Refrigerated Air Dryer

For Use in Europe, Asia and Oceania

Standard IDFA□E/□ Series

Refrigerants (**IDFA3E to 15E1**)

Low GWP Refrigerant For use in Europe	R1234yf (HFO) * Not available for air transport
For use in Asia and Oceania	R134a (HFC)

Refrigerant (**IDFA60 to 90**)

New **Low GWP Refrigerant** For use in Europe	R454C (HFC) * Not available for air transport
For use in Asia and Oceania	R410A (HFC)

Power supply voltage: Single-phase 230 VAC (50 Hz)

IDFA60 to 90

IDFA3E to 15E1

Large Size IDFA□F Series

Refrigerant (**IDFA100F to 150F**)

New **Low GWP Refrigerant** For use in Europe	R454C (HFC)*1 * Not available for air transport
For use in Asia and Oceania	R407C (HFC)

*1 The low-GWP refrigerant is only available for the three-phase 400 VAC (50 Hz) type.

Power supply voltage: Three-phase 400 VAC (50 Hz), Three-phase 380 VAC (50 Hz)

Tolerant of high temperature environment

Top of its class in the industry for the large air-cooled type
Ambient temperature **45°C** at max.
Inlet air temperature **60°C** at max.

Energy saving design

Exhaust heat reduced by **25%** at max.
Ambient temperature increase suppressed.
Employs a heat exchanger made of high corrosion-resistant stainless steel.

Variations

Standard IDFA3E to 15E1

Model	Rated inlet condition	Air flow capacity [m³/h (ANR)] Outlet air pressure dew point 3°C	7°C	10°C	Refrigerant: Low GWP Refrigerant For use in Europe	Refrigerant: For use in Asia and Oceania	Port size	Page
IDFA3E	35°C 0.7 MPa	12	15	17	R1234yf (HFO)	R134a (HFC)	Rc3/8	p. 5 ▸ 9
IDFA4E		24	31	34			Rc1/2	
IDFA6E		36	46	50			Rc3/4	
IDFA8E		65	83	91				
IDFA11E		80	101	112				
IDFA15E1		120	152	168			Rc1	

Standard IDFA60 to 90

Model	Rated inlet condition	Air flow capacity [m³/h (ANR)] Outlet air pressure dew point 3°C	7°C	10°C	Refrigerant: Low GWP Refrigerant For use in Europe	Refrigerant: For use in Asia and Oceania	Port size	Page
IDFA60	35°C 0.7 MPa	204	300	360	R454C (HFC)	R410A (HFC)	R1	p. 10 ▸ 18
IDFA70		312	408	480			R1 1/2	
IDFA80		552	654	720			R2	
IDFA90		810	900	960				

Large Size IDFA100F to 150F

Model	Rated inlet condition	Outlet air pressure dew point	Air flow capacity [m³/h (ANR)]	Refrigerant: Low GWP Refrigerant For use in Europe	Refrigerant: For use in Asia and Oceania	Port size	Page
IDFA100F-38	40°C 0.7 MPa	10°C	960	–	R407C (HFC)	R2	p. 19 ▸ 23
IDFA125F-38			1210			R2 1/2	
IDFA150F-38			1500			DIN flange 80	
IDFA100F-40	35°C 0.7 MPa	3°C	860	R454C (HFC)		R2	
IDFA125F-40			1100			R2 1/2	
IDFA150F-40			1340			DIN flange 80	

CONTENTS

Refrigerated Air Dryer For Use in Europe, Asia and Oceania
IDFA□ Series

IDFA□E/F Series
Model Selection

The corrected air flow capacity, which considers the user's operating conditions, is required for selecting the air dryer. Please select using the following procedures.
However, for 400 VAC, model should also be selected based on the amount of processed air of 380 VAC regarding IDFA100F to 150F. (Correction factor is based on the rated conditions of 380 VAC, so when the factor of rated conditions of 400 VAC is inputted , the amount of processed air of 400 VAC can be found.)

IDFA□E/F Selection Example

Condition		Data symbol	Correction factor*1
Inlet air temperature	40°C	A	0.83
Ambient temperature	35°C	B	0.83
Inlet air pressure	0.5 MPa	C	0.92
Air consumption	31 m³/h	—	—

*1 Values obtained from the table below.

1 Read the correction factor.

Obtain the correction factor A to D suitable for your operating condition using the table below.

2 Calculate the corrected air flow capacity.

Obtain the corrected air flow capacity from the following formula.
Corrected air flow capacity = Air consumption ÷ (Correction factor A x B x C)

Corrected air flow capacity = 31 m³/h ÷ (0.83 x 0.83 x 0.92) = 48.9 m³/h

3 Select the model.

Select the model which air flow capacity exceeds the corrected air flow capacity using the specification table. (For air flow capacity, refer to the data D below.)

According to the corrected air flow capacity of 48.9 m³/h, the IDFA8E will be selected when the required output air pressure dew point is 3°C. The IDFA6E will be selected when the required pressure dew point is 10°C.

4 Option

Refer to pages 25 and 26.

5 Finalize the model number.

Refer to pages 5, 7, 19 and 21.

6 Select accessories sold separately.

Refer to page 29.

Data A: Inlet Air Temperature

Inlet air temperature [°C]	Correction factor IDFA3E to 15E1
5 to 25	1.30
30	1.25
35	1
40	0.83
45	0.7
50	0.6

Inlet air temperature [°C]	Correction factor IDFA100F to 150F
5 to 30	1.41
35	1.21
40	1
45	0.92
50	0.75
55	0.63
60	0.53

Data B: Ambient Temperature

Ambient temperature [°C]	Correction factor IDFA3E to 11E	Correction factor IDFA15E1
20	1.1	1.1
25	1	1
30	0.91	0.97
35	0.83	0.89
40	0.79	0.77

Ambient temperature [°C]	Correction factor IDFA100F to 150F
2 to 25	1.06
30	1.02
32	1
35	0.99
40	0.98
45	0.92

Data C: Inlet Air Pressure

Inlet air pressure [MPa]	Correction factor IDFA3E to 11E	Correction factor IDFA15E1
0.3	0.80	0.72
0.4	0.87	0.81
0.5	0.92	0.88
0.6	0.96	0.95
0.7	1.00	1.00
0.8	1.04	1.06
0.9	1.07	1.11
1	1.1	1.16
1.2	1.16	1.21
1.4	1.21	1.25
1.6	1.25	1.27

Inlet air pressure [MPa]	Correction factor IDFA100F to 150F
0.2	0.84
0.3	0.87
0.4	0.9
0.5	0.93
0.6	0.96
0.7	1
0.8	1.03
0.9	1.06
1 to 1.6	1.09

Data D: Air Flow Capacity

Model		Air flow capacity [m³/h (ANR)] IDFA3E	IDFA4E	IDFA6E	IDFA8E	IDFA11E
Outlet air pressure dew point	3°C	12	24	36	65	80
	7°C	15	31	46	83	101
	10°C	17	34	50	91	112

Model		Air flow capacity [m³/h (ANR)] IDFA15E1
Outlet air pressure dew point	3°C	120
	7°C	152
	10°C	168

Model		Air flow capacity [m³/h (ANR)] IDFA100F	IDFA125F	IDFA150F
Outlet air pressure dew point	3°C	670	860	1045
	7°C	816	1029	1275
	10°C	960	1210	1500

* In the case of option A (cool compressed air output), the air flow capacity is different. Refer to page 25 for details. (IDFA3E to 11E)
* The outlet air pressure dew point varies depending on the operating conditions. Particularly when the outlet air pressure dew point is 3°C or 7°C, though this depends on the operating conditions, freeze protection functions may be activated, resulting in the dew point rising and becoming unstable. If a stable low dew point is required, consider an IDG series membrane air dryer.

IDFA60/70/80/90 Series
Model Selection

Air dryers should be selected based on the corrected air flow capacity while taking operating environment and facility into account. Select the air dryer model in accordance with the following procedure.

1 Read the correction factors.

Read the correction factors Ⓐ to Ⓒ suitable to the operating conditions.

IDFA Selection Example

Condition		Data symbol	Correction factor*1
Inlet air temperature	40°C	Ⓐ	0.71
Ambient temperature	30°C	Ⓑ	0.85
Inlet air pressure	0.6 MPa	Ⓒ	0.89
Air flow rate	250 m³/h (ANR)	—	—
Outlet air pressure dew point	3°C	—	—

*1 Values obtained from the table below

2 Calculate the corrected air flow capacity.

Obtain the corrected air flow capacity from the following formula.
Corrected air flow capacity = Air flow rate ÷ (Correction factor Ⓐ x Ⓑ x Ⓒ)

Corrected air flow capacity
= 250 m³/h (ANR) ÷ (0.71 x 0.85 x 0.89)
= 465 m³/h (ANR)

3 Select the model.

Select the model with air flow capacity exceeding the calculated corrected air flow from data Ⓓ of the table below.

The model which exceeds the correct air flow capacity of 465 m³/h (ANR) is IDFA80.

Data Ⓐ: Inlet Air Temperature

°C	5 to 25	30	35	40	45	50	55	60	65
Correction factor	1.42	1.15	1.00	0.71	0.62	0.50	0.40	0.33	0.21

Data Ⓑ: Ambient Temperature

°C	2 to 25	30	35	40	45
Correction factor	1.00	0.85	0.80	0.73	0.62

Data Ⓒ: Inlet Air Pressure

MPa	0.3	0.4	0.5	0.6	0.7 to 1.6
Correction factor	0.71	0.75	0.82	0.89	1.00

Data Ⓓ: Air Flow Capacity

Model		Air flow capacity m³/h (ANR)			
		IDFA60	IDFA70	IDFA80	IDFA90
Outlet air pressure dew point	3°C	204	312	552	810
	7°C	300	408	654	900
	10°C	360	480	720	960

* The outlet air pressure dew point varies depending on the operating conditions. Particularly when the outlet air pressure dew point is 3°C or 7°C, though this depends on the operating conditions, freeze protection functions may be activated, resulting in the dew point rising and becoming unstable. If a stable low dew point is required, consider an IDG series membrane air dryer.

* Refer to pages 27 and 28 for options.
* Refer to page 30 for optional accessories.

Low GWP Refrigerant | For Use in Europe **Refrigerant R1234yf (HFO)**

IDFA□E Series

3E, 4E, 6E, 8E, 11E, 15E1

(Max. inlet air temperature: 50°C, Max. ambient temperature: 40°C)

For use in Asia and Oceania | p. 7

CE UKCA

How to Order

Refrigerant

Symbol	Description
F	Low GWP refrigerant

∗ Not available for air transport

IDFA **8E** — **23** *1 — **Nil / A / C** — **F** — **Nil / G / K / L / R / T / V**

Size

Size
3E
4E
6E
8E
11E
15E1

Voltage

Symbol	Voltage
23	Single-phase 230 VAC (50 Hz)

∗ The voltages listed below are only applicable to the IDFA6E.

20	Single-phase 200 VAC (50 Hz) Single-phase 200/220 VAC (60 Hz)

Options and Available Combinations (Size/Option)

Symbol*2 / Option / Size	Nil None	A Cool compressed air output	C Anti-corrosive treatment	G With Chinese labels and a Chinese operation manual	K Moderate pressure specification*3 (Auto drain bowl type: Metal bowl with level gauge)	L With a heavy-duty auto drain (Applicable to moderate pressure)*3	R With a circuit breaker	T With a terminal block for run & alarm signal	V With a timer controlled solenoid valve type auto drain (Applicable to moderate pressure)*3
3E	●	●	●	●	—	—	—	—	—
4E	●	●	●	●	—	●	●	●	●
6E	●	●	●	●	●	●	●	●	●
8E	●	●	●	●	●	●	●	●	●
11E	●	●	●	●	●	●	●	●	●
15E1	●	—	●	●	●	●	●	●	●

∗1 G thread (PF thread) can accept the R thread (PT male thread), thus making no "F" in the thread specification setting. A conversion hexagon nipple for the R thread (PT male thread) is also contained.

∗2 Enter alphabetically when multiple options are combined.
However, the following combination cannot be achieved.
• Combination of option K, L and V cannot be achieved because an auto drain can only be attached to a single option.

∗3 The maximum operating pressure is 1.6 MPa.

∗ Refer to pages 25 and 26 for further details on optional specifications.

