA150F	950	1290	1332	268	720	1432	475	0	990	217	932	1030

(Dimensions in mm)



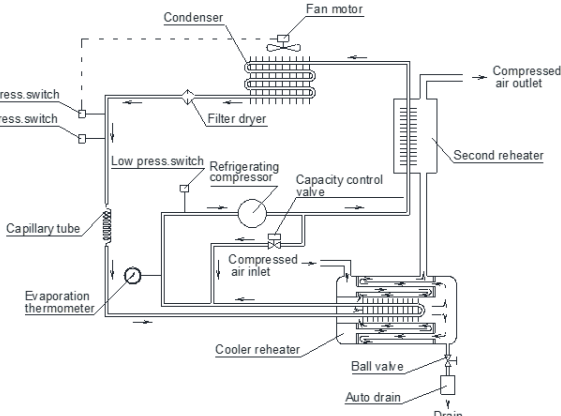
IDFA100F/125F



IDFA150F

9 Documents (Continued)

9.3 Air/Refrigeration circuit



Air circuit: The humid, hot air entering the air dryer first passes through the reheater, where it exchanges heat with dehumidified cold air, pre-cooling it. Next, the air moves to the evaporator, releasing its heat to a cold HFC, further cooling and dehumidifying it to separate moisture. Afterward, the air exchanges heat with incoming hot air at the reheater, increasing its temperature. Finally, the air undergoes additional heating at the reheater, raising its temperature further, and exits the air dryer as warm, dry air.

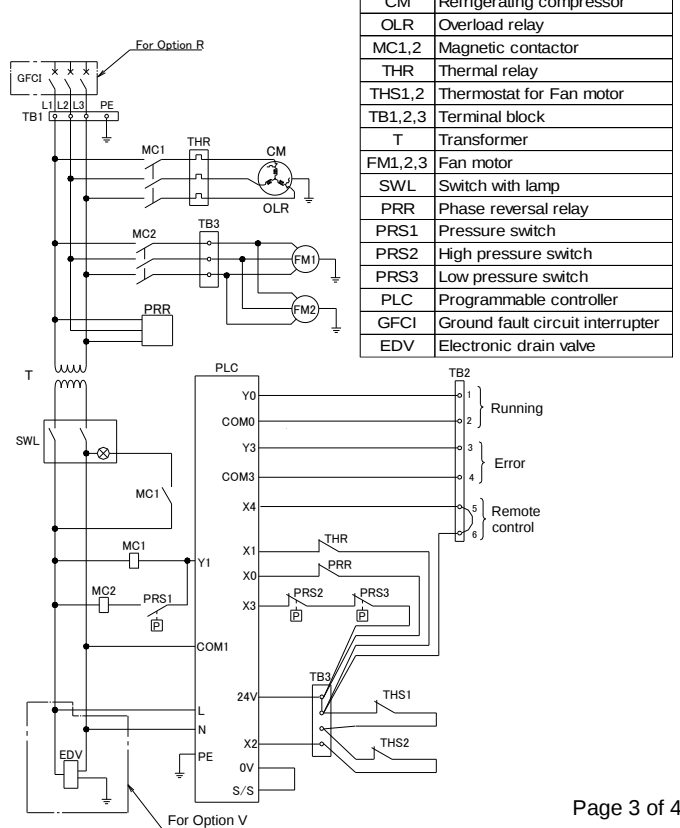
Refrigerant circuit: The HFC gas in the refrigerant circuit is compressed by the compressor and then cooled and liquefied by the condenser. As it passes through the capillary tube, the HFC gas is regulated, causing its temperature to drop. When it moves through the cooler section, it evaporates rapidly, absorbing heat from the compressed air, and is then drawn back into the compressor. The capacity regulating valve opens once the compressed air has been sufficiently cooled, preventing the formation of frozen condensed water due to excessive cooling.

