



Refrigerated Air Dryer

For use in Europe, Asia and Oceania

Series IDFA□E

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

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

New

**IDFA55E, 75E
are added!**

Coefficient of destruction
for ozone is zero.

Improved corrosion resistance
with the use of stainless steel
heat exchanger (IDFA4E to 75E)



Series	Air flow capacity (m ³ /h [ANR])			Refrigerant	Rated inlet condition	Port size
	Outlet air pressure dew point					
	3°C	7°C	10°C			
IDFA3E	12	15	17	R134a (HFC)	35°C 0.7 MPa	Rc 3/8
IDFA4E	24	31	34			Rc 1/2
IDFA6E	36	46	50			Rc 3/4
IDFA8E	65	83	91			Rc 1
IDFA11E	80	101	112			R 1
IDFA15E1	120	152	168			R 1 1/2
IDFA22E	182	231	254			R 2
IDFA37E	273	347	382	R407C (HFC)		
IDFA55E	390	432	510			
IDFA75E	660	720	822			



CAT.EUS30-9Bb-UK

1. Standard Products

Series IDFA

Standard inlet air type

Rated inlet air temperature: 35°C



Model	Rated inlet condition	Air flow capacity (m ³ /h [ANR])			Refrigerant	Port size	Page
		Outlet air pressure dew point					
		3°C	7°C	10°C			
IDFA3E	35°C 0.7 MPa	12	15	17	R134a (HFC)	Rc 3/8	P. 3 to 5
IDFA4E		24	31	34		Rc 1/2	
IDFA6E		36	46	50		Rc 3/4	
IDFA8E		65	83	91			
IDFA11E		80	101	112			
IDFA15E1		120	152	168	Rc 1	P. 6 to 8	
IDFA22E		182	231	254	R 1		
IDFA37E		273	347	382	R 1½		
IDFA55E		390	432	510	R 2		
IDFA75E		660	720	822			

2. Options

Specifications	Applicable model	Suffix (Option symbol)	Page
Cool compressed air output	IDFA3E to 11E	IDFA□E-23-A	P. 9
Anti-corrosive treatment	IDFA3E to 75E	IDFA□E-23-C	
For 1.6 MPa application (Auto drain bowl type: Metal bowl with level gauge)	IDFA6E to 37E	IDFA□E-23-K	
With heavy duty auto drain (Applicable to 1.6 MPa)	IDFA4E to 75E	IDFA□E-23-L	
With ground fault circuit interrupter	IDFA4E to 75E	IDFA□E-23-R	P. 10
With terminal block for power supply, run & alarm signal and remote operation	IDFA4E to 75E	IDFA□E-23-T	
With timer-type solenoid valve (Applicable to 1.6 MPa)	IDFA4E to 75E	IDFA□E-23-V	

3. Optional Accessories

Description	Page
Dust-protecting filter set	P. 11
Foundation bolt set	
By-pass piping set	

4. Data (Condensed Water Calculation, Dew Point Conversion Chart) ... P. 12

5. Safety Instructions ... Back page 1, 2 and backcover

Series IDFA□E

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.

1 Read the correction factor.

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

IDFA E Selection Example

Condition	Data symbol	Correction factor ^{Note)}
Inlet air temperature	40°C	A
Ambient temperature	35°C	B
Inlet air pressure	0.5 MPa	C
Air consumption	31 m ³ /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)

$$\text{Corrected air flow capacity} = 31 \text{ m}^3/\text{h} \div (0.83 \times 0.83 \times 0.92) = 48.9 \text{ m}^3/\text{h}$$

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 page 3, 6.

5 Finalise the model number.

Refer to page 3, 6.

6 Select accessories sold separately.

Refer to page 11.

Data A: Inlet Air Temperature

Inlet air temperature (°C)	Correction factor	
	IDFA3E to 37E	IDFA55E to 75E
5 to 25	1.30	1.33
30	1.25	1.16
35	1	1
40	0.83	0.8
45	0.7	0.64
50	0.6	0.48

Data B: Ambient Temperature

Ambient temperature (°C)	Correction factor	
	IDFA3E to 11E	IDFA15E1 to 75E
20	1.1	1.1
25	1	1
30	0.91	0.97
35	0.83	0.89
40	0.79	0.77

Data C: Inlet Air Pressure

Inlet air pressure (MPa)	Correction factor	
	IDFA3E to 11E	IDFA15E1 to 75E
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

Data D: Air Flow Capacity

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

Note) In case of "Option A (Cool compressed air output)", the air flow capacity is different. Refer to page 9 for details.

Model	Outlet air pressure dew point	Air flow capacity (m ³ /h [ANR])				
		IDFA15E1	IDFA22E	IDFA37E	IDFA55E	IDFA75E
3°C	3°C	120	182	273	390	660
	7°C	152	231	347	432	720
	10°C	168	254	382	510	822

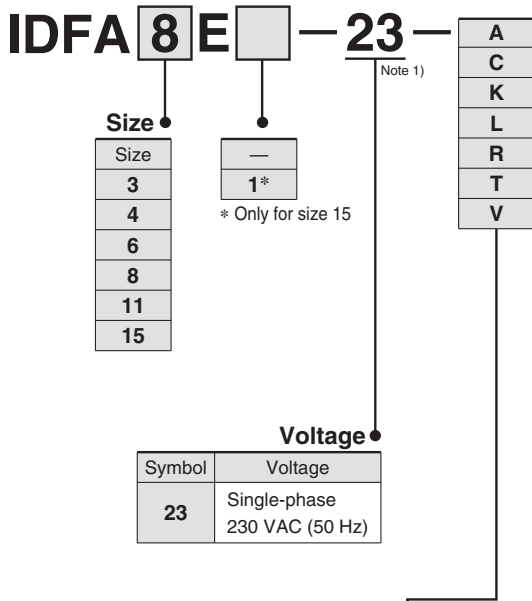
Refrigerant R134a (HFC)

Series IDFA□E

3E, 4E, 6E, 8E, 11E, 15E1
(Inlet air temperature: 35°C)



How to Order



Options and Available Combinations (Size/Option)

Symbol ^{Note 2)}	—	A	C	K	L	R	T	V
Option	None	Cool compressed air output	Anti-corrosive treatment	For medium air pressure (Auto drain bowl type: Metal bowl with level gauge)	With heavy duty auto drain (Applicable to medium air pressure)	With circuit breaker	With terminal block for run & alarm signal	With timer-type solenoid valve (Applicable to medium air pressure)
Size								
3	●	●	●	—	—	—	—	—
4	●	●	●	—	●	●	●	●
6	●	●	●	●	●	●	●	●
8	●	●	●	●	●	●	●	●
11	●	●	●	●	●	●	●	●
15	●	—	●	●	●	●	●	●

Note 1) G thread (PF thread) can accept the R thread (PT male thread), thus make no "F" in the thread specification setting. A conversion adaptor for the R thread (PT male thread) is also contained.