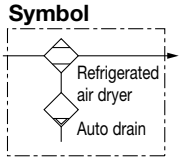
∗ Option "H" (Auto drain bowl type: Metal bowl) is only applicable to the IDFA6E-20. However, option K, L, and V cannot be selected in combination.

Options	▸ p. 25
Optional Accessories	▸ p. 29

Standard Specifications

Specifications \ Model				Standard temperature air inlet					
				IDFA3E-23-F	IDFA4E-23-F	IDFA6E-23-F*7	IDFA8E-23-F	IDFA11E-23-F	IDFA15E1-23-F
Operating range*3	Fluid			Compressed air					
	Inlet air temperature [°C]			5 to 50					
	Inlet air pressure [MPa]			0.15 to 1.0*9					
	Ambient temperature (Humidity) [°C]			2 to 40 (Relative humidity of 85% or less)					
Rated specifications*4	Air flow capacity m³/h	*1 Standard condition (ANR)	Outlet air pressure dew point 3°C	12	24	36	65	80	120
			Outlet air pressure dew point 7°C	15	31	46	83	101	152
			Outlet air pressure dew point 10°C	17	34	50	91	112	168
		*2 Compressor intake condition	Outlet air pressure dew point 3°C	13	25	37	68	83	125
			Outlet air pressure dew point 7°C	16	32	48	86	105	158
			Outlet air pressure dew point 10°C	18	35	52	95	116	175
	Inlet air pressure [MPa]			0.7					
	Inlet air temperature [°C]			35					
	Ambient temperature [°C]			25					
	Power supply voltage			Single-phase: 230 VAC [Voltage fluctuation ±10%] 50 Hz					
Electrical characteristics	Power consumption*6 [W]			190	200	210	230	410	420
	Operating current*6 [A]			1.5		1.6	1.8	3.1	
Applicable circuit breaker capacity*5 (sensitivity current 30 mA) [A]				5					10
Condenser				Air-cooled					
Refrigerant				R1234yf (HFO)*10					
Refrigerant charge [kg]				0.15	0.2	0.23	0.27	0.29	0.35
Auto drain				Float type (Normally open)					
Port size				Rc 3/8	Rc 1/2	Rc 3/4			Rc 1
Accessory				Hexagon nipple					
Weight [kg]				18	22	23	27	28	46
Compliant standards				CE/UKCA marking					

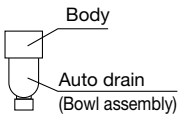
Symbol



*1 Air flow capacity under the standard condition (ANR) [atmospheric pressure at 20°C, relative humidity at 65%]
*2 Air flow capacity converted by the compressor intake condition [atmospheric pressure at 32°C, relative humidity at 75%].
*3 The operation range does not guarantee the use with normal air flow capacity.
*4 Please select a model in accordance with the Model Selection (Page 3).
*5 Product other than option R is not equipped with an earth leakage breaker. Please purchase an appropriate earth leakage breaker separately.
*6 These values are reference values under rated conditions, and are not guaranteed. Do not use these values for the thermal set values, etc.
*7 Refer to the operation manual on the SMC website for the IDFA6E-20 specifications.

Replacement Parts

Model	IDFA3E-23-F	IDFA4E-23-F	IDFA6E-23-F	IDFA8E-23-F	IDFA11E-23-F	IDFA15E1-23-F
Auto drain replacement part no.*8	AD38-D		AD48-D			

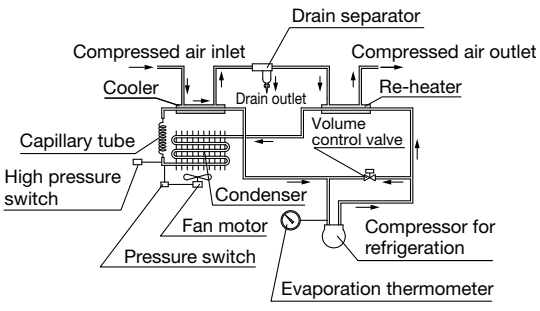


*8 The part number for the auto drain (Bowl assembly) components without including the body part. Body part replacement is impossible.
*9 The maximum operating pressure is 1.0 MPa as standard, but it is possible to achieve 1.6 MPa when selecting option K, L, or V.
*10 R1234yf is a slightly flammable refrigerant. Avoid using this product in proximity to open flames.
* When a short-term interruption of the power supply (including momentary interruption) occurs in this equipment, the restarting of normal operations may require some time or may be impossible due to the operation of protective devices even after the supply of power returns.

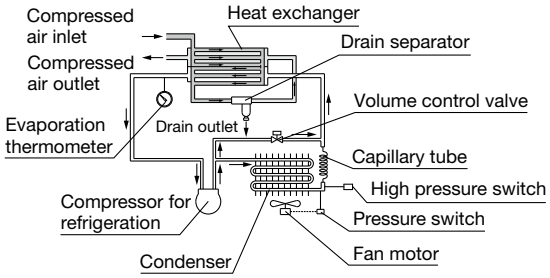
Construction Principle (Air/Refrigerant Circuit)

Humid, hot air coming into the air dryer will be cooled down by a cooler re-heater (heat exchanger). Water condensed at this time will be removed from the air by auto drain and drained out automatically. Air separated from the water will be heated by a cooler re-heater (heat exchanger) to obtain the dried air, which goes through to the outlet side.

IDFA3E-23-F



IDFA4E-23-F to 15E1-23-F



For Use in Asia and Oceania **Refrigerant R134a (HFC)**

IDFA□E Series

3E, 4E, 6E, 8E, 11E, 15E1

(Max. inlet air temperature: 50°C, Max. ambient temperature: 40°C)

For use in Europe | p .5

CE UKCA

How to Order

IDFA **8E** — **23** — **Nil**

Size

Size
3E
4E
6E
8E
11E
15E1

Voltage

Symbol	Voltage
23	Single-phase 230 VAC (50 Hz)

∗ The voltages listed below are only applicable to the IDFA6E.

20	Single-phase 200 VAC (50 Hz) Single-phase 200/220 VAC (60 Hz)

∗1

Nil
A
C
G
K
L
R
T
V

Options and Available Combinations (Size/Option)

Symbol∗2 / Option / Size	Nil None	A Cool compressed air output	C Anti-corrosive treatment	G With Chinese labels and a Chinese operation manual	K Moderate pressure specification Note 3) Auto drain bowl type: Metal bowl with level gauge	L With a heavy-duty auto drain (Applicable to moderate pressure)∗3	R With a circuit breaker	T With a terminal block for run & alarm signal	V With a timer controlled solenoid valve type auto drain (Applicable to moderate pressure)∗3
3E	●	●	●	●	—	—	—	—	—
4E	●	●	●	●	—	●	●	●	●
6E	●	●	●	●	●	●	●	●	●
8E	●	●	●	●	●	●	●	●	●
11E	●	●	●	●	●	●	●	●	●
15E1	●	—	●	●	●	●	●	●	●

∗1 G thread (PF thread) can accept the R thread (PT male thread), thus making no “F” in the thread specification setting. A conversion hexagon nipple for the R thread (PT male thread) is also contained.

∗2 Enter alphabetically when multiple options are combined. However, the following combination cannot be achieved.
• The combination of option K, L, and V cannot be achieved because an auto drain can only be attached to a single option.

∗3 The maximum operating pressure is 1.6 MPa.

∗ Refer to pages 25 and 26 for further details on optional specifications.

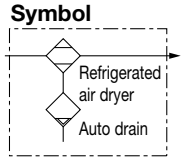
∗ Option H (Auto drain bowl type: Metal bowl) is only applicable to the IDFA6E-20. However, option K, L, and V cannot be selected in combination.

Options	▸ p. 25
Optional Accessories	▸ p. 29

Standard Specifications

Specifications				Model	Standard temperature air inlet					
					IDFA3E	IDFA4E	IDFA6E*7	IDFA8E	IDFA11E	IDFA15E1
Operating range*3	Fluid				Compressed air					
	Inlet air temperature			[°C]	5 to 50					
	Inlet air pressure			[MPa]	0.15 to 1.0*9					
	Ambient temperature (Humidity)			[°C]	2 to 40 (Relative humidity of 85% or less)					
Rated specifications*4	Air flow capacity m³/h	*1 Standard condition (ANR)	Outlet air pressure dew point	3°C	12	24	36	65	80	120
			Outlet air pressure dew point	7°C	15	31	46	83	101	152
			Outlet air pressure dew point	10°C	17	34	50	91	112	168
		*2 Compressor intake condition	Outlet air pressure dew point	3°C	13	25	37	68	83	125
			Outlet air pressure dew point	7°C	16	32	48	86	105	158
			Outlet air pressure dew point	10°C	18	35	52	95	116	175
	Inlet air pressure			[MPa]	0.7					
	Inlet air temperature			[°C]	35					
	Ambient temperature			[°C]	25					
	Power supply voltage				Single-phase: 230 VAC [Voltage fluctuation ±10%] 50 Hz					
Electrical characteristics	Power consumption*6			[W]	180			208	385	420
	Operating current*6			[A]	1.2			1.4	2.7	2.9
Applicable circuit breaker capacity*5 (sensitivity current 30 mA)				[A]	5					10
Condenser					Air-cooled					
Refrigerant					R134a (HFC)					
Refrigerant charge				[kg]	0.15	0.2	0.23	0.27	0.29	0.35
Auto drain					Float type (Normally open)					
Port size					Rc 3/8	Rc 1/2	Rc 3/4			Rc 1
Accessory					Hexagon nipple					
Weight				[kg]	18	22	23	27	28	46
Compliant standards					CE/UKCA marking					

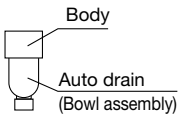
Symbol



*1 Air flow capacity under the standard condition (ANR) [atmospheric pressure at 20°C, relative humidity at 65%]
*2 Air flow capacity converted by the compressor intake condition [atmospheric pressure at 32°C, relative humidity at 75%].
*3 The operation range does not guarantee the use with normal air flow capacity.
*4 Please select a model in accordance with the Model Selection (Page 3).
*5 Product other than the option R is not equipped with an earth leakage breaker. Please purchase an appropriate earth leakage breaker separately.
*6 These values are reference values under rated conditions, and are not guaranteed. Do not use these values for the thermal set values, etc.
*7 The specifications of the IDFA6E-20 are the same as those of the IDF6E-20 (**Web Catalog**) aside from the compliant standards.

Replacement Parts

Model		IDFA3E	IDFA4E	IDFA6E	IDFA8E	IDFA11E	IDFA15E1
Auto drain replacement part no.*8	New	AD38-D		AD48-D			
	Previous	AD38		AD48			

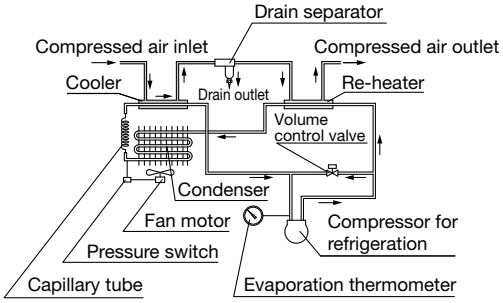


*8 The part number for the auto drain (bowl assembly) components without including the body part. Body part replacement is impossible. In addition, note that the auto drain part number differs depending on the serial number on the dryer specification label. For details, refer to page 31.
*9 The maximum operating pressure is 1.0 MPa as standard, but it is possible to achieve 1.6 MPa when selecting option K, L, or V.
* When a short-term interruption of the power supply (including momentary interruption) occurs in this equipment, the restarting of normal operations may require some time or may be impossible due to the operation of protective devices even after the supply of power returns.

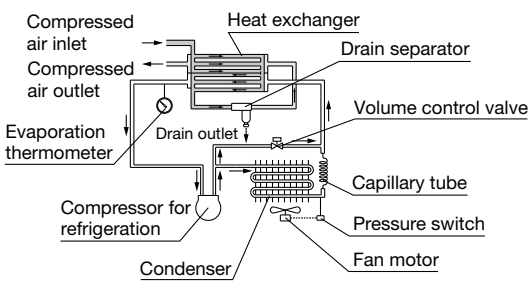
Construction Principle (Air/Refrigerant Circuit)

Humid, hot air coming into the air dryer will be cooled down by a cooler re-heater (heat exchanger). Water condensed at this time will be removed from the air by auto drain and drained out automatically. Air separated from the water will be heated by a cooler re-heater (heat exchanger) to obtain the dried air, which goes through to the outlet side.

