# Refrigerated Air Dryer

## *IDFA□E/F Series*

## For use in Europe, Asia and Oceania

### Standard/IDFA□E Series

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

| Model | Rated inlet condition | Air flow capacity (m³/h [ANR]) Outlet air pressure dew point 3°C | 7°C | 10°C | Port size | Page |
|---|---|---|---|---|---|---|
| **IDFA3E** | 35°C 0.7 MPa | 12.0 | 15.0 | 17.0 | Rc 3/8 | 130 to 132 |
| **IDFA4E** | | 24.0 | 31.0 | 34.0 | Rc 1/2 | |
| **IDFA6E** | | 36.0 | 46.0 | 50.0 | Rc 3/4 | |
| **IDFA8E** | | 65.0 | 83.0 | 91.0 | | |
| **IDFA11E** | | 80.0 | 101.0 | 112.0 | | |
| **IDFA15E1** | | 120.0 | 152.0 | 168.0 | Rc 1 | |
| **IDFA22E** | | 182.0 | 231.0 | 254.0 | R 1 | 148 to 155 |
| **IDFA37E** | | 273.0 | 347.0 | 382.0 | R 1 1/2 | |
| **IDFA55E** | | 390.0 | 432.0 | 510.0 | R 2 | |
| **IDFA75E** | | 660.0 | 720.0 | 822.0 | | |


**Refrigerant** ***R134a(HFC)***
***R407C(HFC)***

**Coefficient of destruction for ozone is zero.**

**Improved corrosion resistance with the use of stainless steel, plate type heat exchanger** (IDFA4E to 75E, 100F to 150F)


### Large size/IDFA□F Series

●Power supply voltage: Three-phase 380 VAC (50Hz) **For Asia and Oceania**
Three-phase 400 VAC (50Hz) **For Europe**

**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.**

**Refrigerant** ***R407C(HFC)***

**Coefficient of destruction fro ozone is zero.**

| Model | Rated inlet condition | Outlet air pressure dew point | Air flow capacity (m³/h [ANR]) | Port size | Page |
|---|---|---|---|---|---|
| **IDFA100F-38** | 40°C 0.7 MPa | 10°C | 960 | R 2 | 134 to 136 |
| **IDFA125F-38** | | | 1210 | R 2 1/2 | |
| **IDFA150F-38** | | | 1500 | DIN flange 80 | |
| **IDFA100F-40** | 35°C 0.7 MPa | 3°C | 860 | R 2 | |
| **IDFA125F-40** | | | 1100 | R 2 1/2 | |
| **IDFA150F-40** | | | 1340 | DIN flange 80 | |

# INDEX

## 1. Standard Products
### IDFA□E Series

| Model | Rated inlet condition | Air flow capacity (m³/h [ANR]) Outlet air pressure dew point 3°C | 7°C | 10°C | Refrigerant | Port size | Page |
|---|---|---|---|---|---|---|---|
| **IDFA3E** | 35°C 0.7 MPa | 12 | 15 | 17 | R134a (HFC) | Rc3/8 | **130 to 132** |
| **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 | |
| **IDFA60** | | 204 | 300 | 360 | R410A (HFC) | R1 | **148 to 155** |
| **IDFA70** | | 312 | 408 | 480 | | R1 1/2 | |
| **IDFA80** | | 552 | 654 | 720 | | R2 | |
| **IDFA90** | | 810 | 900 | 960 | | | |

## 2. Large size
### IDFA□F Series

| Model | Rated inlet condition | Outlet air pressure dew point | Air flow capacity (m³/h [ANR]) | Port size | Page |
|---|---|---|---|---|---|
| **IDFA100F-38** | 40°C 0.7 MPa | 10°C | 960 | R2 | **134 to 136** |
| **IDFA125F-38** | | | 1210 | R2 1/2 | |
| **IDFA150F-38** | | | 1500 | DIN flange 80 | |
| **IDFA100F-40** | 35°C 0.7 MPa | 3°C | 860 | R2 | |
| **IDFA125F-40** | | | 1100 | R2 1/2 | |
| **IDFA150F-40** | | | 1340 | DIN flange 80 | |