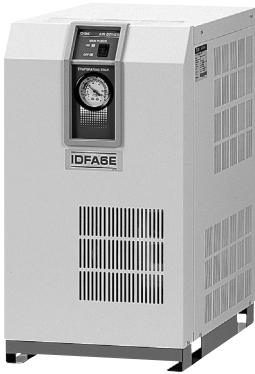
Note 2) Enter alphabetically when multiple options are combined.

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.

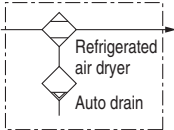
Note 3) Refer to page 9 for further details on optional specifications.

Standard Specifications



Specifications		Model	Standard temperature air inlet						
			IDFA3E	IDFA4E	IDFA6E	IDFA8E	IDFA11E	IDFA15E1	
Operating range	Fluid		Compressed air						
	Inlet air temperature (°C)		5 to 50						
	Inlet air pressure (MPa)		0.15 to 1.0						
	Ambient temperature (Humidity) (°C)		2 to 40 (Relative humidity of 85% or less)						
Rated specifications <small>Note 3)</small>	Air flow capacity m ³ /h	<small>Note 1)</small> 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
	<small>Note 2)</small> 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
Electric	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						
	Power consumption (W)		180		208	385	420		
	Operating current (A)		1.2		1.4	2.7	2.9		
	Applicable circuit breaker capacity <small>Note 4)</small> (A)		5						
	Condenser		Air-cooled						
	Refrigerant		R134a (HFC)						
	Auto drain		Float type (Normally closed)			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	
	Coating colour		Body panel: White 1 Base: Gray 2						

JIS 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]

Note 3) Select air dryer according to the model selection method (page 2) for the models beyond the rated specifications.

Note 4) Install a circuit breaker with a sensitivity of 30 mA.

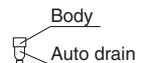
Note 5) When a short-term interruption of the power supply (including momentary interruption) occurs in this equipment, the restarting of normal operations may require some time or may be impossible due to the operation of protective devices even after the supply of power returns.

Replacement Parts

Model	IDFA3E	IDFA4E	IDFA6E	IDFA8E	IDFA11E	IDFA15E1
Auto drain replacement parts no. <small>Note 5)</small>	AD38		AD48			

Note 6) The part number for the auto drain components without including the body part.

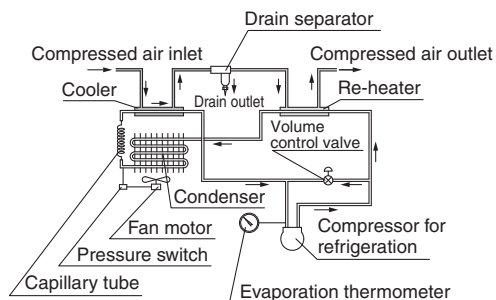
Body part replacement is impossible.



Construction (Air/Refrigerant Circuit)

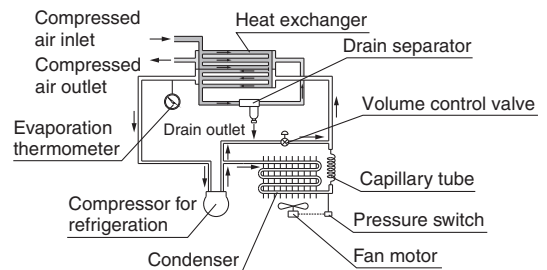
Humid, hot air coming into the air dryer will be cooled down by a cooler re-heater (heat exchanger). Water condensed at this time will be removed from the air by auto drain and drained out automatically. Air separated from the water will be heated by a cooler re-heater (heat exchanger) to obtain the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