9 Documents (Continued)

9.4 Electrical circuit

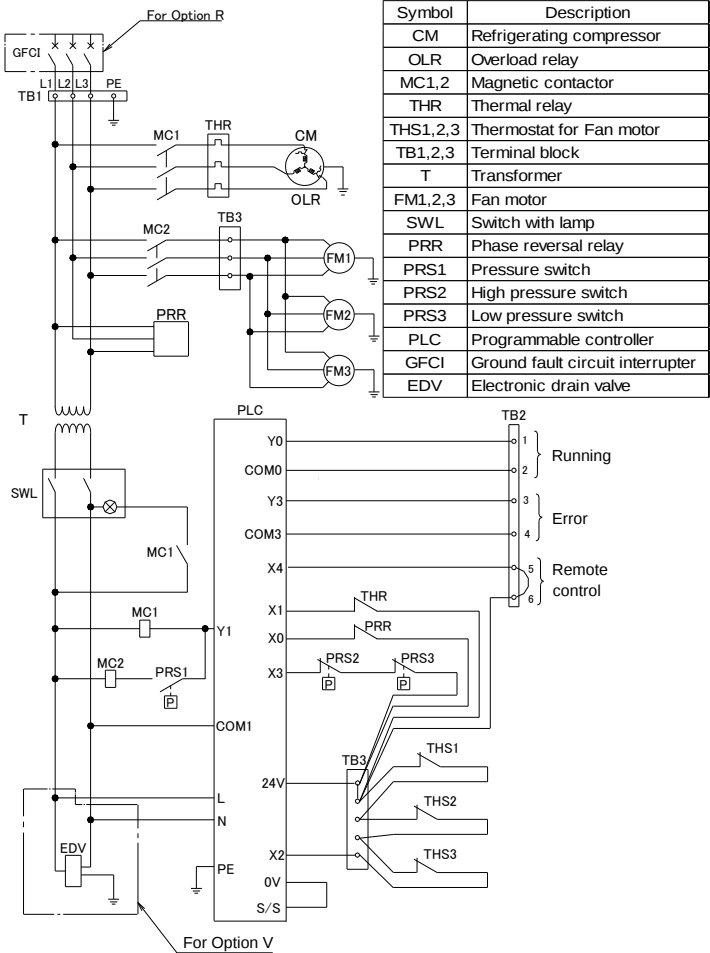
For details of the electric circuit, refer to the label on the back of the front panel of this product.

9.4.1 IDFA100F/125F-40-F



9 Documents (Continued)

9.4.2 IDFA150F-40-F



9.5 Consumable and Regular maintenance parts

- Consumable parts (condition to be checked regularly and replaced)
- Check the following parts regularly, and replace based on the referential timing.

Part number	Description	Qty/pc	Frequency	Referential timing
IDF-FL219	Dustproof filter set (IDFA100F/125F)	1	Every month	When it is damaged. When dirt cannot be cleaned off.
IDF-FL220	Dustproof filter set (IDFA150F)	1		
IDF-E400	Draining mechanism replacement kit (excluding option V)	1		

10 Option C

10.1 Specifications

- Special epoxy resin is coated on the copper tube surface to improve the corrosion resistance the special epoxy resin is only applied where the copper tubes are not protected or insulated.

10.2 Precautions for installation and handling

- The epoxy resin minimizes the corrosion of the coated copper tubes against corrosive gas. The corrosive cannot be completely prevented. Therefore, avoid using the product in environment where corrosive gases are present as much as possible.
- Do not scratch the coated surface of the copper tube when removing the panels for maintenance. As the corrosion resistance can be deteriorated from the scratch position.

11 Option G

Outside panel has Chinese name plate and Chinese operation manual.

12 Option K

Option K (For IDFA100F-F): Maximum working pressure can be used at 1.6 MPa.

Change the internal drain piping from nylon tube to metal.

13 Option R

Option R: is equipped with an earth leakage breaker (GFCI). This is to shut off the power supply when over current or leakage current is applied to the air dryer.

Warning

All electrical work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.

- Be sure to shut off the user's power supply. Wiring with the product energized is strictly prohibited.
- Ensure a stable power supply with no surge.
- Use a power supply suitable for the specifications of the product.
- The equipment should be grounded for safety. Earth leakage breaker does not operate correctly without grounding.
- Do not connect the earth to a water pipe, a gas pipe, or a lightning rod.
- Do not plug too many leads into a single socket. That causes exothermic heat or fire.
- Do not modify the internal electrical wiring of the product

14.1 Earth leakage breaker specification

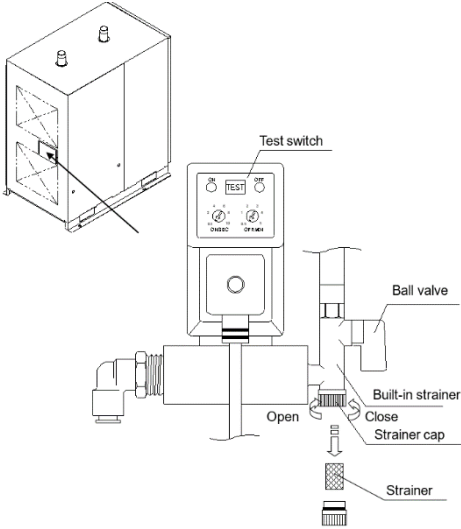
Item	Models	IDFA100F-40-FR	IDFA125F-40-FR	IDFA150F-40-FR
Rated current (A)		15		
Sensitivity current (mA)		30		
SCCR (kA)		5		

12 Option L Option V

Option V: is a dryer with a timer-controlled solenoid valve type auto drain. The timer is adjusted by customer according to the operating conditions. Safety instructions for use

Warning

- Before replacing the auto drain on the compressed air side confirm that the pressure gauge indicates zero". Removing the auto drain with any air pressure remains could arise to unexpected accident, such as parts been expelled when being unscrewed.
- There is the possibility of damaging the condenser during the auto drain maintenance. - Follow end-user procedures to ensure safety of operator. (example: Put on protective glass, apron, and gloves).