## 3. Options

| Specifications | Applicable model | Suffix (Option symbol) | Page |
|---|---|---|---|
| Cool compressed air output | **IDFA3E to 11E** | **IDFA□E-23-A** | **137** |
| Anti-corrosive treatment | **IDFA3E to 15E1 IDFA100F to 150F** | **IDFA□E-23-C IDFA□F-□-C** | |
| With Chinese labels and a Chinese operation manual | **IDFA3E to 15E1 IDFA100F to 150F** | **IDFA□E-23-G IDFA□F-□-G** | |
| For medium air pressure (Up to 1.6 MPa) | **IDFA6E to 15E1 IDFA100F to 150F** | **IDFA□E-23-K IDFA□F-□-K** | |
| With heavy duty auto drain (For medium air pressure) | **IDFA4E to 15E1** | **IDFA□E-23-L** | |
| With circuit breaker | **IDFA4E to 15E1 IDFA100F to 150F** | **IDFA□E-23-R IDFA□F-□-R** | **138** |
| With terminal block for power supply, run & alarm signal and remote operation | **IDFA4E to 15E1** | **IDFA□E-23-T** | |
| Timer type solenoid valve with auto drain (Applicable to medium air pressure) | **IDFA4E to 15E1 IDFA100F to 150F** | **IDFA□E-23-V IDFA□F-□-V** | |

## 4. Optional Accessories

| Description | Page |
|---|---|
| Dust-protecting filter set | **139** |
| Foundation bolt set | |

# *IDFA□E 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 Selection Example

### 1 Read the correction factor.

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

| Condition | | Data symbol | Correction factor Note) |
|---|---|---|---|
| **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 | — | — |

Note) 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 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 137 and 138.**

### 5 Finalize the model number.

**Refer to pages 130, 133 and 134.**

### 6 Select accessories sold separately.

**Refer to page 139.**

## 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 |

Note1) In the case of the option A (cool compressed air output), the air flow capacity is different. Refer to page 137 for details. (IDFA3E to 11E)
Note2) 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.

# Refrigerant R134a (HFC)
# IDFA□E Series
## 3E, 4E, 6E, 8E, 11E, 15E
## (Max. inlet air temperature: 50°C, Max. ambient temperature: 40°C)

CE UKCA

## How to Order

**IDFA 8E — 23 —** (23: Note 1)

**Size**

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

**Voltage**

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

Note) The voltages listed below are only applicable to the IDFA6E.

| | |
|---|---|
| 20 | Single-phase 200 VAC (50 Hz)<br>Single-phase 200/220 VAC (60 Hz) |

| Nil |
|---|
| A |
| C |
| G |
| K |
| L |
| R |
| T |
| V |

**Options and Available Combinations (Size/Option)**

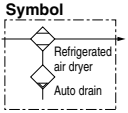
| Symbol Note 2) / Option / Size | Nil<br>None | A<br>Cool compressed air output | C<br>Anti-corrosive treatment | G<br>With Chinese labels and a Chinese operation manual | K<br>Moderate pressure specification Note 3)<br>(Auto drain bowl type: Metal bowl with level gauge) | L<br>With heavy duty auto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

Note 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.
Note 2) Enter alphabetically when multiple options are combined. However, the following combination cannot be achieved.
• Combination of K, L and V cannot be achieved because an auto drain can only be attached to a single option.
Note 3) The maximum operating pressure is 1.6 MPa.
Note 4) Refer to pages 137 and 138 for further details on optional specifications.
Note 5) Option "H" (Auto-drain bowl type: Metal bowl) is only applicable to the IDFA6E-20. However, options K, L, and V cannot be selected in combination.

## Standard Specifications


| Specifications \ Model | | | | Standard temperature air inlet | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | IDFA3E | IDFA4E | IDFA6E Note 9) | IDFA8E | IDFA11E | IDFA15E1 |
| Operating range Note 3) | Fluid | | | Compressed air | | | | | |
| | Inlet air temperature | | (°C) | 5 to 50 | | | | | |
| | Inlet air pressure | | (MPa) | 0.15 to 1.0 Note 10) | | | | | |
| | Ambient temperature (Humidity) | | (°C) | 2 to 40 (Relative humidity of 85% or less) | | | | | |
| Rated specifications Note 4) | Air flow capacity m³/h | Standard condition (ANR) Note 1) | 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 |
| | | Compressor intake condition Note 2) | 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 Note 6) | | (W) | 180 | | | 208 | 385 | 420 |
| | Operating current Note 6) | | (A) | 1.2 | | | 1.4 | 2.7 | 2.9 |
| Applicable circuit breaker capacity Note 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 | | | | EC Directive (with CE/UKCA marking) | | | | | |