IDFA3E



IDFA4E, IDFA6E

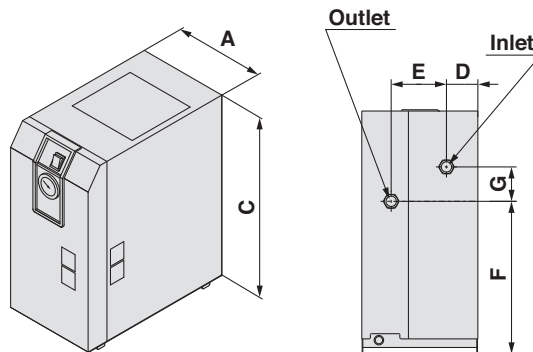
IDFA8E, IDFA11E, IDFA15E1



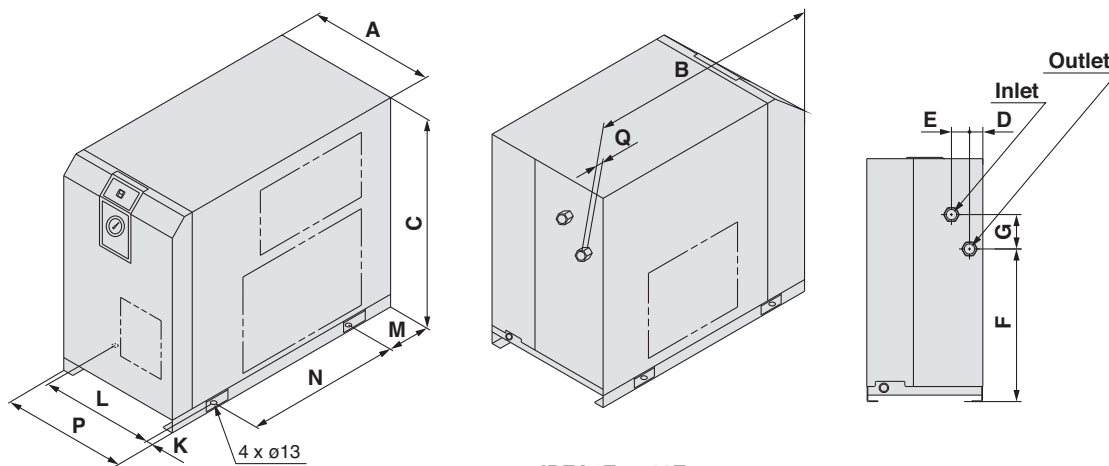
Series IDFA□E

Dimensions

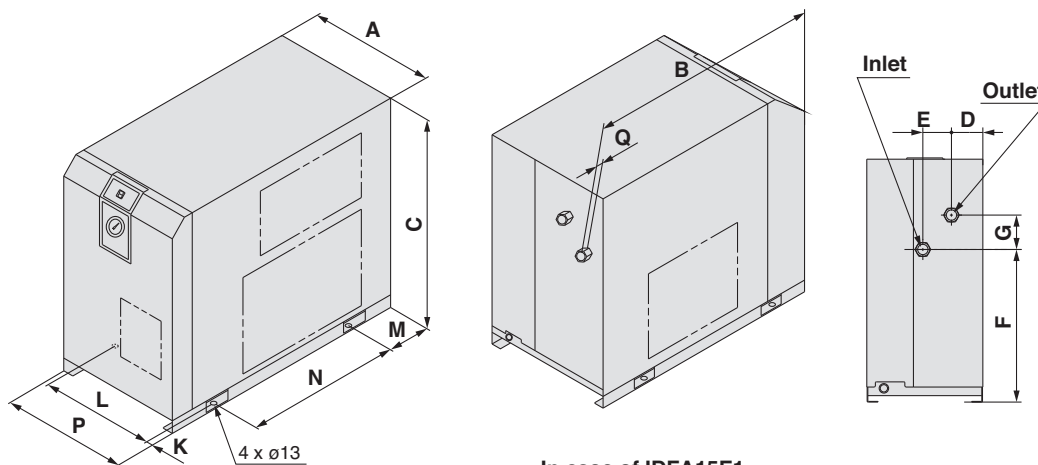
IDFA3E to 15E1



In case of IDFA3E



IDFA4E to 11E



In case of IDFA15E1

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		270	455		31	42		80		240	80		—	
IDFA8E	Rc 3/4		485	568			355		15			300		15
IDFA11E														
IDFA15E1	Rc 1	300	603	578	41	54	396	87		284	101	380	314	16

* Meaning the foot dimensions for the IDFA3E.

Refrigerant R407C (HFC)

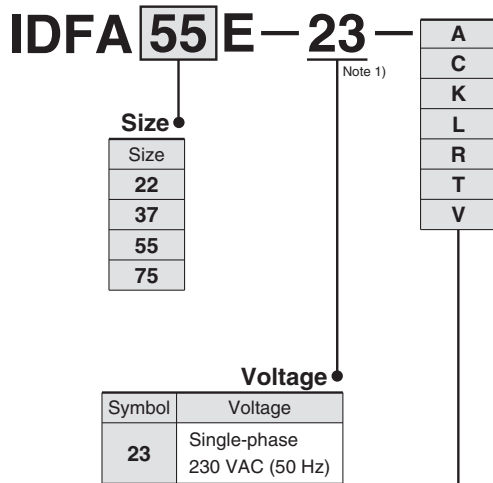
Series IDFA□E

22E, 37E, 55E, 75E

(Inlet air temperature: 35°C)



How to Order



Options and Available Combinations (Size/Option)

Symbol ^{Note 2)}	–	A	C	K	L	R	T	V
Option	None	Cool compressed air output	Anti-corrosive treatment	For 1.6 MPa application (Auto drain bowl type: Metal bowl with level gauge)	With heavy duty auto drain (Applicable to 1.6 MPa)	With ground fault circuit interrupter	With terminal block for run & alarm signal	With timer-type solenoid valve (Applicable to 1.6 MPa)
Size								
22	●	—	●	●	●	●	●	●
37	●	—	●	●	●	●	●	●
55	●	—	●	—	●	●	●	●
75	●	—	●	—	●	●	●	●

Note 1) G thread (PF thread) can accept the R thread (PT male thread), thus make no "F" in the thread specification setting.

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.

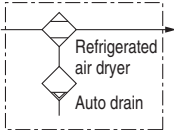
Note 3) Refer to page 9 for further details on optional specifications.

Standard Specifications



Specifications		Model	Standard temperature air inlet			
			IDFA22E	IDFA37E	IDFA55E	IDFA75E
Operating range	Fluid	Compressed air				
	Inlet air temperature (°C)	5 to 50				
	Inlet air pressure (MPa)	0.15 to 1.0				
	Ambient temperature (Humidity) (°C)	2 to 40 (Relative humidity of 85% or less)				
Rated specifications (Note 3)	Air flow capacity (m ³ /h)	Standard condition (ANR) (Note 1) Outlet air pressure dew point (3°C)	182	273	390	660
		Outlet air pressure dew point (7°C)	231	347	432	720
		Outlet air pressure dew point (10°C)	254	382	510	822
	Compressor intake condition (Note 2) Outlet air pressure dew point (3°C)	189	284	405	686	
		Outlet air pressure dew point (7°C)	240	361	449	748
		Outlet air pressure dew point (10°C)	264	397	530	854
Inlet air pressure (MPa)	0.7					
Inlet air temperature (°C)	35					
Ambient temperature (°C)	25					
Electric	Power supply voltage	Single-phase: 230 VAC [Voltage fluctuation ±10%] 50 Hz				
	Power consumption (W)	760	1130	1700		
	Operating current (A)	4.3	5.4	7.9		
	Applicable circuit breaker capacity (Note 4) (A)	10			20	
Condenser	Air-cooled					
Refrigerant	R407C (HFC)					
Auto drain	Float type (Normally open)					
Port size	R 1	R 1½	R 2			
Accessory	—					
Weight (kg)	54	62	100	116		
Coating colour	Body panel: White 1 Base: Gray 2					

JIS Symbol

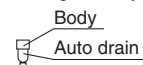


- Note 1) Air flow capacity under the standard condition (ANR) [atmospheric pressure at 20°C, relative humidity at 65%]
 Note 2) Air flow capacity converted by the compressor intake condition [atmospheric pressure at 32°C]
 Note 3) Select air dryer according to the model selection method (page 2) for the models beyond the rated specifications.
 Note 4) Install a circuit breaker with a sensitivity of 30 mA.
 Note 5) 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	IDFA22E	IDFA37E	IDFA55E	IDFA75E
Auto drain replacement parts no. (Note 5)	AD48			

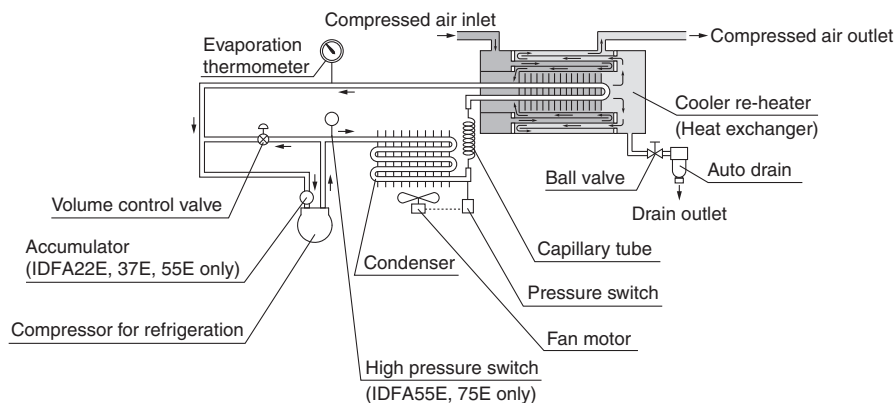
- Note 6) The part number for the auto drain components without including the body part. Body part replacement is impossible.