IDFA3E

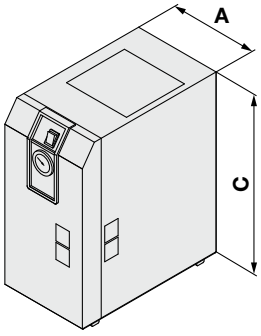


IDFA4E/6E/8E/11E/15E1

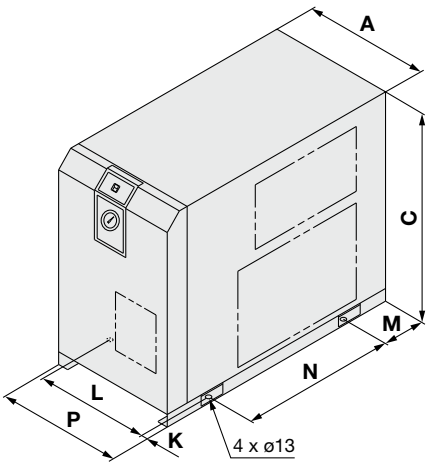


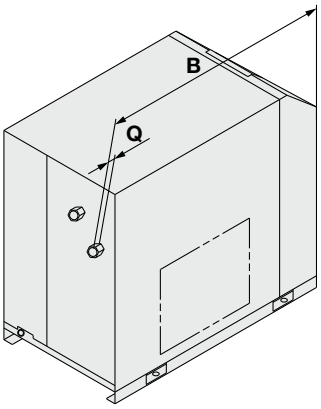
Dimensions

IDFA3E to 15E1

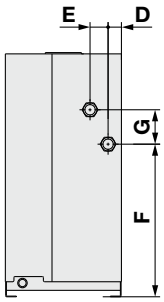


In case of IDFA3E





IDFA4E to 15E1



Dimensions [mm]

Model	Port size	A	B	C	D	E	F	G	K*1	L*1	M*1	N*1	P	Q
IDFA3E	Rc 3/8	226	410	473	67	125	304	33	36	154	21	330	—	15
IDFA4E	Rc 1/2	270	453	498	31	42	283	80	15	240	80	275		13
IDFA6E	Rc 3/4		455											15
IDFA8E			485	568			355					300		
IDFA11E														
IDFA15E1	Rc 1	300	603	578	41	54	396	87		43	101	380	314	16

*1 Meaning the foot dimensions for the IDFA3E.

Refrigerated Air Dryer *IDFA60/70/80/90* Series

Low GWP Refrigerant For Use in Europe/For Use in Asia and Oceania

Applicable for the high-temperature environments

Ambient temperature: Max. 45°C
Inlet air temperature : Max. 65°C

Air flow capacity

＊ IDFA90-23, Dew point of 3°C

810 m³/h

(23% increase compared to the existing model)

Power supply voltage

Single-phase 230 VAC (50 Hz)

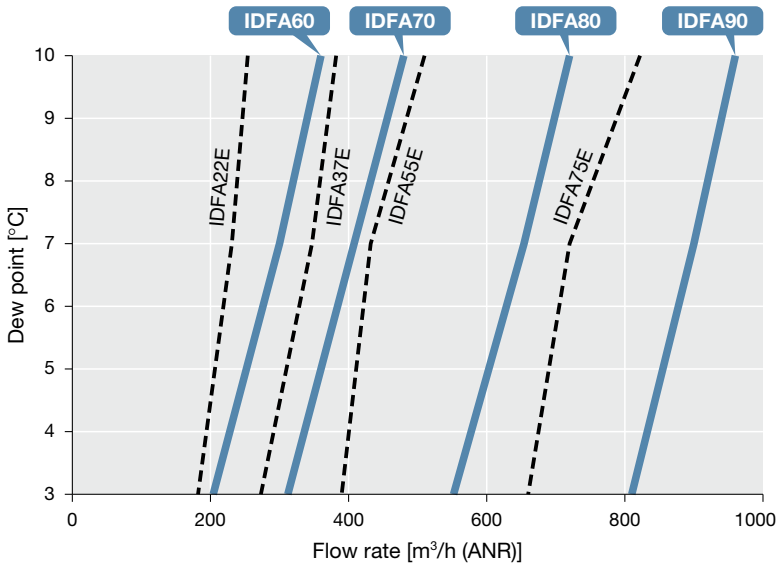
Refrigerants

Low GWP Refrigerant For use in Europe	R454C (HFC) ＊ Not available for air transport
For use in Asia and Oceania	R410A (HFC)

Applicable for the high-temperature environments

	IDFA Series	Existing model IDFA Series
Ambient temperature	Max. **45°C**	Max. 40°C
Inlet air temperature	Max. **65°C**	Max. 50°C

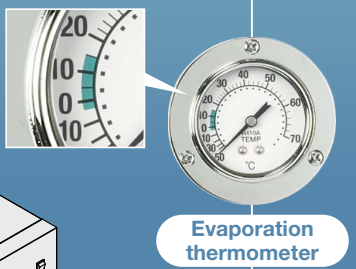
Increased air flow capacity



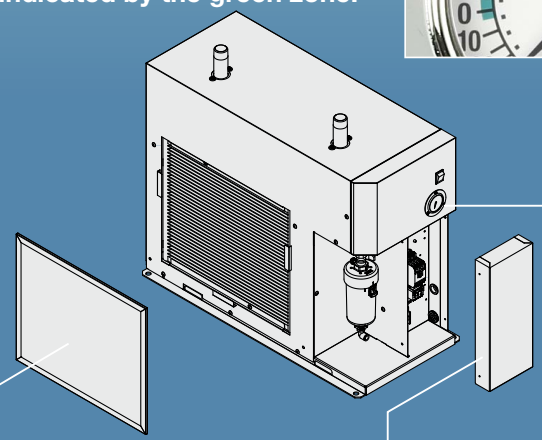
A new stainless steel heat exchanger helps reduce the load of the compressor.

Easier maintenance

- **The temperature range for normal operating conditions is indicated by the green zone.**



Evaporation thermometer



- **Dustproof filter provided as a standard accessory**

Prevents clogging of the condenser
Can be installed without tools

- **All electrical components are located in the front of the product.**

The electrical components can be checked by removing the front panel.

Series Variations

Model	Rated inlet condition	Air flow capacity [m³/h (ANR)] Outlet air pressure dew point 3°C	7°C	10°C	Refrigerant: Low GWP Refrigerant For use in Europe	Refrigerant: For use in Asia and Oceania	Port size
IDFA60	35°C 0.7 MPa	204	300	360	R454C (HFC)	R410A (HFC)	R1
IDFA70		312	408	480			R1 1/2
IDFA80		552	654	720			R2
IDFA90		810	900	960			

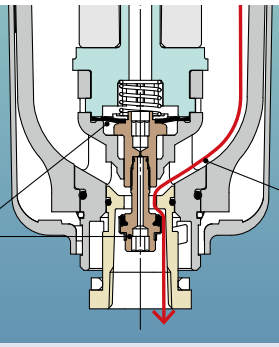
Options

- Cool compressed air output
- Anti-corrosive treatment for copper tube
- With Chinese labels and a Chinese operation manual
- With a heavy-duty auto drain
- With an earth leakage breaker
- With a terminal block for operating, error, and remote operation signals
- With a timer controlled solenoid valve type auto drain

Optional accessories

- Foundation bolt set
- Piping adapter
- Bypass piping set

Auto Drain Valve
Longer life, Higher resistance to foreign matter



Non-sliding part reduces the catching of foreign matter

Diaphragm type
Poppet type

Shape prevents condensate accumulation

Condensate and foreign matter are discharged completely.

Easier maintenance

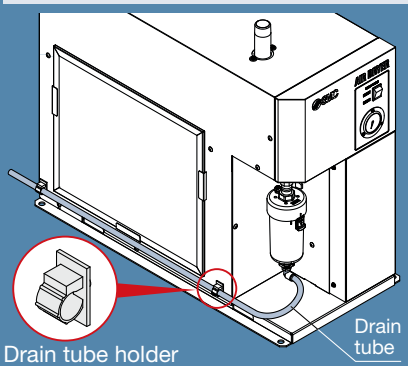
- **One-touch mounting and removal of the bowl is possible without using any tools.**

Release the lock by sliding the lock button down while holding the body. Then, rotate the bowl guard and pull down for removal.

Transparent bowl guard

- **Allows you to visually check the condensate condition in the bowl**
- **Improved environmental durability due to 2-layer construction**

Drain tube holder (Accessory)



Low GWP Refrigerant | For Use in Europe

Refrigerant R454C (HFC)

IDFA60/70/80/90 Series

(Max. inlet air temperature: 65°C, Max. ambient temperature: 45°C)

For use in Asia and Oceania | p. 15

How to Order

Refrigerant

Symbol	Description
F	Low GWP refrigerant

IDFA 60 – 23 – Nil/A/C F Nil/G/L/R/T/V

Size

60
70
80
90

Voltage

Symbol	Voltage
23	Single-phase 230 VAC (50 Hz)

Options

Symbol	Description
Nil	None
A	Cool compressed air output
C	Anti-corrosive treatment for copper tube
G	With Chinese labels and a Chinese operation manual
L	With a heavy-duty auto drain (The maximum operating pressure is 1.6 MPa.)
R	With an earth leakage breaker
T	With a terminal block for operating, error, and remote operation signals
V	With a timer controlled solenoid valve type auto drain (The maximum operating pressure is 1.6 MPa.)

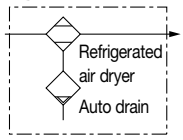
* When multiple options are combined, indicate symbols in alphabetical order.
* The combination of option L and V is not available.

Options	▸ p. 27
Optional Accessories	▸ p. 30

Standard Specifications

Specifications \ Model					IDFA60-F	IDFA70-F	IDFA80-F	IDFA90-F
Operating range*1	Fluid				Compressed air			
	Inlet air temperature			[°C]	5 to 65			
	Inlet air pressure			[MPa]	0.15 to 1.0*8			
	Ambient temperature (Humidity)			[°C]	2 to 45 (Relative humidity: 85% or less)			
Rated conditions*4	Air flow capacity [m³/h]	Standard condition (ANR)*2	Outlet air pressure dew point	3°C	204	312	552	810
			Outlet air pressure dew point	7°C	300	408	654	900
			Outlet air pressure dew point	10°C	360	480	720	960
		Compressor intake condition*3	Outlet air pressure dew point	3°C	216	331	585	859
			Outlet air pressure dew point	7°C	318	432	693	954
			Outlet air pressure dew point	10°C	382	509	763	1018
	Inlet air pressure			[MPa]	0.7			
	Inlet air temperature			[°C]	35			
	Ambient temperature			[°C]	25			
	Power supply voltage (Frequency)				Single-phase 230 VAC (50 Hz) Allowable voltage range ±10%*5			
Maximum air flow capacity					Air flow capacity calculated with the correction factors			
Electric spec.	Power consumption*6			[W]	1140	1740	2180	2950
	Current consumption*6			[A]	7.1	10.0	10.6	13.5
Applicable earth leakage breaker capacity*7				[A]	15	15	20	30
Cooling method					Air-cooled refrigeration			
Refrigerant					R454C (HFC)*9			
Refrigerant charge				[g]	350 ±10	510 ±10	840 ±10	1090 ±10
Auto drain					Float type (Normally open, Min. operating pressure: 0.1 MPa)			
Port size					R1	R1 1/2	R2	
Weight				[kg]	51	73	112	121
Accessories					Drain tube (ø12: 3.5 m), Drain tube holder, Operation manual			

Symbol



*1 The operating range does not guarantee use with normal air flow capacity.
*2 Air flow capacity under the standard condition (ANR) [atmospheric pressure 20°C, relative humidity 65%]
*3 Air flow capacity converted by the compressor intake condition [32°C, Atmospheric pressure, and 75% relative humidity]
*4 When the operating conditions are different from the rated values, select a model in accordance with Model Selection (page 4) or calculate the air flow capacity suitable to the operating conditions based on the Correction of Air Flow Capacity.
*5 Do not use this product with continuous voltage fluctuations.
*6 These values are reference values under rated conditions and are not guaranteed. Do not use these values for the thermal relay set values, etc.
*7 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 30 mA.
*8 The maximum operating pressure is 1.0 MPa as standard, but it is possible to achieve 1.6 MPa when selecting option L or V.
*9 R454C is a slightly flammable refrigerant. Avoid using this product in proximity to open flames.