12.1 Specifications

Part number (Service parts)		IDF-S0405
On time	Setting range	Approx. 0.2 to 2 seconds
OFF time	Setting range	Approx.0.5 to 30 seconds

12 Option V (Continued)

12.2 Maintenance

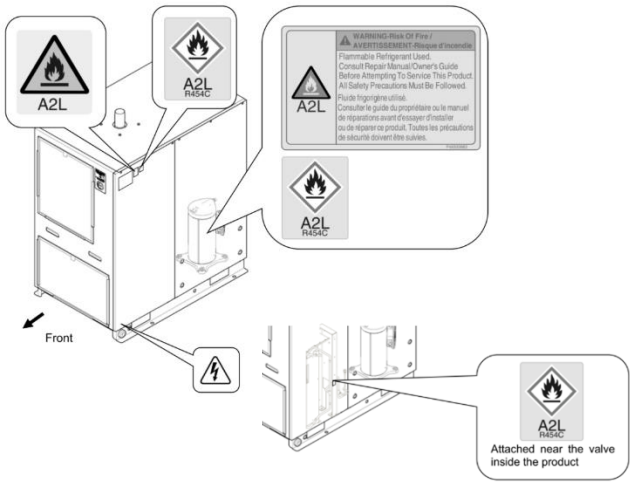
Be sure to perform regular maintenance of the strainer. Follow the following steps to perform maintenance.

- Close the ball valve.
- Press the test switch to release the residual pressure.
- Remove the strainer and clean it.
- Mount the strainer and open the ball valve.

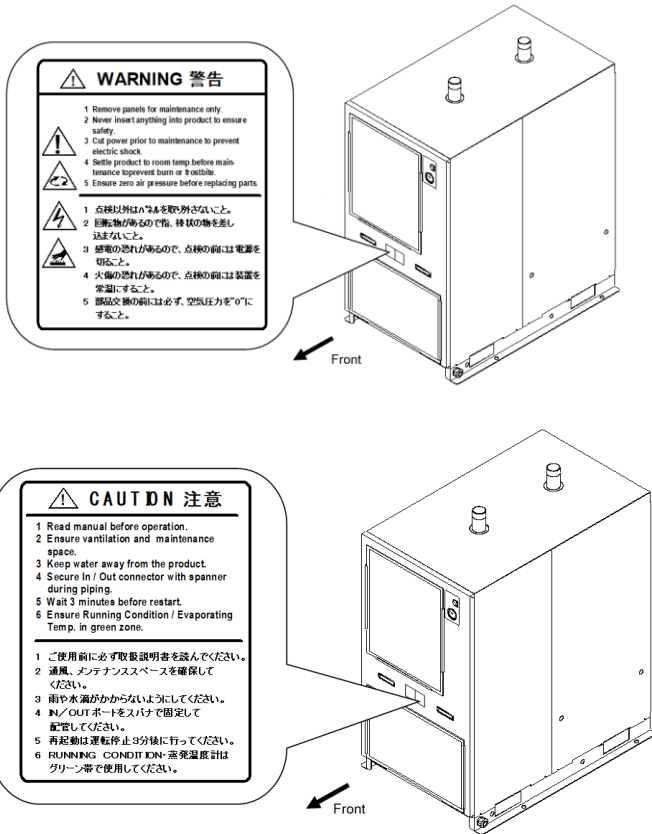
13 Location of Hazard Warning Labels

Warning

- Read with caution and pay attention to the notations of hazard warning label.
- Do not remove or modify hazard warning label.
- Confirm the positions of hazard warning label.
- The customer cannot change the position of the hazard warning label.



13 Location of Hazard Warning Labels (Continued)



14 imitations of Use

14.1 Limited warranty and disclaimer/compliance requirements

Refer to Handling Precautions for SMC Products.

15 Product Disposal

This product shall not be disposed of as municipal waste. Check your local regulations and guidelines to dispose this product correctly, in order to reduce the impact on human health and the environment.

16 Declaration of Conformity

Below is a sample Declaration of Conformity (DoC) used in this product.