Construction (Air/Refrigerant Circuit)

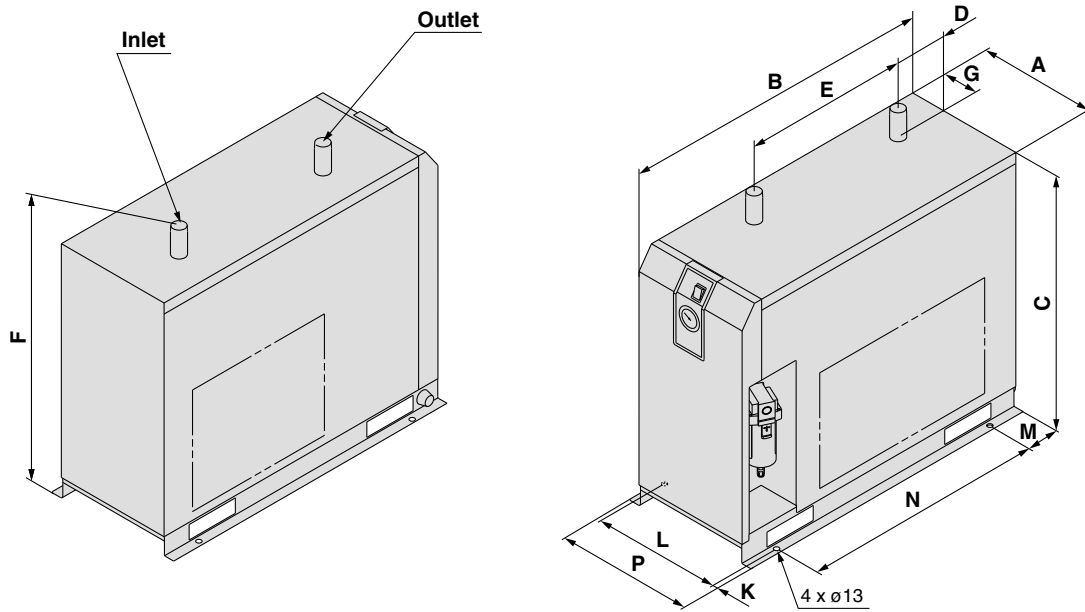
Humid, hot air coming into the air dryer will be cooled down by a cooler re-heater (heat exchanger). Water condensed at this time will be removed from the air by auto drain and drained out automatically. Air separated from the water will be heated by a cooler re-heater (heat exchanger) to obtain the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

IDFA22E, IDFA37E, IDFA55E, IDFA75E



Dimensions

IDFA22E, IDFA37E

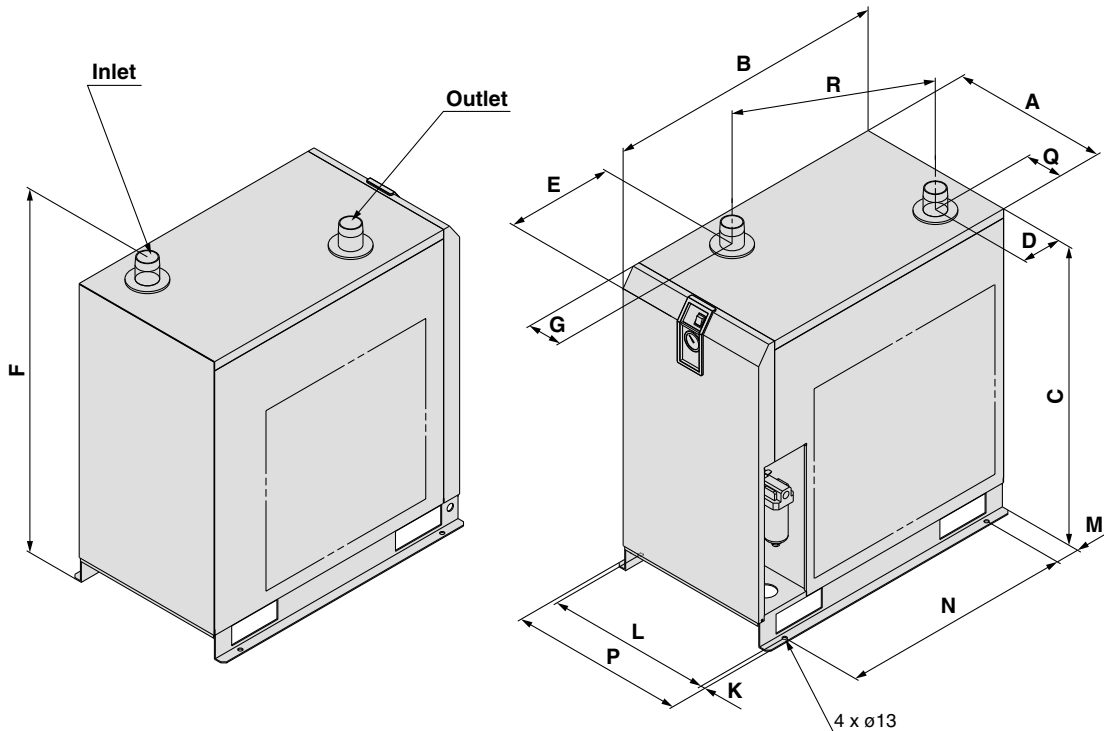


Dimensions

(mm)

Model	Port size	A	B	C	D	E	F	G	K	L	M	N	P	Q
IDFA22E	R 1	290	775	623	134	405	698	93	13	25	85	600	340	—
IDFA37E	R 1½	290	855	623	134	405	698	93	13	25	85	680	340	—

IDFA55E, IDFA75E



Dimensions

(mm)

Model	Port size	A	B	C	D	E	F	G	K	L	M	N	P	Q	R
IDFA55E	R 2	470	855	800	(128)	(273)	(868)	(110)	13	500	75	700	526	(110)	519
IDFA75E	R 2	470	855	900	(128)	(273)	(968)	(110)	13	500	75	700	526	(110)	519

Series IDFA□E

Options 1

For “How to Order” optional models, refer to page 3 and 6.

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 to the standard product.)
 Note) Perform thermal insulation treatment to the 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 minimises the corrosion of the copper and copper alloy parts when the air dryer is used in an atmosphere containing hydrogen sulfide or sulfuric 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, as operation may be affected by the coating.
 * Corrosion is not covered under warranty.