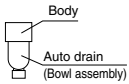
**Symbol**




Note 1) Air flow capacity under the standard condition (ANR) [atmospheric pressure at 20°C, relative humidity at 65%]
Note 2) Air flow capacity converted by the compressor intake condition [atmospheric pressure at 32°C, relative humidity at 75%].
Note 3) The operation range does not guarantee the use with normal air flow capacity.
Note 4) Please select a model in accordance with the Model Selection (Page 129).
Note 5) Product other than the option R is not equipped with an earth leakage breaker. Please purchase an appropriate earth leakage breaker separately.
Note 6) These values are reference values under rated conditions, and are not guaranteed. Do not use these values for the thermal set values, etc.
Note 7) 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.

**Replacement Parts**

| Model | | IDFA3E | IDFA4E | IDFA6E | IDFA8E | IDFA11E | IDFA15E1 |
|---|---|---|---|---|---|---|---|
| Auto drain replacement part no. Note 8) | New | AD38-A | | AD48-A | | | |
| | Previous | AD38 | | AD48 | | | |

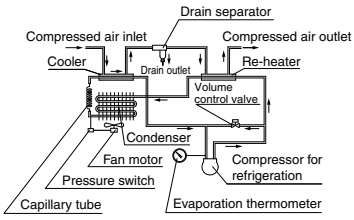



Note 8) The part number for the auto drain (Bowl assembly) components without including the body part. Body part replacement is impossible. In addition, a new line of auto drain models was recently introduced in March 2019. The previous models and the new models do not have mounting interchangeability. For details, refer to page 140.
Note 9) The specifications of the IDFA6E-20 are the same as those of the IDF6E-20 (page 43) aside from the compliant standards.
Note 10) The maximum operating pressure is 1.0 MPa as standard, but it is possible to achieve 1.6 MPa when selecting Option K, Option L, or Option V.

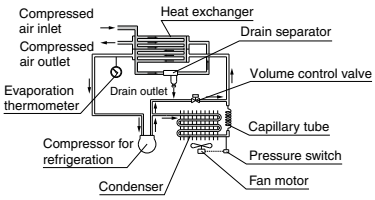
## Construction Principle (Air/Refrigerant Circuit)

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 ch go es throu gh to t he outl et sid

### IDFA3E

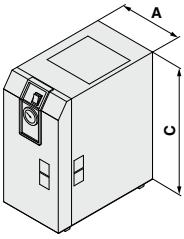



### IDFA4E, IDFA6E
### IDFA8E, IDFA11E, IDFA15E1

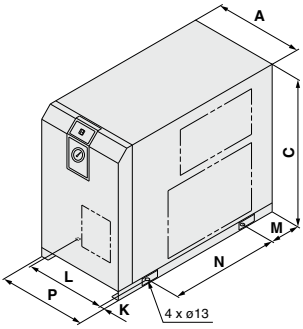


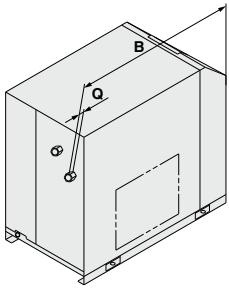
## Dimensions

### IDFA3E to 15E1

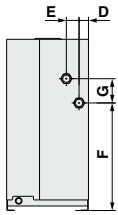



In case of IDFA3E




IDFA4E to 15E1




**Dimensions** (mm)

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

* Meaning the foot dimensions for the IDFA3E.

## Refrigerant R407C (HFC)

# IDFA□E Series

## 22E,37E,55E,75E
## (Inlet air temperature: 35°C)

**The production of the IDFA22E to 75E series has been discontinued.**

| Discontinued products | IDFA22E | IDFA37E | IDFA55E | IDFA75E |
|---|---|---|---|---|
| New type p. 143 | IDFA60 | IDFA70 | IDFA80 | IDFA90 |