Correction of Air Flow Capacity

Inlet air temperature [°C]

°C	5 to 25	30	35	40	45	50	55	60	65
Correction factors	1.42	1.15	1.00	0.71	0.62	0.50	0.40	0.33	0.21

Ambient temperature [°C]

°C	2 to 25	30	35	40	45
Correction factors	1.00	0.85	0.80	0.73	0.62

Inlet air pressure [MPa]

MPa	0.3	0.4	0.5	0.6	0.7 to 1.6
Correction factors	0.71	0.75	0.82	0.89	1.00

Calculation example: The air flow capacity when the dew point of the IDFA60 is set to 10°C under the following conditions is calculated. [Operating conditions: Inlet air temperature: 35°C, Ambient temperature: 35°C, Inlet air pressure: 0.6 MPa]
360 m³/h (ANR) x 1.00 x 0.80 x 0.89 = 256 m³/h (ANR)

For Use in Asia and Oceania

Refrigerant R410A (HFC)

IDFA60/70/80/90 Series

(Max. inlet air temperature: 65°C, Max. ambient temperature: 45°C)

For use in Europe | p. 13

How to Order

IDFA 60 – 23 – [Nil / A / C / G / L / R / T / V]

Size

60
70
80
90

Voltage

Symbol	Voltage
23	Single-phase 230 VAC (50 Hz)

Options

Symbol	Description
Nil	None
A	Cool compressed air output
C	Anti-corrosive treatment for copper tube
G	With Chinese labels and a Chinese operation manual
L	With a heavy-duty auto drain (The maximum operating pressure is 1.6 MPa.)
R	With an earth leakage breaker
T	With a terminal block for operating, error, and remote operation signals
V	With a timer controlled solenoid valve type auto drain (The maximum operating pressure is 1.6 MPa.)

* When multiple options are combined, indicate symbols in alphabetical order.
* The combination of option L and V is not available.

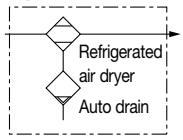
Options	▸ p. 27
Optional Accessories	▸ p. 30

Standard Specifications

Specifications \ Model					IDFA60	IDFA70	IDFA80	IDFA90
Operating range*1	Fluid				Compressed air			
	Inlet air temperature			[°C]	5 to 65			
	Inlet air pressure			[MPa]	0.15 to 1.0*8			
	Ambient temperature (Humidity)			[°C]	2 to 45 (Relative humidity: 85% or less)			
Rated conditions*4	Air flow capacity [m³/h]	Standard condition (ANR)*2	Outlet air pressure dew point	3°C	204	312	552	810
			Outlet air pressure dew point	7°C	300	408	654	900
			Outlet air pressure dew point	10°C	360	480	720	960
		Compressor intake condition*3	Outlet air pressure dew point	3°C	216	331	585	859
			Outlet air pressure dew point	7°C	318	432	693	954
			Outlet air pressure dew point	10°C	382	509	763	1018
	Inlet air pressure			[MPa]	0.7			
	Inlet air temperature			[°C]	35			
	Ambient temperature			[°C]	25			
	Power supply voltage (Frequency)				Single-phase 230 VAC (50 Hz) Allowable voltage range ±10%*5			
Maximum air flow capacity					Air flow capacity calculated with the correction factors			
Electric spec.	Power consumption*6			[W]	820	1300	1950	2220
	Current consumption*6			[A]	4.9	7.2	12.0	13.0
Applicable earth leakage breaker capacity*7				[A]	10	15	20	30
Cooling method					Air-cooled refrigeration			
Refrigerant					R410A (HFC)			
Refrigerant charge				[g]	390 ±10	530 ±10	630 ±10	780 ±10
Auto drain					Float type (Normally open, Min. operating pressure: 0.1 MPa)			
Port size					R1	R1 1/2	R2	
Weight				[kg]	49	68	95	110
Accessories					Drain tube (ø12: 3.5 m), Drain tube holder, Operation manual			

*1 The operating range does not guarantee use with normal air flow capacity.
*2 Air flow capacity under the standard condition (ANR) [atmospheric pressure 20°C, relative humidity 65%]
*3 Air flow capacity converted by the compressor intake condition [32°C, Atmospheric pressure, and 75% relative humidity]
*4 When the operating conditions are different from the rated values, select a model in accordance with Model Selection (page 4) or calculate the air flow capacity suitable to the operating conditions based on the Correction of Air Flow Capacity.
*5 Do not use this product with continuous voltage fluctuations.
*6 These values are reference values under rated conditions and are not guaranteed. Do not use these values for the thermal relay set values, etc.
*7 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 30 mA.
*8 The maximum operating pressure is 1.0 MPa as standard, but it is possible to achieve 1.6 MPa when selecting option L or V.

Symbol



Correction of Air Flow Capacity

Inlet air temperature [°C]

°C	5 to 25	30	35	40	45	50	55	60	65
Correction factors	1.42	1.15	1.00	0.71	0.62	0.50	0.40	0.33	0.21

Ambient temperature [°C]

°C	2 to 25	30	35	40	45
Correction factors	1.00	0.85	0.80	0.73	0.62

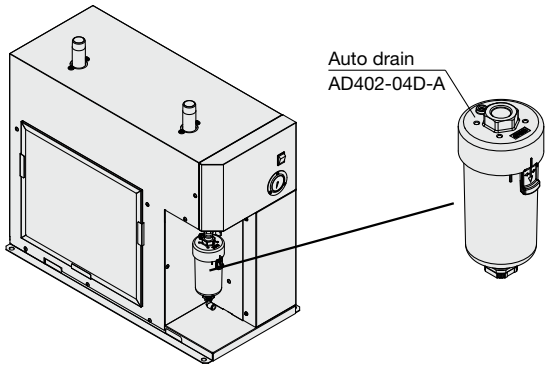
Inlet air pressure [MPa]

MPa	0.3	0.4	0.5	0.6	0.7 to 1.6
Correction factors	0.71	0.75	0.82	0.89	1.00

Calculation example: The air flow capacity when the dew point of the IDFA60 is set to 10°C under the following conditions is calculated. [Operating conditions: Inlet air temperature: 35°C, Ambient temperature: 35°C, Inlet air pressure: 0.6 MPa]
360 m³/h (ANR) x 1.00 x 0.80 x 0.89 = 256 m³/h (ANR)

Replacement Parts

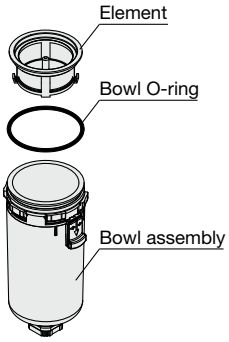
Auto drain



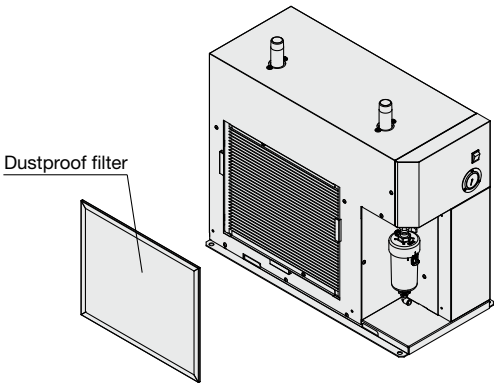
Auto Drain Replacement Part Nos.

Description	Part no.	Qty.
Element	**AD402P-040S**	1
Bowl O-ring	**KA00463**	1
Bowl assembly*1	**AD52-A**	1

*1 A bowl O-ring is included.
A one-touch fitting for connecting the drain tube is not included.



Dustproof filter

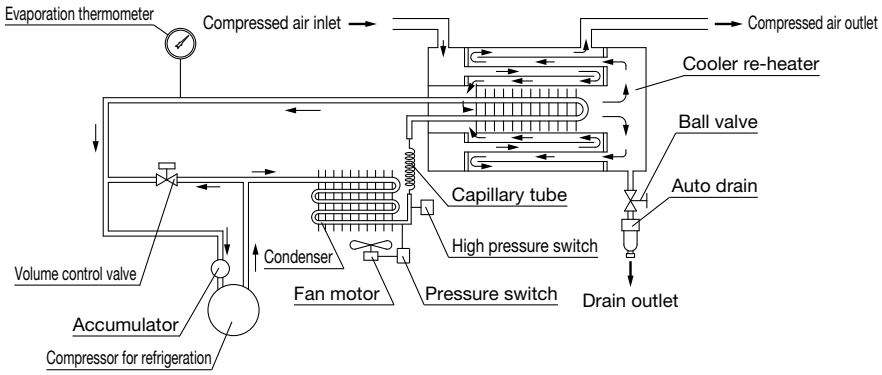


Dustproof Filter Replacement Part Nos.

Part no.	Qty.	Dimension [mm]	Applicable model
IDF-S0530	1	H370 x W440	For IDFA60
IDF-S0531	1	H614 x W440	For IDFA70
IDF-S0535	1	H614 x W556	For IDFA80, IDFA90

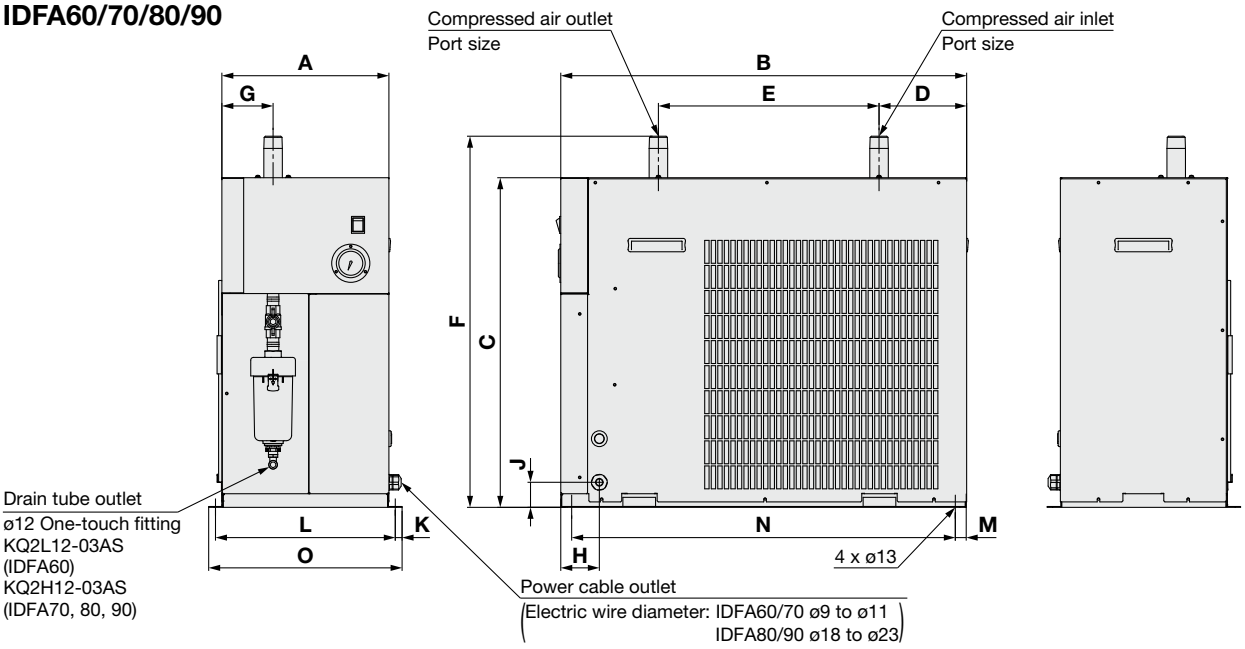
Construction (Air/Refrigerant Circuit)

Humid, hot air coming into the air dryer will be cooled down by a cooler re-heater (heat exchanger). Water condensed at this time will be removed from the air by an auto drain and drained out automatically. Air separated from the water will be heated by a cooler re-heater (heat exchanger) to obtain the dried air, which goes through to the outlet side.