K Option symbol

For 1.6 MPa applications (Auto drain bowl type: Metal bowl with level gauge) IDFA6E to 37E

The auto drain is changed from the standard one to one with a medium 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-S0086	The AD48-8-X2110 auto drain, insulator, and one-touch fitting are included.
IDFA22E, 37E	AD48-8-X2110	Single auto drain unit

L Option symbol

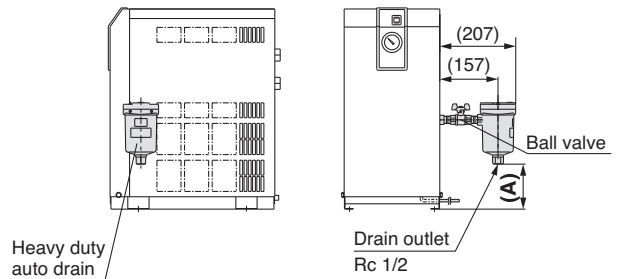
With heavy duty auto drain (Applicable to 1.6 MPa) IDFA4E to 75E

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.

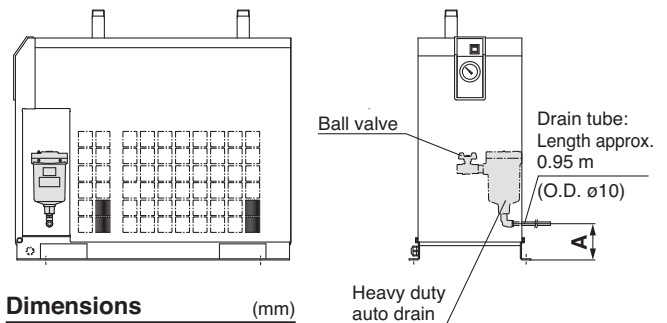
Dimensions (mm)

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

IDFA4E to 15E1



IDFA22E to 75E



Dimensions (mm)

Model	A
IDFA22E, 37E	Approx. 100
IDFA55E, 75E	Approx. 50

Note 1) The heavy duty auto drain and the ball valve are both enclosed in the same shipping package as the main body of the air dryer. Customers are required to mount the parts to the air dryer. (Except IDFA22E to 75E)

Note 2) Customers will need to supply the fitting and tubing for the drain piping. (Except IDFA22E to 75E)

Replacement Parts: Heavy Duty Auto Drain

Model	Replacement parts no. (Description)	Configuration
IDFA4E to 75E	ADH-E400 (Replacement kit for exhaust mechanism)	

Series IDFA□E

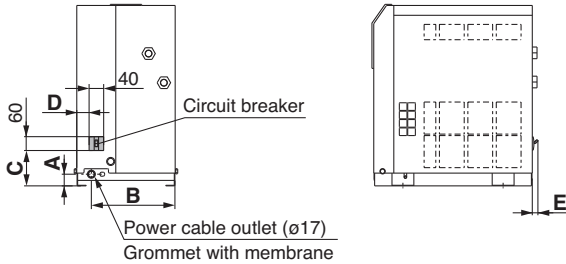
Options 2

For “How to Order” optional models, refer to page 3 and 6.

R Option symbol
With ground fault circuit interrupter IDFA4E to 75E

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

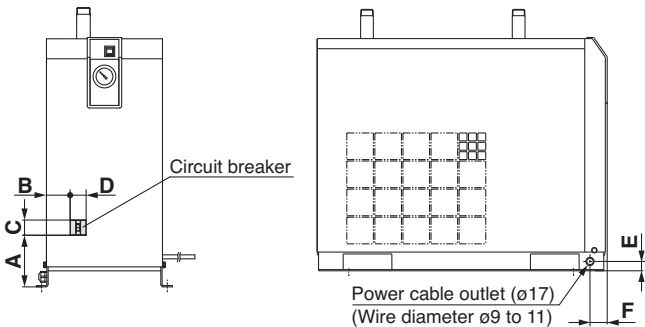
IDFA4E to 15E1



Dimensions (mm)

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

IDFA22E to 75E



Dimensions (mm)

Model	A	B	C	D	E	E
IDFA22E	125	59		40	25	46
IDFA37E		39	60			
IDFA55E	148	81		60	50	36
IDFA75E	133	73				

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	

T Option symbol
With terminal block for power supply, run & alarm signal and remote operation IDFA4E to 75E

In addition to the terminals for the power supply, terminals for the operating signal and the error signal are also available. (No-voltage contact)

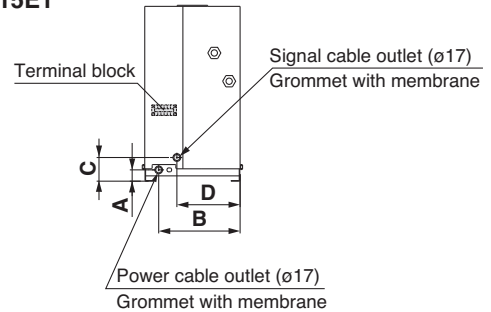
Also, in the case of remote control, operate it from the power supply side while the air dryer switch remains ON.

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) Please be sure to confirm the electric circuits with the drawings or instruction manual before using the output signal.

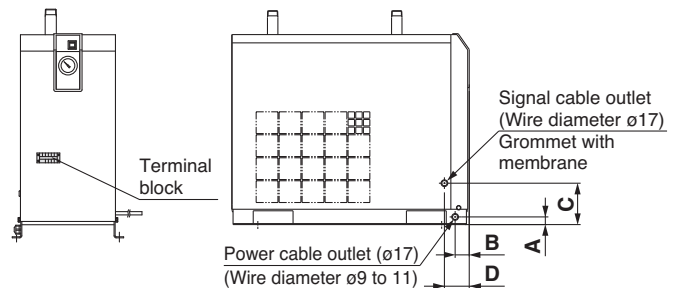
IDFA4E to 15E1



Dimensions (mm)

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

IDFA22E to 75E



Dimensions (mm)

Model	A	B	C	D
IDFA22E, 37E	25	46	135	81
IDFA55E, 75E	50	36	207	81

V Option symbol
With timer-type solenoid valve (Applicable to 1.6 MPa) IDFA4E to 75E

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




Maximum operating pressure: 1.6 MPa

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

Replacement Parts

Model	Part no.	Note
IDFA4E to 37E	IDF-S0198	230 VAC
IDFA55E, 75E	IDF-S0302	

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
Foundations bolt set 	Bolts for fixing the air dryer to the foundations. Easy to secure by striking its axle.	Stainless steel	IDFA4E to 75E
By-pass piping set 	Easy by-pass piping (connect this set to the air dryer), allowing substantial reduction in the installation time.	Max. operating pressure 1.0 MPa Max. operating temperature 60°C	IDFA3E to 75E