**For Use in Europe, Asia and Oceania**

# Applicable for the high-temperature environments

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

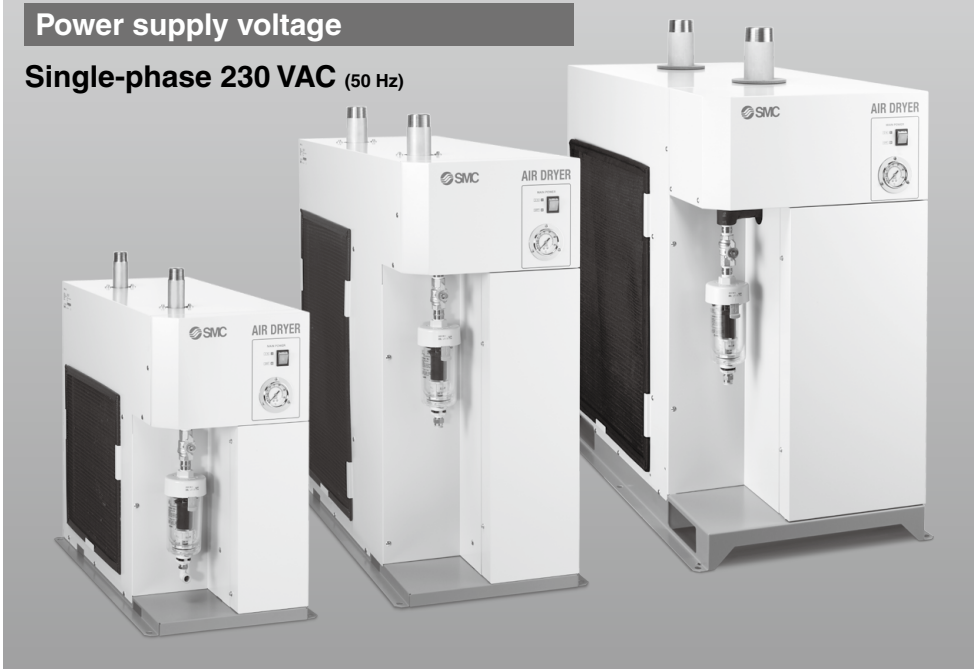
## Air flow capacity

* 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)**



# Refrigerant R407C (HFC)
# *IDFA100F/125F/150F* Series
## For use in Europe, Asia and Oceania
## (Max. inlet air temperature: 60°C, Max. ambient temperature: 45°C)

CE UKCA

### How to Order

**For use in Asia and Oceania**

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

**Size**

| Size |
|---|
| 100F |
| 125F |
| 150F |

**Voltage**

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

**Option**

| Symbol Note) | 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 |

Note) Enter alphabetically when multiple options are combined.
Example: When the IDFA100F-38 is provided with options C or R or V, the model number will be the IDFA100F-38-CRV.

**For use in Europe**

**IDFA 100F – 40 –** [Nil / C / G / K / R / V]

**Size**

| Size |
|---|
| 100F |
| 125F |
| 150F |

**Voltage**

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

**Option**

| Symbol Note) | 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 |

Note) Enter alphabetically when multiple options are combined.
Example: When the IDFA100F-40 is provided with options C or R or V, the model number will be the IDFA100F-40-CRV.

## Standard Specifications

| Specifications \ Model | | | For use in Asia and Oceania | | | For use in Europe | | |
|---|---|---|---|---|---|---|---|---|
| | | | IDFA100F-38 | IDFA125F-38 | IDFA150F-38 | IDFA100F-40 | IDFA125F-40 | IDFA150F-40 |
| Operating range Note 5) | Fluid | | Compressed air | | | | | |
| | Inlet air temperature °C | | 5 to 60 | | | | | |
| | Inlet air pressure MPa | | 0.15 to 1.0 Note 6) | | | | | |
| | Ambient temperature (humidity) °C | | 2 to 45 (Relative humidity 85% or less) | | | | | |
| Rated conditions | Air flow capacity m³/h | Standard condition (ANR) Note 1) | 960 | 1210 | 1500 | 860 | 1100 | 1340 |
| | | Compressor intake condition Note 2) | 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 Note 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)<br>The 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 | | | EC Directive compliant (with CE/UKCA marking) | | | | | |

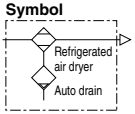
Note 1) Air flow capacity under the standard condition (ANR) [atmospheric pressure 20°C, relative humidity 65%]
Note 2) Air flow capacity converted by the compressor intake condition [atmospheric pressure 32°C]
Note 3) The operation range does not guarantee the use with normal air flow capacity. When operating conditions are different from the rated specifications, please select a model in accordance with Model Selection (page 129).
Note 4) Install a circuit breaker with a sensitivity 30 mA.