Dimensions

IDFA60/70/80/90



[mm]

Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	N	O
IDFA60	R1	307	745	605	161	405	681	94	71	46	12.5	330	20	704	355
IDFA70	R1 1/2	342	890	825	176	480	905		68			365		849	390
IDFA80	R2	438	957	863	169		958	219	78	100	11	463		916	485
IDFA90															

Low GWP Refrigerant | For Use in Europe

Refrigerant R454C (HFC)

IDFA100F/125F/150F Series

(Max. inlet air temperature: 60°C, Max. ambient temperature: 45°C)

For use in Asia and Oceania | p. 21

How to Order

IDFA 100F – 40 – Nil/C F Nil/G/K/R/V

Refrigerant

Symbol	Description
F	Low GWP refrigerant

Size

Size
100F
125F
150F

Voltage

Symbol	Voltage
40	Three-phase 400 VAC (50 Hz)

Option

Symbol*1	Description
Nil	None
C	Anti-corrosive treatment for copper tube
G	With Chinese labels and a Chinese operation manual
K	Moderate pressure specification (1.6 MPa)*2
R	With a circuit breaker
V	With a timer controlled solenoid valve type auto drain

*1 Enter alphabetically when multiple options are combined.
Example: When the IDFA100F-40F is provided with option C, R, and V, the model number will be the IDFA100F-40-CFRV.

*2 Option K is only available for the IDFA100F-40-F.

Options ▸ p. 25
Optional Accessories ▸ p. 29

Standard Specifications

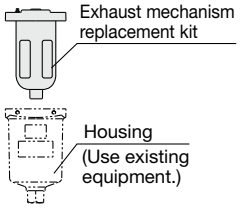
Specifications \ Model			IDFA100F-40-F	IDFA125F-40-F	IDFA150F-40-F
Operating range*3	Fluid		Compressed air		
	Inlet air temperature [°C]		5 to 60		
	Inlet air pressure [MPa]		0.15 to 1.0*6		
	Ambient temperature (humidity) [°C]		2 to 45 (Relative humidity 85% or less)		
Rated conditions	Air flow capacity m³/h	Standard condition (ANR)*1	860	1100	1340
		Compressor intake*2 condition	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		
Electric specifications	Power supply voltage		Three-phase 400 VAC		
	Power consumption [kW]		2.8	3.1	3.3
	Operating current [A]		5.2	6.3	6.6
Applicable circuit breaker capacity*4 [A]			15		
Heat discharge from condenser [kW]			7.3	8.4	10.6
Refrigerant			R454C (HFC)*7		
Refrigerant charge [kg]			1.25	1.36	1.8
Auto drain			Float type (Normally open) Option V stands for a timer type solenoid valve.		
Port size			R2	R2 1/2	DIN flange 80
Weight [kg]			245	270	350
Compliant standards			CE/UKCA marking		

*1 Air flow capacity under the standard condition (ANR) [atmospheric pressure 20°C, relative humidity 65%]
*2 Air flow capacity converted by the compressor intake condition [32°C, Atmospheric pressure, and 75% relative humidity]
*3 The operation range does not guarantee the use with normal air flow capacity. When operating conditions are different from the rated specifications, please select a model in accordance with Model Selection (page 3).
*4 Products other than option R are not equipped with an earth leakage breaker. Purchase an appropriate earth leakage breaker separately.

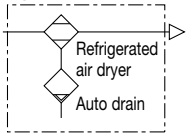
Replacement Parts

Air dryer model	IDFA100F	IDFA125F	IDFA150F
Heavy-duty auto drain replacement part no.*5	ADH-E400		
Dustproof filter set for condenser	IDF-FL219		IDF-FL220

*5 Part number of only the exhaust mechanism replacement kit excluding the housing
*6 The maximum operating pressure is 1.0 MPa as standard, but it is possible to achieve 1.6 MPa when selecting option K. (IDFA100F-40-F only)
*7 R454C is a slightly flammable refrigerant. Avoid using this product in proximity to open flames.
* A terminal block for remote operation, stop, operating, and error signals is include as standard equipment.

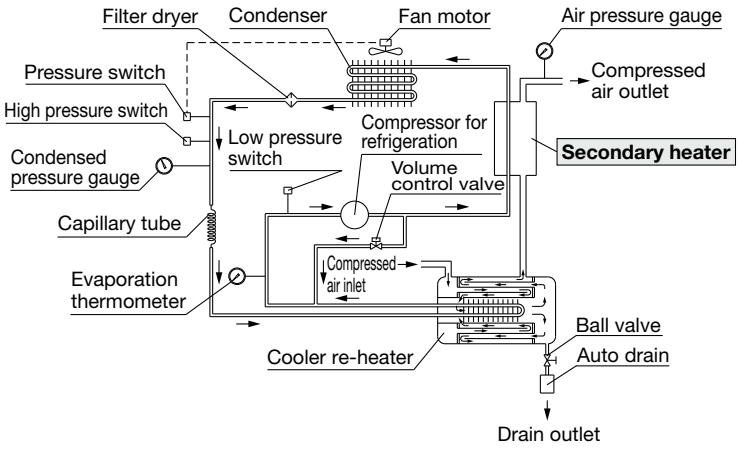


Symbol



Construction (Air/Refrigerant Circuit)

IDFA100F-F/125F-F/150F-F



Hot and humid air entering the air dryer is cooled down by the cooler re-heater (heat exchanger). The moisture which is condensed and separated is automatically exhausted by the auto drain. The air which has had its moisture removed is heated in two stages by the re-heater (heat exchanger) in the cooler re-heater and by the secondary heater, and is supplied to the outlet side as warm and dry air.

Secondary heater

Compressed air from which drainage has been exhausted exchanges heat with refrigerant which has been compressed by the refrigerator, to give the following effects:

1. The outlet air temperature increases, preventing condensation of the piping on the outlet side.
2. The amount of heat exhausted from the condenser is reduced.
3. Energy saving operation of the dryer is achieved by reducing the amount of heat exhausted from the condenser.

For Use in Asia and Oceania

Refrigerant R407C (HFC)

IDFA100F/125F/150F Series

(Max. inlet air temperature: 60°C, Max. ambient temperature: 45°C)

For use in Europe | p. 19

How to Order

IDFA **100F** – **38** – **Nil / C / G / K / R / V**

Size

Size
100F
125F
150F

Voltage

Symbol	Voltage
38	Three-phase 380 VAC (50 Hz)
40	Three-phase 400 VAC (50 Hz)

Option

Symbol*1	Description
Nil	None
C	Anti-corrosive treatment for copper tube
G	With Chinese labels and a Chinese operation manual
K	Moderate pressure specification (1.6 MPa)
R	With a circuit breaker
V	With a timer controlled solenoid valve type auto drain

*1 Enter alphabetically when multiple options are combined.
Example: When the IDFA100F-38 is provided with option C, R, and V, the model number will be the IDFA100F-38-CRV.

Options	▸ p. 25
Optional Accessories	▸ p. 29

Standard Specifications

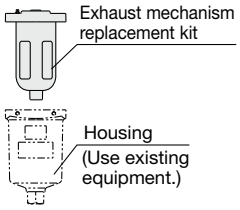
Specifications \ Model			IDFA100F-38	IDFA125F-38	IDFA150F-38	IDFA100F-40	IDFA125F-40	IDFA150F-40
Operating range*3	Fluid		Compressed air					
	Inlet air temperature [°C]		5 to 60					
	Inlet air pressure [MPa]		0.15 to 1.0					
	Ambient temperature (humidity) [°C]		2 to 45 (Relative humidity 85% or less)					
Rated conditions	Air flow capacity m³/h	Standard condition (ANR)*1	960	1210	1500	860	1100	1340
		Compressor intake*2 condition	1000	1255	1560	875	1119	1363
	Inlet air pressure [MPa]		0.7					
	Inlet air temperature [°C]		40			35		
	Ambient temperature [°C]		32			25		
	Outlet air pressure dew point [°C]		10			3		
Electric specifications	Power supply voltage		Three-phase 380 VAC			Three-phase 400 VAC		
	Power consumption [kW]		2.8	3.4	3.4	2.5	2.7	2.7
	Operating current [A]		5.1	6.3	6.3	4.5	5.3	5.9
Applicable circuit breaker capacity*4 [A]			15					
Heat discharge from condenser [kW]			7.5	9	11.5	7	8	10
Refrigerant			R407C (HFC)					
Refrigerant charge [kg]			1.25	1.36	2.0	1.25	1.36	1.8
Auto drain			Float type (Normally open) Option V stands for a timer type solenoid valve.					
Port size			R2	R2 1/2	DIN flange 80	R2	R2 1/2	DIN flange 80
Weight [kg]			245	270	350	245	270	350
Compliant standards			CE/UKCA marking					

*1 Air flow capacity under the standard condition (ANR) [atmospheric pressure 20°C, relative humidity 65%]
*2 Air flow capacity converted by the compressor intake condition [32°C, Atmospheric pressure, and 75% relative humidity]
*3 The operation range does not guarantee the use with normal air flow capacity. When operating conditions are different from the rated specifications, please select a model in accordance with Model Selection (page 3).
*4 Products other than option R are not equipped with an earth leakage breaker. Purchase an appropriate earth leakage breaker separately.

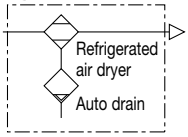
Replacement Parts

Air dryer model	IDFA100F	IDFA125F	IDFA150F
Heavy-duty auto drain replacement part no.*5	ADH-E400		
Dustproof filter set for condenser	IDF-FL219		IDF-FL220

*5 Part number of only the exhaust mechanism replacement kit excluding the housing

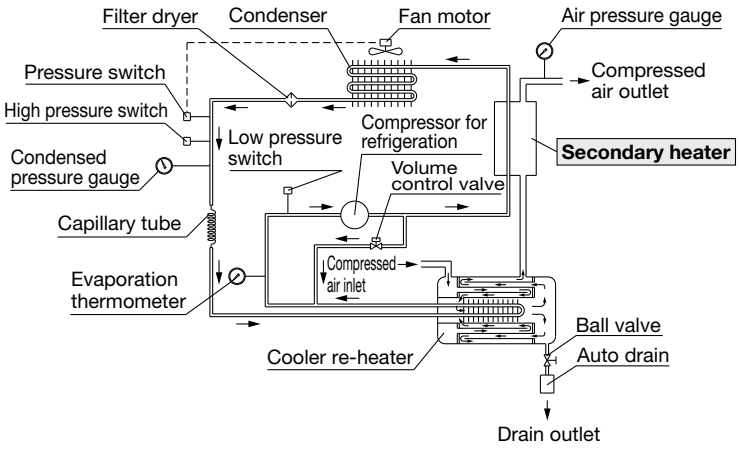


Symbol



Construction (Air/Refrigerant Circuit)

IDFA100F/125F/150F



Hot and humid air entering the air dryer is cooled down by the cooler re-heater (heat exchanger). The moisture which is condensed and separated is automatically exhausted by the auto drain. The air which has had its moisture removed is heated in two stages by the re-heater (heat exchanger) in the cooler re-heater and by the secondary heater, and is supplied to the outlet side as warm and dry air.

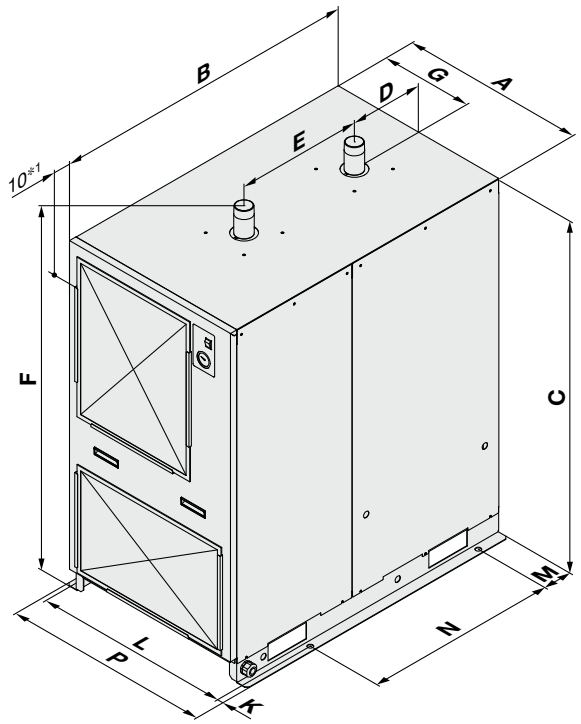
Secondary heater

Compressed air from which drainage has been exhausted exchanges heat with refrigerant which has been compressed by the refrigerator, to give the following effects:

1. The outlet air temperature increases, preventing condensation of the piping on the outlet side.
2. The amount of heat exhausted from the condenser is reduced.
3. Energy saving operation of the dryer is achieved by reducing the amount of heat exhausted from the condenser.