How to Order

Dust-protecting filter set

IDF — FL **209**

Applicable dryer

Symbol	Applicable dryer
201	IDFA3E
202	IDFA4E
203	IDFA6E
204	IDFA8E
205	IDFA11E
206	IDFA15E1
207	IDFA22E
208	IDFA37E
213	IDFA55E
214	IDFA75E

Foundation bolt set

IDF — AB **500**

Applicable dryer

Symbol	Applicable dryer
500	IDFA4E to 75E

By-pass piping set (Rc, R thread)

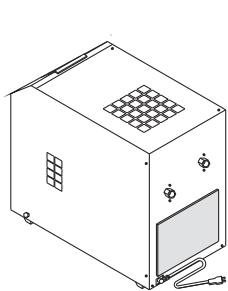
IDF — BP **302**

Applicable dryer

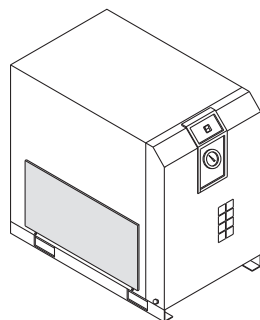
Symbol	Applicable dryer	Thread type
302	IDFA3E	Rc
303	IDFA4E	
304	IDFA6E to 11E	
316	IDFA15E1	
317	IDFA22E	R
318	IDFA37E	
325	IDFA55E	
	IDFA75E	

Note) Not applicable to the medium air pressure (1.6 MPa) spec.

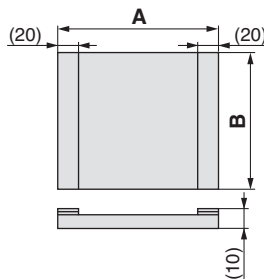
Dust-protecting Filter Set / Dimensions



(IDF-FL209)



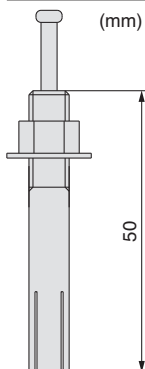
(IDF-FL202 to 208, 213, 214)



Dimensions

Part no.	Applicable dryer	A	B	Weight (g)
IDF-FL201	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	310	270	70
IDF-FL207	IDFA22E	420	315	100
IDF-FL208	IDFA37E	550	365	140
IDF-FL213	IDFA55E	720	400	175
IDF-FL214	IDFA75E	610	560	190

Foundation Bolt Set / Dimensions



Mounting hole diameter: $\phi 10.5$

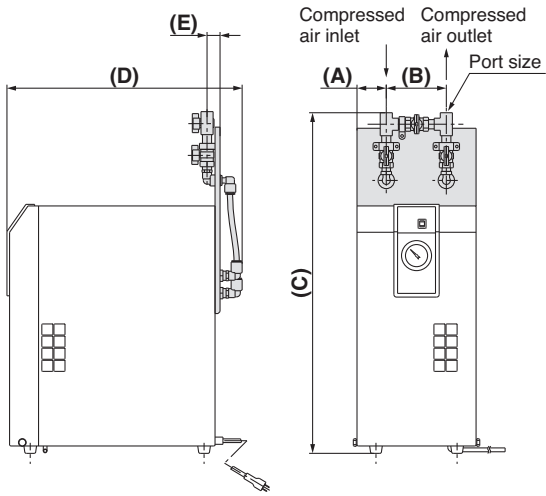
Dimensions

Part no.	Applicable dryer	Nominal thread size	Material	Pcs. of 1 set
IDF-AB500	IDFA4E to 75E	M10	Stainless steel	4

Optional Accessories

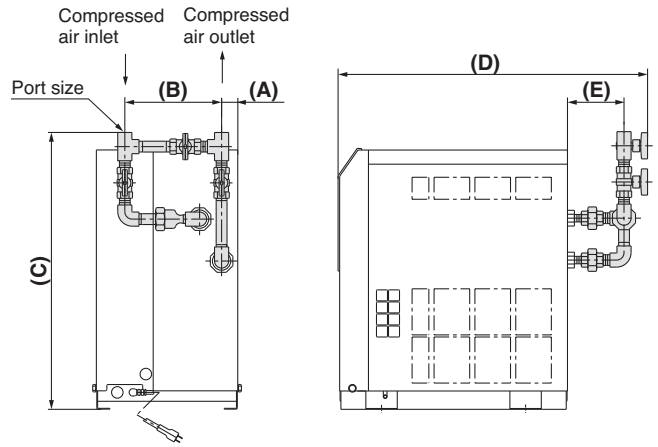
Dimensions

[Bypass piping set]
IDFA3E



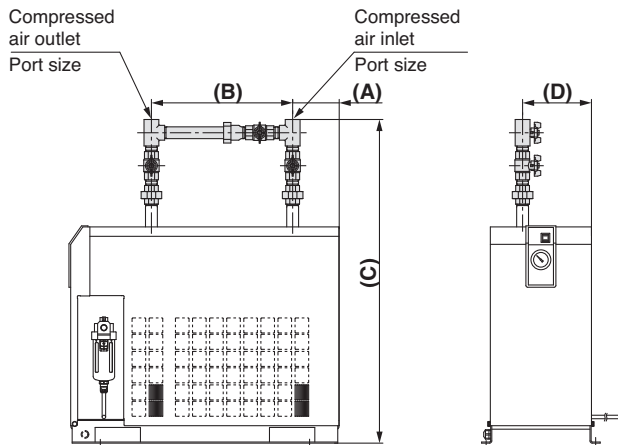
Part No.	Applicable dryer	Port size Rc	A	B	C	D	E	Weight (kg)
IDF-BP302	IDFA3E	3/8	56	114	642	445	21	1.6

IDFA4E to 15E1



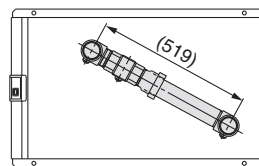
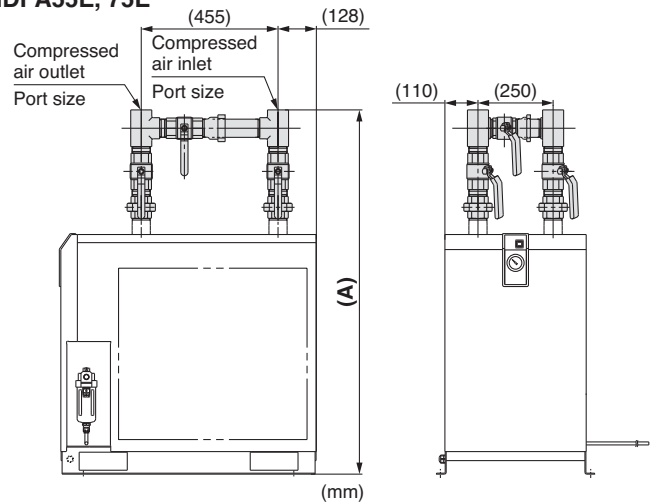
Part No.	Applicable dryer	Port size Rc	A	B	C	D	E	Weight (kg)
IDF	IDF-BP303	IDFA4E	31	175	531	595	110	2.3
	IDFA6E	555			617			
	IDF-BP304	IDFA8E	3/4	187	627	647	129	3.3
		IDFA11E						
IDF-BP316	IDFA15E1	1	41	210	710	774	136	5.3