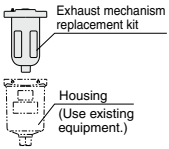
**Replacement Parts**

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

Note 5) Part number of only the exhaust mechanism replacement kit excluding the housing
Note 6) The maximum operating pressure is 1.0 MPa as standard, but it is possible to achieve 1.6 MPa when selecting Option K.
∗ A terminal block for remote operation, stop, operating, and error signals is include as standard equipment.

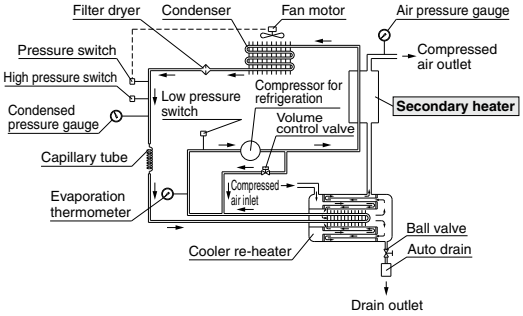
**Symbol**




## 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.

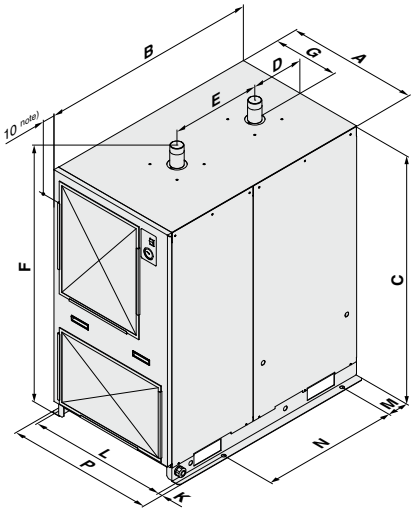
**Secondary heater**

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

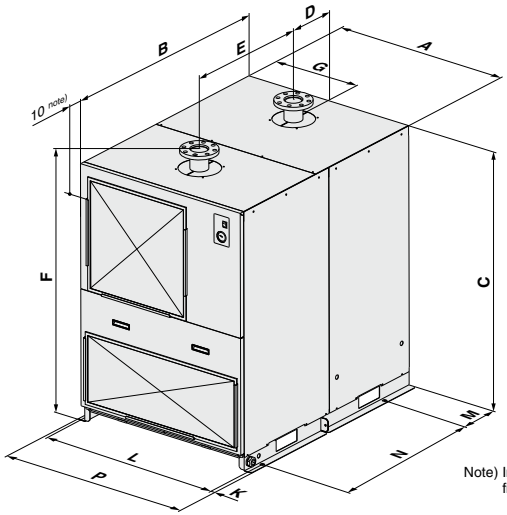



Note) In addition to the overall length of the body, the filter mounting part (bracket) projects 10 mm.

**Dimensions** (mm)

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

### IDFA150F




Note) 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 |

# Options 1

**For "How to Order" optional models, refer to pages 130, 133 and 134.**

## 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.)
Note) 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.

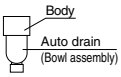
### Specifications

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 140.




## K Option symbol: Moderate pressure specification — 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

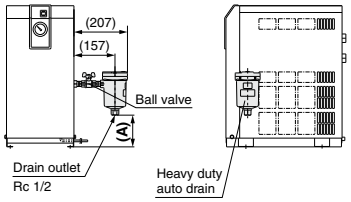
## L Option symbol: With heavy duty auto drain (Applicable to moderate pressure) — IDFA4E to 15E1

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.