Dimensions

IDFA100F/125F

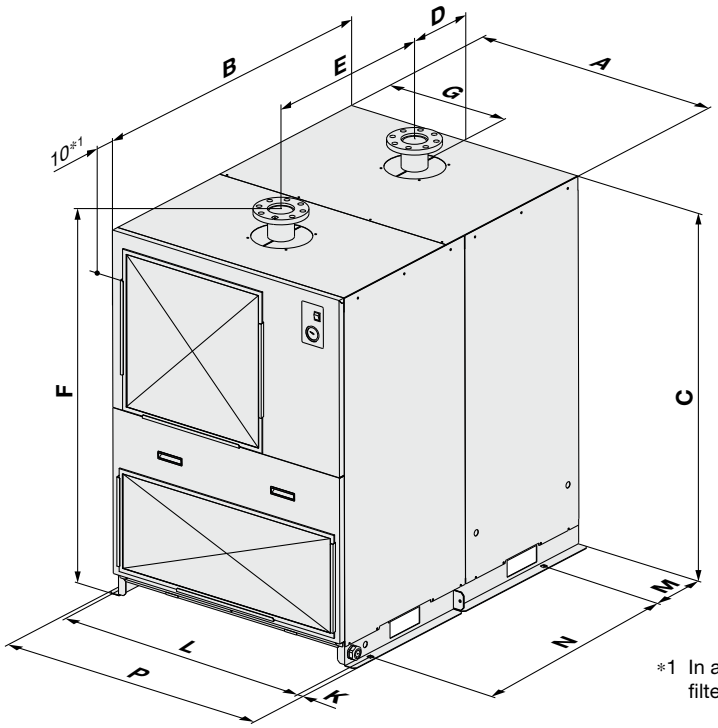


*1 In addition to the overall length of the body, the filter mounting part (bracket) projects 10 mm.

Dimensions [mm]

Model	Port size	A	B	C	D	E	F	G	K	L	M	N	P
IDFA100F-38/40	R2	670	1120	1276	267	460	1375	335	20	712	107	700	752
IDFA100F-40-F		690											
IDFA125F-38/40	R2 1/2	700				655		350			78	935	
IDFA125F-40-F		710						355					

IDFA150F



*1 In addition to the overall length of the body, the filter mounting part (bracket) projects 10 mm.

Dimensions [mm]

Model	Port size	A	B	C	D	E	F	G	K	L	M	N	P
IDFA150F	DIN flange 80	950	1290	1332	268	720	1432	475	20	990	217	935	1030

IDFA□E/F Series
Options

For "How to Order" optional models, refer to pages 5, 7, 19 and 21.

A Option symbol
Cool compressed air output — IDFA3E to 11E

There is no heating of cooled, dehumidified air as it leaves the air dryer.
The air flow capacity with this option is smaller than that of the standard dryer. (The external dimensions are identical with the standard product.)
* Perform thermal insulation treatment for piping and equipment installed after the dryer to prevent the formation of condensation.

Air Flow Capacity

Model	IDFA3E	IDFA4E	IDFA6E	IDFA8E	IDFA11E
Air flow capacity m^3/h (ANR)	8	23	29	32	39

Conditions: Inlet air pressure: 0.7 MPa, Inlet air temperature: 35°C ,
Outlet air temperature: 10°C Ambient temperature: 25°C

C Option symbol
Anti-corrosive treatment — IDFA all models

This minimizes the corrosion of the copper and copper alloy parts when the air dryer is used in an atmosphere containing hydrogen sulfide or sulfurous acid gas. (Corrosion cannot be completely prevented.)
Special epoxy coating: Copper tube and copper alloy parts.
The coating is not applied on the heat exchanger or around electrical parts, where operation may be affected by the coating.
* Corrosion is not covered under warranty.

G Option symbol
With Chinese labels and a Chinese operation manual — IDFA all models

In addition, Chinese labels are put on the external panels.
A Chinese operation manual is also included.

K Option symbol
Moderate pressure specification (Auto drain bowl type: Metal bowl with level gauge) — IDFA6E to 15E1

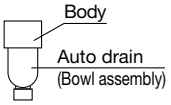
The auto drain is changed from the standard one to one with a moderate pressure specification.
A metal bowl with a level gauge which can confirm the water level is used for the auto drain.

Specifications
1. Maximum operating pressure: 1.6 MPa
2. Dimensions ··· same as standard products

Replacement Parts

Model	Auto drain assembly part no.	Note
IDFA6E to 15E1	IDF-S1926	The AD48-8-A-X2112 auto drain (bowl assembly) excluding the body, insulator, and one-touch fitting are included.

* A new line of auto drain models was recently introduced in March 2019. The previous models and the new models do not have mounting interchangeability. For details, refer to page 31.



K Option symbol
Moderate pressure specification — IDFA100F-40-F, IDFA100F to 150F

The maximum operating pressure is 1.6 MPa.
The internal drain piping material is changed from nylon to metal.

Specifications
1. Maximum operating pressure: 1.6 MPa
2. Dimensions ··· same as standard products

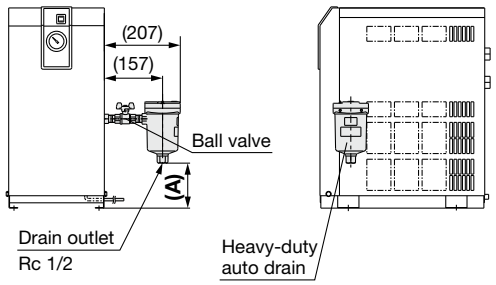
L Option symbol
With a heavy-duty auto drain (Applicable to moderate pressure) — IDFA4E to 15E1

The float type auto drain used in the standard air dryer is replaced with a heavy-duty auto drain (ADH4000-04) which enables the drainage to discharge more efficiently.

Dimensions [mm]

Model	A
IDFA4E	55
IDFA6E	67
IDFA8E, 11E	139
IDFA15E1	47

IDFA4E to 15E1



Replacement Parts: Auto Drain

Model	Replacement part no. (Description)	Configuration
IDFA4E to 15E1	ADH4000-04 (Heavy-duty auto drain)	 Heavy-duty auto drain

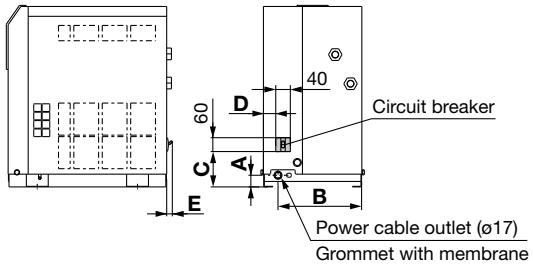
R Option symbol

With a circuit breaker

IDFA4E to 15E1, IDFA100F to 150F

A circuit breaker with cover is attached to the side of the air dryer. This saves additional electrical wiring at the time of installation.

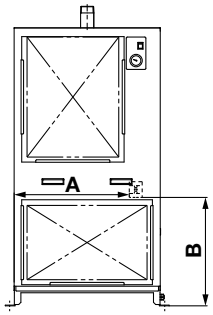
IDFA4E to 15E1



Dimensions [mm]

Model	A	B	C	D	E
IDFA4E, 6E, 8E, 11E	32	230	97	34	15
IDFA15E1	43	258	102	82	—

IDF100F to 150F



Dimensions [mm]

Model	A	B
IDFA100F	509	535
IDFA125F	505	
IDFA150F	628	537

Breaker Capacity and Sensitivity Current

Voltage	Model	Breaker capacity	Sensitivity current
230 V type	**IDFA4E-23, IDFA6E-23 IDFA8E-23, IDFA11E-23**	5 A	30 mA
	IDFA15E1-23	10 A	
380/400 V type	**IDFA100F, IDFA125F IDFA150F**	15 A	

T Option symbol

With a terminal block for power supply, run & alarm signal and remote operation

IDFA4E to 15E1

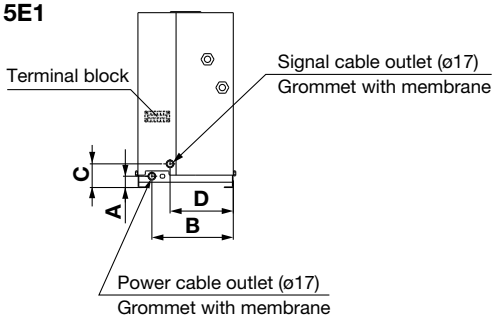
In addition to the terminals for the power supply, terminals for the operating signal and the error signal are also available. (No-voltage contact)
Also, in the case of remote control, operate it from the power supply side while the air dryer switch remains ON.

Contact capacity: 230 VAC, 4 A 24 VDC, 5 A for operating and error signals.

Minimum current value: 20 V, 5 mA (AC/DC) for operating and error signals.

* Terminal block for power supply, run & alarm signal and remote operation is mounted on the standard types of the IDFA100F to 150F.
* Please be sure to confirm the electric circuits with the drawings or instruction manual before using the output signal.

IDFA4E to 15E1



Dimensions [mm]

Model	A	B	C	D
IDFA4E, 6E, 8E, 11E	32	230	67	179
IDFA15E1	43	258	77	158

V Option symbol

With a timer controlled solenoid valve type auto drain (Applicable to moderate pressure)

IDFA4E to 15E1 IDFA100F to 150F

Drainage is discharged by controlling a solenoid valve with a timer.
A strainer for solenoid valve protection and stop valve are also included.
(Dimensions are the same as the standard type.)

Maximum operating pressure: 1.6 MPa (IDFA100F to 150F: 1.0 MPa)

* The timer-type solenoid valve actuates once (for 0.5 s) every 30 s.

Replacement Parts

Model	Part no.	Note
IDFA4E to 15E1	IDF-S0198	230 VAC
IDFA100F to 150F	IDF-S0405	200 VAC

IDFA60/70/80/90 Series
Options

A Option symbol
Cool compressed air output

Cool outlet air (10°C) can be supplied.
The air flow with this option is smaller than that of the standard air dryer. (Refer to the table below.)
If the air dryer is used out of the scope of the rated specifications or conditions, select a model according to page 4 and apply the air flow capacity shown in the table below to the data Ⓓ.

* Perform thermal insulation treatment for pipings and equipment installed after the dryer to prevent the formation of condensation.

Air Flow Capacity

Model		Air flow capacity m³/h (ANR)			
		IDFA60-23-A	IDFA70-23-A	IDFA80-23-A	IDFA90-23-A
Outlet air pressure dew point	10°C	186	300	462	576

Rated conditions: Inlet air pressure: 0.7 MPa, Inlet air temperature: 35°C, Outlet air temperature: 10°C

C Option symbol
Anti-corrosive treatment for copper tube

This minimizes the corrosion of the copper and copper alloy parts when the air dryer is used in an atmosphere containing hydrogen sulfide or sulfurous acid gas. (Corrosion cannot be completely prevented.)
Special epoxy coating: Copper tube and copper alloy parts. The coating is not applied on the heat exchanger or around electrical parts, where operation may be affected by the coating.

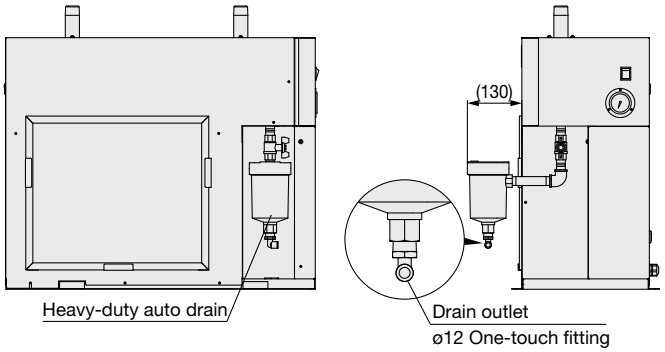
* Failure due to corrosion is not covered under warranty.

G Option symbol
With Chinese labels and a Chinese operation manual

In addition, Chinese labels are put on the external panels.
A Chinese operation manual is also included.