IDFA22E, 37E



Part No.	Applicable dryer	Port size Rc	A	B	C	D	Weight (kg)
IDF-BP317	IDFA22E	1	134	405	928	198	4.4
IDF-BP318	IDFA37E	1 1/2			980		7.7

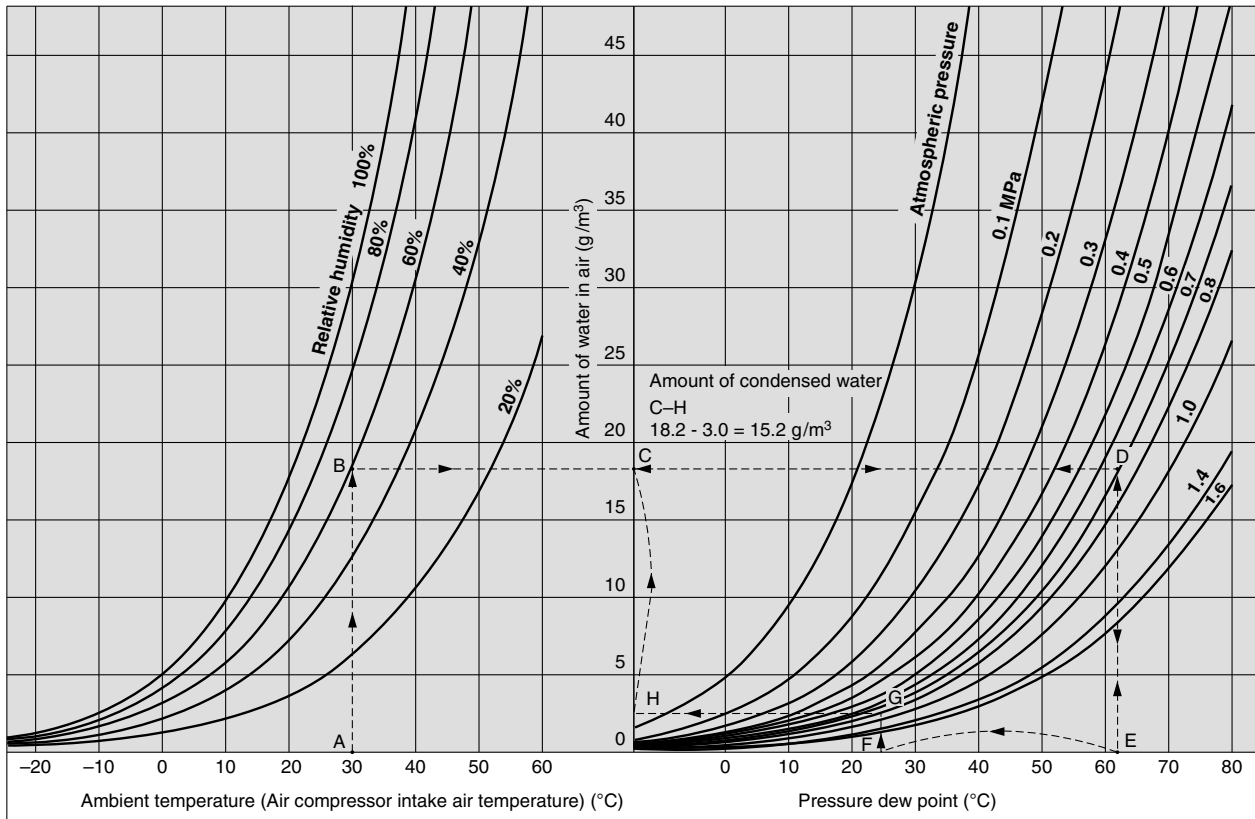
IDFA55E, 75E



Port Size

Part No.	Applicable dryer	Port size Rc	A	Weight (kg)
IDF-BP325	IDFA55E	2	1191	12.3
	IDFA75E		1291	

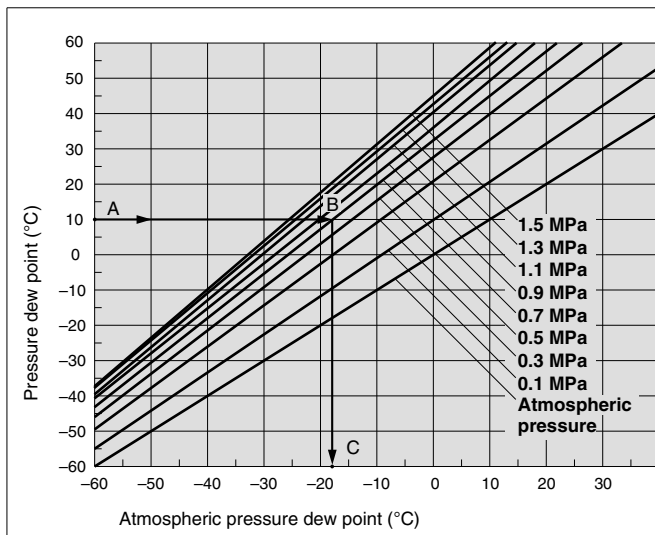
Condensed Water Calculation



How to calculate the amount of condensed water
 Example) To obtain the amount of condensed water when the inlet air of a compressor is pressurized to 0.7 MPa then cooled down to 25°C. Given an ambient temperature of 30°C and a relative humidity of 60%.