**IDFA4E to 15E1**

**Dimensions** (mm)

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




### Replacement Parts: Heavy Duty Auto Drain

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

# Options 2

**For "How to Order" optional models, refer to pages 130, 133 and 134.**

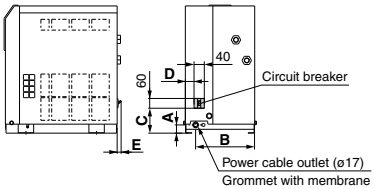
**R** Option symbol

## With 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.

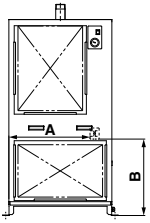
### IDFA4E to 15E1




**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, IDFA22E-23 IDFA37E-23, IDFA55E-23** | 10 A | |
| | **IDFA75E-23** | 20 A | |
| **380/400 V type** | **IDFA100F, IDFA125F IDFA150F** | 15 A | |

**T** Option symbol

## With 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.

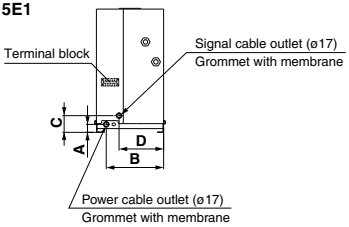
Contact capacity: 230 VAC, 4 A 24 VDC, 5 A for operating and error signals.

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

Note 1) Terminal block for power supply, run & alarm signal and remote operation is mounted on the standard types of the IDFA100F to 150F.

Note 2) 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

## Timer type solenoid valve with 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 |

# *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.<br>Easy to secure by striking its axle. | Stainless steel | IDFA4E to 75E<br>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 |

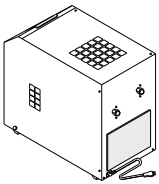
**Foundation bolt set**

**IDF — AB 500**

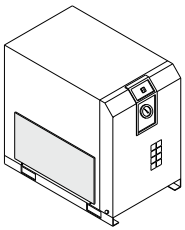
**Applicable dryer**

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

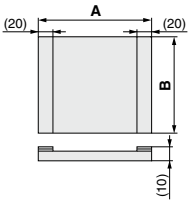
## Dust-protecting Filter Set/Dimensions



(IDF-FL209)



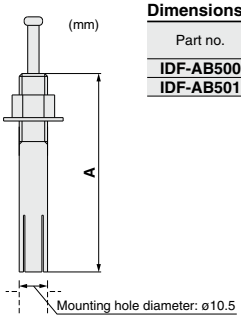
(IDF-FL202 to 208, 213, 214)




**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 |

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

A new line of auto drain models, which feature new product numbers and a new shape, was recently introduced, with manufacturing starting in either March or June 2019 (depending on the model). The previous auto drain models and the new auto drain models do not have mounting interchangeability. Please check the serial number on the dryer specification label before ordering.

## 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-A** | 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-A** | Manufactured in March 2019 and after | **XQ and after** |
| IDFA55E/75E | Previous | **AD48** | Manufactured in May 2019 and before | **XS and before** |
| | New | **AD48-A** | Manufactured in June 2019 and after | **XT and after** |

## 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**∗1 | Manufactured in February 2019 and before | **XP and before** |
| | New | **IDF-S1926**∗2 | 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** |

∗1 Assembly of auto drain: AD48-8-X2110, One-touch fitting: KQ2H10-02AS, and insulator
∗2 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 |

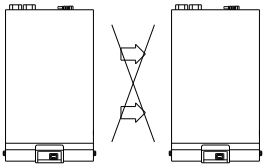
# *IDFA□E/F Series*
# Specific Product Precautions 1

**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: https://www.smcworld.com**

## Installation

### ⚠ Caution

- Avoid locations where the air dryer will be in direct contact with wind and rain. (Places where relative humidity is greater than 85%)
- Avoid exposure to direct sunlight.
- Avoid locations that contain much dust, corrosive gases, or flammable gases. Failure due to corrosion is not covered under warranty. However, when the risk of corrosion is high, select "Option C" (copper tubing with anti-corrosive treatment).
- Avoid locations of poor ventilation and high temperature.
- Avoid too close to a wall etc. Leave sufficient room between the dryer and the wall according to the "Maintenance space" in the operation manual.
- Avoid locations where a dryer could draw in high temperature air that is discharged from an air compressor or other dryer.



The air exhaust should not flow into the neighboring equipment. (Top side)

- Avoid locations subjected to vibration.
- Avoid possible locations where the drain can freeze.
- Use the air dryer with an ambient temperature lower than 40°C.
- Avoid installation on machines for transporting, such as trucks, ships, etc.
- Avoid locations which experience sudden pressure/flow rate changes.
- 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 polyurethane tube is attached as a drain tube for the IDFA3E to 15E1 and IDFA100F to 150F. Use this tube to discharge drainage.
- Do not use the drain tube in an upward direction. Do not bend or crush the drain tube. (Operation of the auto drain will stop water vapor from discharging through the air outlet.)
  If it is unavoidable that the tube goes upwards, make sure it only goes as far as the position of the auto drain.
- The drain tube comes with a tube fitting. Pipe a 10 mm O.D. tube with a length of 5 m or less.