L Option symbol
With a heavy-duty auto drain (applicable to moderate pressure)

The float type auto drain used in the standard air dryer is replaced with a heavy-duty auto drain (ADH4000-04) which enables the condensate to discharge more efficiently. The product can be used for moderate pressure with this option.
Max. operating pressure: 1.6 MPa



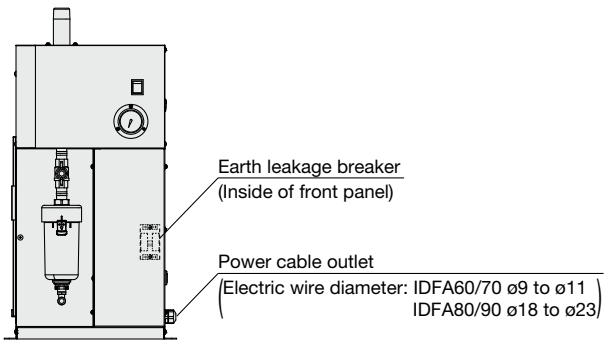
* The heavy-duty auto drain and piping materials (nipple, elbow) are shipped together with the main body of the air dryer. Customers are required to mount the parts to the air dryer.

Replacement Parts: Heavy-Duty Auto Drain

Replacement part no. (Description)	Configuration
ADH4000-04 (Heavy-duty auto drain)	Heavy-duty auto drain
ADH-E400 (Replacement kit for exhaust mechanism)	Replacement kit for exhaust mechanism Housing (Use existing equipment.)

R Option symbol
With an earth leakage breaker

The air dryer is equipped with an earth leakage breaker, reducing the electrical wiring required during installation.

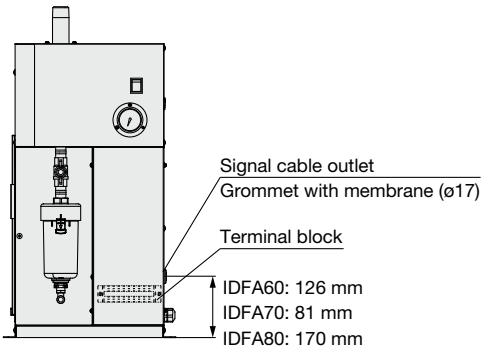


T Option symbol

With a terminal block for operating, error, and remote operation signals

In addition to power supply connection, terminal blocks for operating, error, and remote operation signals are available.

- The operating and error signals are no-voltage contact style.
  Operating signal…During operation: contact "close", During stop: contact "open"
  Error signal…During error: contact "close", During stop: contact "open"
  Contact capacity…Rated load voltage: 240 VAC or less/24 VDC or less
  Max. load current: 5 A (Resistance load)/2 A (Induction load)
  Min. applicable load: 20 VDC, 3 mA
- Power supply voltage is applied to the remote operation contact. The external switch is to be prepared by customers. Position holding switch (alternate type switch) or automatic return switch (momentary switch) can be used.



V Option symbol

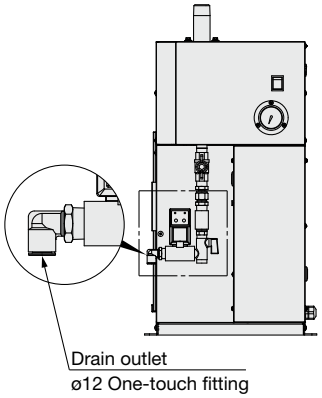
With a timer controlled solenoid valve type auto drain (applicable to moderate pressure)

Drainage is discharged by controlling a solenoid valve with a timer.
A strainer for solenoid valve protection and a stop valve are also included.

Max. operating pressure: 1.6 MPa

Replacement Parts

Part no.	Note
IDF-S0534	200 to 230 VAC



IDFA□E/F Series
Optional Accessories

	Features	Specifications	Applicable dryer
Dust-protecting filter set 	Prevents a decline in the performance of the air dryer, even in a dusty atmosphere.	Max. ambient temperature 40°C	IDFA3E to 75E
Foundation bolt set 	Bolts for fixing the air dryer to the foundations. Easy to secure by striking its axle.	Stainless steel	IDFA4E to 75E IDFA100F to 150F

How to Order

Dust-protecting filter set

IDF — FL 209

Applicable dryer

Symbol	Applicable dryer
209	IDFA3E
202	IDFA4E
203	IDFA6E
204	IDFA8E
205	IDFA11E
206	IDFA15E1

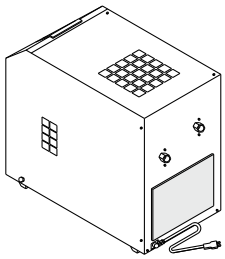
Foundation bolt set

IDF — AB 500

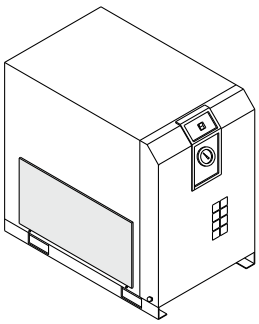
Applicable dryer

Symbol	Applicable dryer
500	IDFA4E to 15E1
501	IDFA100F to 150F

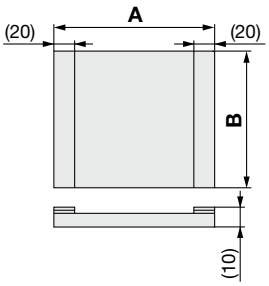
Dust-protecting Filter Set/Dimensions



(IDF-FL209)



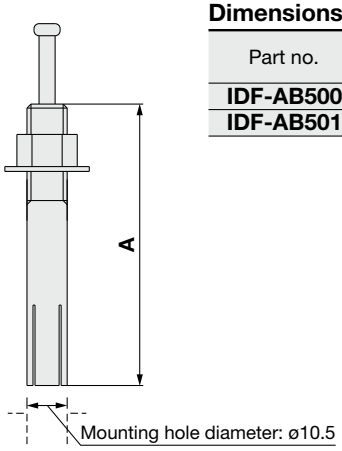
(IDF-FL202 to 206)



Dimensions [mm]

Part no.	Applicable dryer	A	B	Weight (g)
IDF-FL209	IDFA3E	220	240	35
IDF-FL202	IDFA4E	310	195	45
IDF-FL203	IDFA6E	375		55
IDF-FL204	IDFA8E	340	265	70
IDF-FL205	IDFA11E	375		75
IDF-FL206	IDFA15E1	440	370	120

Foundation Bolt Set/Dimensions

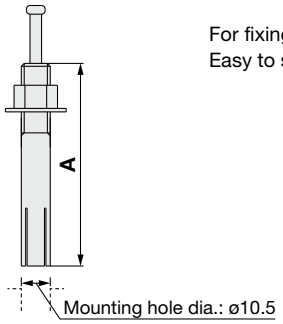


Dimensions [mm]

Part no.	Applicable dryer	Nominal thread size	Material	Pcs. of 1 set	A
IDF-AB500	IDFA4E to 15E1	M10	Stainless steel	4	50
IDF-AB501	IDFA100F to 150F				70

Optional Accessories

Foundation Bolt Set

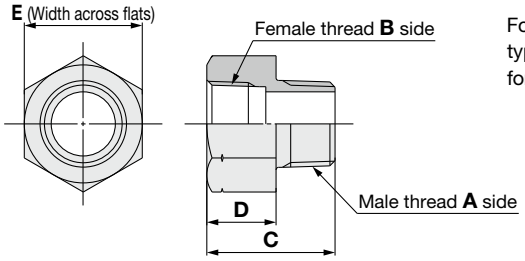


For fixing the air dryer to the foundations.
Easy to secure by striking the axle.

[mm]

Part no.	Nominal thread size	Material	Number of 1 set	A
IDF-AB500	M10	Stainless steel	4	50

Piping Adapter



For converting the thread type of an IN/OUT fitting for air dryers.

[mm]

Part no.	Thread type and port size		C	D	E	Material	Number of 1 set
	Male thread **A** side	Female thread **B** side					
IDF-AP604	NPT1	Rc1	50	27	46	Brass	2
IDF-AP606	NPT1 1/2	Rc1 1/2	55	31	54		
IDF-AP607	NPT2	Rc2	65	30	70		

Bypass Piping Set

IDF – BP 339

Applicable air dryer

Symbol	Applicable dryer
339	IDFA60
340	IDFA70
341	IDFA80
	IDFA90

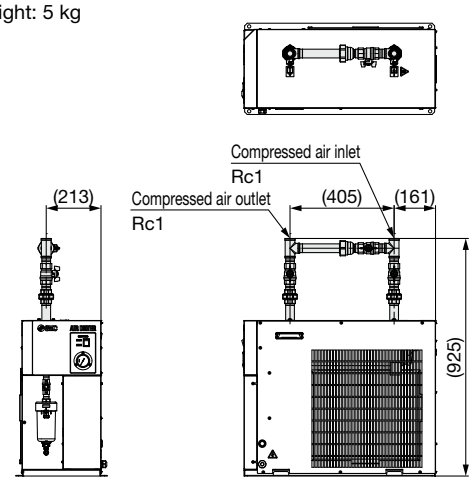
Max. operating pressure: 1.0 MPa

* Not applicable to the moderate pressure specification
  Prepare a bypass piping set suitable for the specification.

For IDFA60: IDF-BP339

[mm]

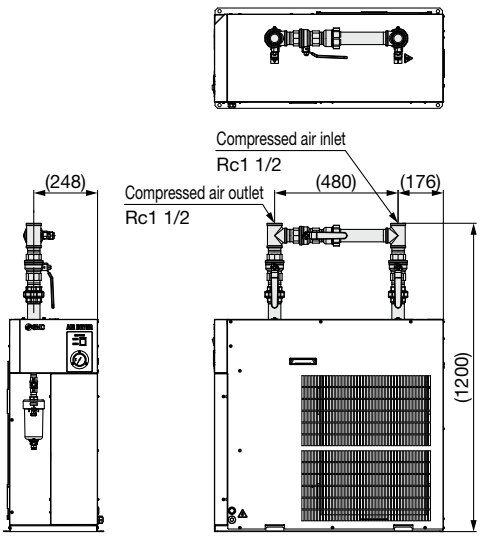
Weight: 5 kg



For IDFA70: IDF-BP340

[mm]

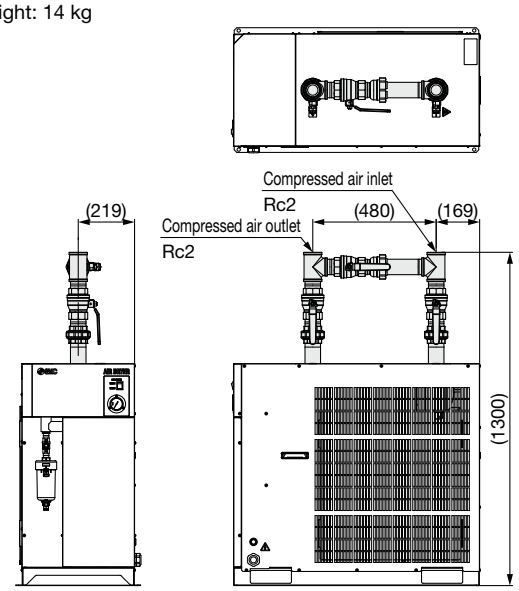
Weight: 10 kg



For IDFA80/90: IDF-BP341

[mm]

Weight: 14 kg



IDFA□E Series
Auto Drain Replacement Parts: Previous and New Model Product Nos.

As the auto drain part number differs depending on the serial number on the dryer specification label, be sure to confirm before ordering. There is no mounting interchangeability between the previous and new auto drains.

Auto drain (Bowl assembly)

Previous model

Metal bowl guard

New model

Transparent bowl guard
(Polycarbonate)

Dryer model	Auto drain (Bowl assembly) part no.		Manufacturing date	SERIAL No.
IDFA3E/4E	Previous	**AD38**	Manufactured in February 2019 and before	**XP and before**
	New	**AD38-D**∗1	Manufactured in March 2019 and after	**XQ and after**
IDFA6E/8E/11E/15E1/22E/37E	Previous	**AD48**	Manufactured in February 2019 and before	**XP and before**
	New	**AD48-D**∗1	Manufactured in March 2019 and after	**XQ and after**
IDFA55E/75E	Previous	**AD48**	Manufactured in May 2019 and before	**XS and before**
	New	**AD48-D**∗1	Manufactured in June 2019 and after	**XT and after**

∗1 The following models have mounting interchangeability: AD37-A and AD37-D, AD38-A and AD38-D, and AD48-A and AD48-D.
In addition, note that the AD37-A, AD38-A, and AD48-A will no longer be able to be ordered after April 2025.