- Trace the arrow mark from point A of ambient temperature 30°C to obtain the intersection B on the curved line for the relative humidity of 60%.
- Trace the arrow mark from the intersection B to obtain the intersection D on the curved line for the 0.7 MPa pressure characteristics.
- Trace the intersection D to obtain the intersection E.
- The intersection E is the pressure dew point at 0.7 MPa with an ambient temperature of 30°C and a relative humidity of 60%. The value for E is at 62°C.
- Trace the intersection E upward to D and leftward to obtain the intersection C on the vertical line.
- The intersection C is the amount of water which is included in the compressed air 1 m³ at 0.7 MPa, a pressure dew point of 62°C. The amount of water is 18.2 g/m³.
- Trace the arrow mark from F (cooling temperature 25°C (pressure dew point 25°C)) to obtain the intersection G on the pressure characteristic line for 0.7 MPa.
- From the intersection G, trace the arrow mark to obtain the intersection H on the vertical line.
- The intersection H is the amount of water which is included in the compressed air 1 m³ at 0.7 MPa, pressure dew point of 25°C. The amount of water is 3.0 g/m³.
- Therefore, the amount of condensed water is as following. (per 1 m³)
 The amount of water at the intersection C
 – the amount of water at the intersection H
 = the amount of condensed water
 18.2 – 3.0 = 15.2 g/m³

Dew Point Conversion Chart



How to read the dew point conversion chart
 Example) To obtain the atmospheric dew point at a pressure dew point of 10°C, and a pressure of 0.7 MPa.

- Trace the arrow mark from point A at a pressure dew point of 10°C to obtain the intersection B on the pressure characteristic line for 0.7 MPa.
- Trace the arrow mark from point B to obtain the intersection C on the atmospheric pressure dew point.
- The intersection C is the conversion value –17°C under atmospheric pressure dew point.



Series IDFA□E

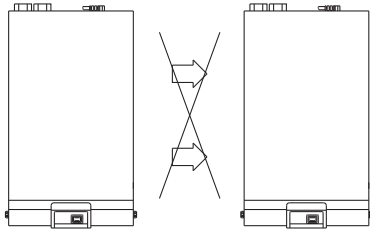
Specific Product Precautions 1

Be sure to read this before handling. For Air Preparation Equipment Precautions, refer to “Precautions for Handling Pneumatic Devices” (M-03-E3A).

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 with poor ventilation and high temperature.
- 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.

Drain Tube

⚠ Caution

- A polyurethane tube is attached as a drain tube for the IDFA3E to 75E. 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 vapour from discharging through the air outlet.)

Power Supply

⚠ Caution

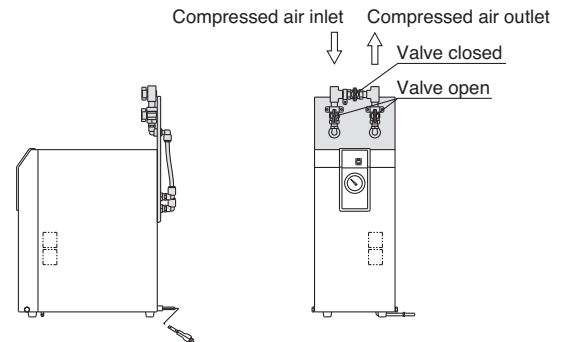
- Connect the power supply to the terminal block.
- Install a suitable circuit breaker applicable for the specific model.
- The voltage fluctuation should be maintained within 10% of the rated voltage.

Air Piping

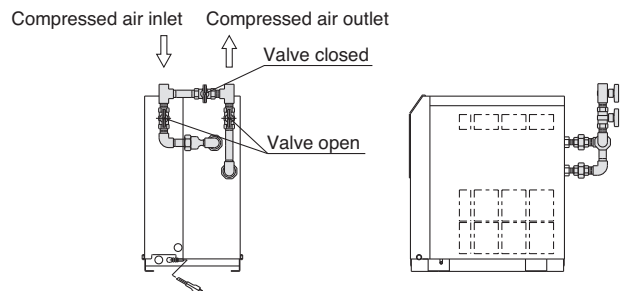
⚠ Caution

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

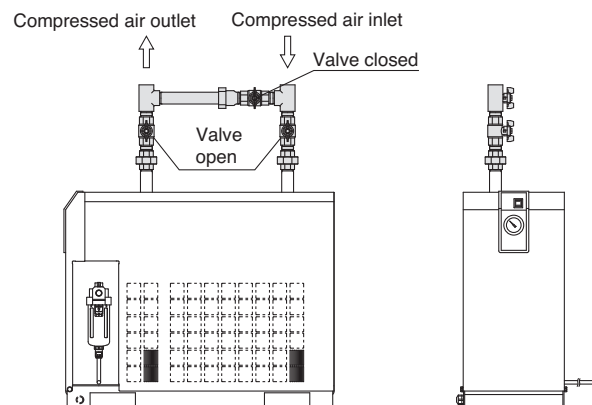
IDFA3E



IDFA4E to 15E1



IDFA22E, 37E





Series IDFA□E

Specific Product Precautions 2

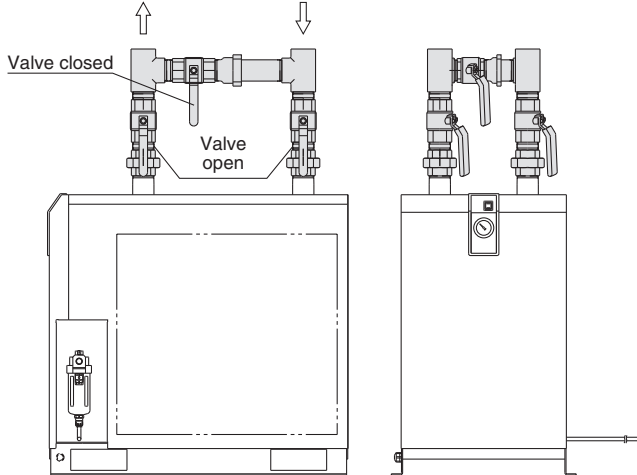
Be sure to read this before handling. For Air Preparation Equipment Precautions, refer to “Precautions for Handling Pneumatic Devices” (M-03-E3A).

Air Piping

⚠ Caution

IDFA55E, 75E

Compressed air outlet Compressed air inlet



- When tightening piping to 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 an adjustable angle wrench.
- Variations in the 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 the air piping to the air dryer.
- Do not allow the weight of the piping to lie directly on the air dryer.

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)
- When the fluctuation of the power supply is beyond the rated voltage $\pm 10\%$.
- 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 75E series.

Since the auto drain of the IDFA3E to 75E is designed in such a way that the valve remains open unless the air pressure rises to 0.15 MPa or higher, 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.




Time 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 will turn off and the dryer will not be activated.

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.

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

- *1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
- ISO 4413: Hydraulic fluid power – General rules relating to systems.
- IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
- ISO 10218-1: Manipulating industrial robots - Safety. etc.

Warning

- 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 catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
- 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.
- Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
 - 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.
 - 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.
 - Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
 - Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
 - Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
 - An application which could have negative effects on people, property, or animals requiring special safety analysis.
 - Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

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

- 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.
- 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.
- Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

*2) Vacuum pads are excluded from this 1 year warranty.

A 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 vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

- The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- 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.

Caution

- The product is provided for use in manufacturing industries.**
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Caution

- SMC products are not intended for use as instruments for legal metrology.**
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

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