## Power Supply

### ⚠ Caution

- Connect the power supply to the terminal block.
- Install a suitable circuit breaker applicable for the specific model.
- The voltage fluctuation should be maintained within ±10% of the rated voltage.

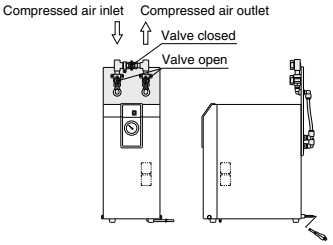
  Note) Select a circuit breaker with a sensitivity current 30 mA. As regards rated current, refer to "Applicable circuit breaker capacity" on pages 131 and 135.

## Air Piping

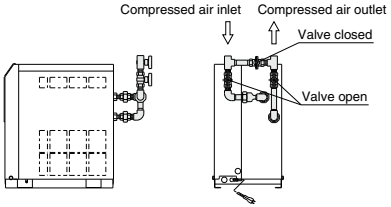
### ⚠ Caution

- Be careful to avoid an error in connecting the air piping at the compressed air inlet (IN) and outlet (OUT).
- Install by-pass piping since it is needed for maintenance.

**IDFA3E**




**IDFA4E to 15E1**



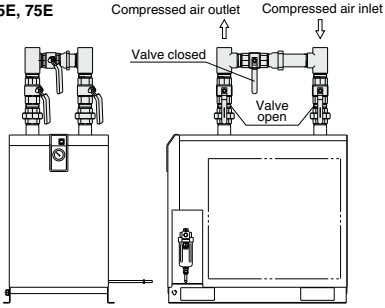
# *IDFA□E/F Series*
# Specific Product Precautions 2

**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: https://www.smcworld.com**

## Air Piping

### ⚠ Caution

**IDFA55E, 75E**




- When tightening piping at the air inlet/outlet tube, the hexagonal parts of the port on the air dryer side or piping should be held firmly with a spanner or adjustable angle wrench.
- Variations in operating conditions may cause condensation to form at the surface of the outlet piping. Apply thermal insulation around the piping to prevent condensation from forming.
- Vibration resulting from the compressor should not be transmitted through air piping to the air dryer.
- Do not allow the weight of the piping to lie directly on the air dryer.
- If a metallic flexible tubing is used for the inlet/outlet air piping, abnormal noise might be generated in the piping. In that case, please change it to the rigid tubing.

## Protection Circuit

### ⚠ Caution

When the air dryer is operated under the following stated conditions, a protection circuit is activated, the light turns off and operation stops.

- When the compressed air temperature is too high.
- When the compressed air flow rate is too high.
- When the ambient temperature is too high. (40°C or higher, however, 45°C or higher for IDFA100F to 150F)
- When the fluctuation of the power supply is beyond the rated voltage ±10%.
- When the dryer is drawing in high temperature air that is discharged from an air compressor or other dryer.
- The ventilation port is obstructed by a wall or clogged with dust.

## Compressor Air Delivery

### ⚠ Caution

Use an air compressor with an air delivery of 100 L/min or larger with the IDFA3E to 15E1 series.

Since the auto drain of the IDFA3E to 15E1 is designed in such a way that the valve remains open unless the air pressure rises to 0.15 MPa or higher (0.05 MPa or more for IDFA100F to 150F), air will blow out from the drain discharge port 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.

## Cleaning of Ventilation Area

### ⚠ Caution

Remove dust from the ventilation area once a month using a vacuum cleaner or an air blow nozzle.

## Delay for Restarting

### ⚠ Caution

- Allow at least three minutes before restarting the dryer. If the air dryer is restarted within three minutes after being stopped, the protection circuit will be activated, operating light turns off and the dryer will not be activated.
- 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.

## 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) No 517/2014 (Based on the IPCC AR4) | 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 |

Note 1) This product is hermetically sealed and contains fluorinated greenhouse gases (HFC). When this product is sold on the market in the EU after January 1, 2017, it needs to be compliant with the quota system of the F-Gas Regulation in the EU.

Note 2) See specification table for refrigerant used in the product.