Option K: Moderate pressure specification (Auto drain bowl type: Metal bowl with level gauge)

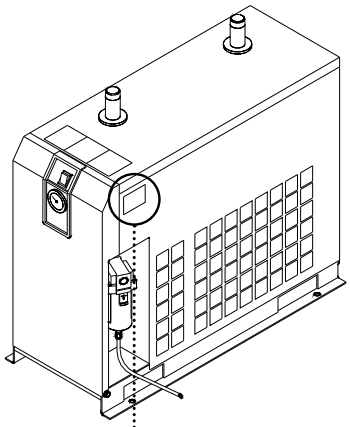
Previous model

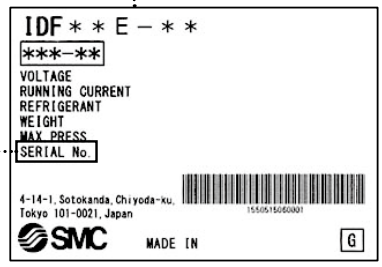
New model

Dryer model	Auto drain (Bowl assembly) part no.		Manufacturing date	SERIAL No.
IDFA6E/8E/11E/15E1 -K	Previous	**IDF-S0086**∗2	Manufactured in February 2019 and before	**XP and before**
	New	**IDF-S1926**∗3	Manufactured in March 2019 and after	**XQ and after**
IDFA22E/37E -K	Previous	**AD48-8-X2110**	Manufactured in February 2019 and before	**XP and before**
	New	**AD48-8-A-X2112**	Manufactured in March 2019 and after	**XQ and after**

∗2 Assembly of auto drain: AD48-8-X2110, one-touch fitting: KQ2H10-02AS, and insulator
∗3 Assembly of auto drain: AD48-8-A-X2112, one-touch fitting: KQ2H10-02AS, and insulator

Dryer specification label
Serial number confirmation method





Specification Label

SERIAL No.: X Q

Manufacturing year

Symbol	Year
A	1996
B	1997
⋮	⋮
W	2018
X	2019
Y	2020
⋮	⋮

Manufacturing month

Symbol	Month
o	1
P	2
Q	3
R	4
S	5
T	6
U	7
V	8
W	9
X	10
y	11
Z	12

IDFA□ Series
Specific Product Precautions 1

Be sure to read this before handling the products. For safety instructions and air preparation equipment precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website.

Design

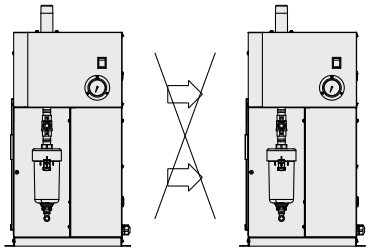
⚠ Warning

- Products with option "F" (low GWP refrigerant) selected use a slightly flammable refrigerant (R1234yf, R454C). Therefore, be sure to avoid using the products in close proximity to open flames.
  Ensure compliance with local laws and regulations regarding the use and application of this product.

Installation

⚠ Caution

- 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 40°C (2 to 45°C for the IDFA60 to IDFA150F)
  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 fields, strong magnetic fields, or surge voltages 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.
- Avoid conditions 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.
- 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.



Confirm that the exhaust air does not flow into the neighboring equipment.

- Avoid pneumatic circuits where rapid pressure fluctuations or flow speed changes are generated.
- When installing in locations where the dripping of condensation is a problem
  Depending on the operating conditions, the product and its downstream pipes could drip water due to condensation formed by supercooling. If this is a problem, install a drain receiver below this product or the condensation points and empty it regularly. Alternatively, wind additional insulation around the condensation points.

Drain Tube

⚠ Caution

- A tube with an outside diameter of 10 mm (an O.D. of 12 mm for the IDFA60 to IDFA90) is attached as a drain tube. Use this tube to discharge condensate to a drain tank, etc.
- Do not use the drain tube in an upward direction. Do not bend or crush the drain tube. If it is unavoidable that the tube goes upward, make sure it only goes as far as the position of the auto drain outlet. The drain tube to be prepared should have 5 m or less in length. Otherwise, the auto drain will not operate correctly, which may cause air to be blown constantly or moisture not to be exhausted.

Power Supply

⚠ Caution

- Connect the power supply to the terminal block.
- Install an earth leakage breaker*1 suitable to each model for the power supply.
- Maintain a voltage range within ±10% of the rated voltage. (Do not use this product with continuous voltage fluctuations.)

*1 Select an earth leakage breaker with a leak current sensitivity of 30 mA.
Regarding the rated current, refer to the Applicable Earth Leakage Breaker Capacity.

- When a short-term interruption of the power supply (including momentary interruptions) occurs in this equipment, the restarting of normal operations may require some time or may be impossible due to the operation of protective devices even after the supply of power returns.

Air Piping

⚠ Caution

- Be careful to avoid any errors in connecting the air piping at the compressed air inlet (IN) and outlet (OUT).
- Flush the piping sufficiently in order to avoid any foreign matter such as dust, sealant tape, liquid gasket, etc., before connecting piping. Foreign matter in the piping can cause cooling failure or drainage failure.
- Inlet and outlet compressed air connections should be made removable by using a union, etc.
- Provide bypass piping to make it possible to do maintenance without stopping the air compressor.
- When tightening the inlet/outlet air piping, firmly hold the port on the air dryer with a pipe wrench, etc.
- Use pipes and fittings that can endure the operating pressure and temperature. Connect them firmly to prevent air leakage.
- Do not allow the load of the piping to lie directly on the air dryer. When mounting any part, such as an air filter, on the fitting at the compressed air inlet or outlet port, support the part to prevent excessive force from being applied to the product.
- Be careful not to let the vibrations of the air compressor transmit.
- If a metallic flexible tubing is used for the inlet/outlet air piping, abnormal noise might be generated in the piping. In such cases, please use steel tubing instead.
- If the temperature of the compressed air on the inlet side is over max. operating temperature, place an aftercooler after the air compressor. Or, lower the temperature of the place where the air compressor is installed to below max. operating temperature.
- If the air supply generates high pressure fluctuations (pulsations), take appropriate countermeasures, such as installing an air tank.

IDFA□ Series
Specific Product Precautions 2

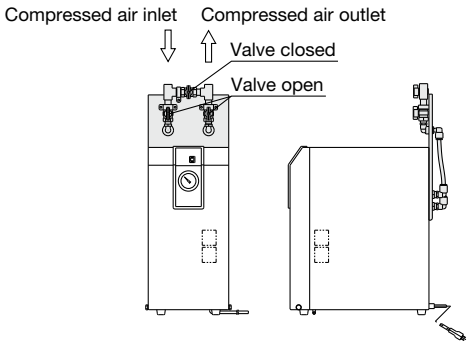
Be sure to read this before handling the products. For safety instructions and air preparation equipment precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website.

Air Piping

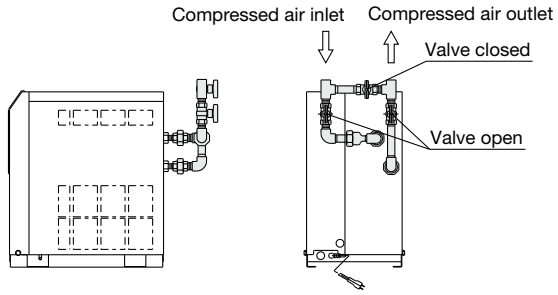
⚠ Caution

- If rapid pressure fluctuations or flow changes occur, install a filter on the dryer outlet to prevent condensate from splashing.
- Variations in operating conditions may cause condensation to form on the surface of the outlet piping. Apply thermal insulation around the piping to prevent condensation from forming.

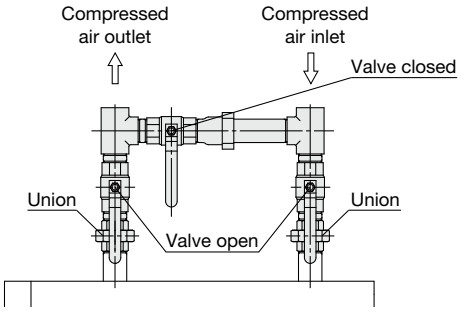
IDFA3E



IDFA4E to 15E1



IDFA60 to 90



Protection Circuit

⚠ Caution

When the air dryer is operated in the following cases, the protection circuit will activate, the light will turn off and the air dryer will come to stop.

- The compressed air temperature is too high.
- The compressed air flow rate is too high.
- The ambient temperature is too high. (40°C or higher (45°C or higher for the IDFA60 to IDFA150F))
- The fluctuation of the power supply voltage is beyond ±10% of the rated voltage.
- The air dryer is drawing in high temperature air exhausted from an air compressor or other dryer.
- The ventilation grille is obstructed by a wall or clogged with dust.

Transportation and Installation

⚠ Warning

Be sure to follow the instructions below for transporting the product.

- The product is filled with refrigerant. Transport it (by land, sea or air) in accordance with laws and regulations specified.
  Products with option "F" (low GWP refrigerant) selected cannot be transported by air as the products use a slightly flammable refrigerant (R1234yf, R454C).
- When carrying the product, be careful not to let it drop or fall over, and use a forklift.
- Do not lift the product by holding the panel, fittings or piping.
- Never lay the product down for transportation. This may lead to damage to the product.

- The product is heavy and has potential dangers in transportation. Be sure to follow the instructions above.

Compressor Air Delivery

⚠ Caution

Since the auto drain is designed in such a way that the valve remains open unless the air pressure rises to 0.1 MPa or higher, air will blow out from the drain outlet at the time of air compressor start up until the pressure increases. Therefore, if an air compressor has a small air delivery, the pressure may not be sufficient.

Auto Drain

⚠ Caution

The auto drain may not function properly, depending on the quality of the compressed air. Check the operation once a day.

Specific Product Precautions 3

Be sure to read this before handling the products. For safety instructions and air preparation equipment precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website.

Cleaning of Ventilation Area

⚠ Caution

If the dustproof filter or ventilation area is clogged with dust or particles, the cooling capacity will decrease.
Clean the product once a month by using a vacuum cleaner or an air blow gun without damaging the dustproof filter.

Time Delay for Restarting

⚠ Caution

Allow at least three minutes before restarting the air dryer.
Otherwise, the protection circuit will activate, the light will turn off and the air dryer will not start up.

Modifying the Standard Specifications

⚠ Caution

Do not modify the standard product using any of the optional specifications once the product has been supplied to a customer.
Check the specifications carefully before selecting an air dryer.
In addition, do not disassemble or modify the product. Products which have been disassembled and/or modified cannot be guaranteed.

■ Refrigerant with GWP reference

Refrigerant	Global Warming Potential (GWP)		
	Regulation (EU) 2024/573, AIM Act 40 CFR Part 84	Fluorocarbon Emissions Control Act (Japan)	
		GWP value labeled on products	GWP value to be used for reporting the calculated amount of leakage
R134a	1,430	1,430	1,300
R404A	3,922	3,920	3,940
R407C	1,774	1,770	1,620
R410A	2,088	2,090	1,920
R454C	146	145	146
R1234yf	0.501	—	—

∗1 This product is hermetically sealed and contains fluorinated greenhouse gases.
∗2 For refrigerant type used in this product, refer to the product specifications.

⚠ 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)*1), and other safety regulations.

⚠ 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.

*1) 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
etc.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. SMC products cannot be used beyond their specifications. They are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not allowed.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, combustion equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogs and operation manuals.
3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

⚠ Caution

SMC develops, designs, and manufactures products to be used for automatic control equipment, and provides them for peaceful use in manufacturing industries.
Use in non-manufacturing industries is not allowed.
Products SMC manufactures and sells cannot be used for the purpose of transactions or certification specified in the Measurement Act of each country.
The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".
Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2)
   Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
   This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

*2) **Suction cups (Vacuum pads) are excluded from this 1 year warranty.**
A suction cup (vacuum pad) is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the suction cup (vacuum pad) or failure due to the deterioration of rubber material are not allowed by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Revision History

Edition B * Low-GWP refrigerant compatible models have been added.

⚠ Safety Instructions Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.