



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 (m³/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			
IDFA11E	80	101	112			R407C (HFC)
IDFA15E1	120	152	168			
IDFA22E	182	231	254	Rc 1		
IDFA37E	273	347	382	R 1		
IDFA55E	390	432	510	R 1½		
IDFA75E	660	720	822			R 2



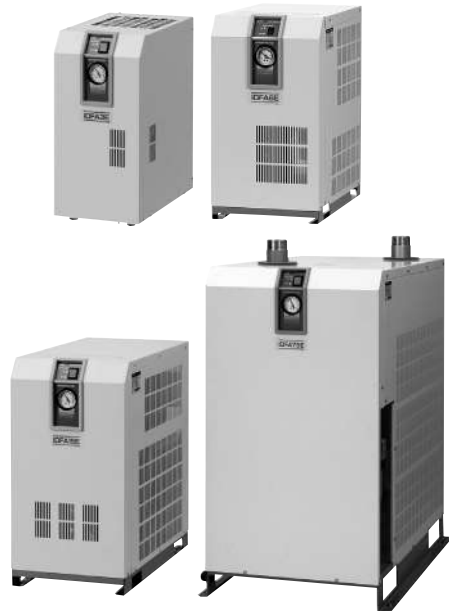
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1. Standard Products

Series IDFA

Standard inlet air type

Rated inlet air temperature: 35°C



Model	Rated inlet condition	Air flow capacity (m³/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	
IDFA22E		182	231	254	R407C (HFC)	R 1	P. 6 to 8
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	
With Chinese labels and a Chinese operation manual	IDFA3E to 75E	IDFA□E-23-G	
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.

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)

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.)

4 Option

5 Finalise the model number.

6 Select accessories sold separately.

IDFA E Selection Example

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.

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

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.

Refer to page 3, 6.

Refer to page 3, 6.

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		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

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

Model		Air flow capacity (m³/h [ANR])				
		IDFA15E1	IDFA22E	IDFA37E	IDFA55E	IDFA75E
Outlet air pressure dew point	3°C	120	182	273	390	660
	7°C	152	231	347	432	720
	10°C	168	254	382	510	822

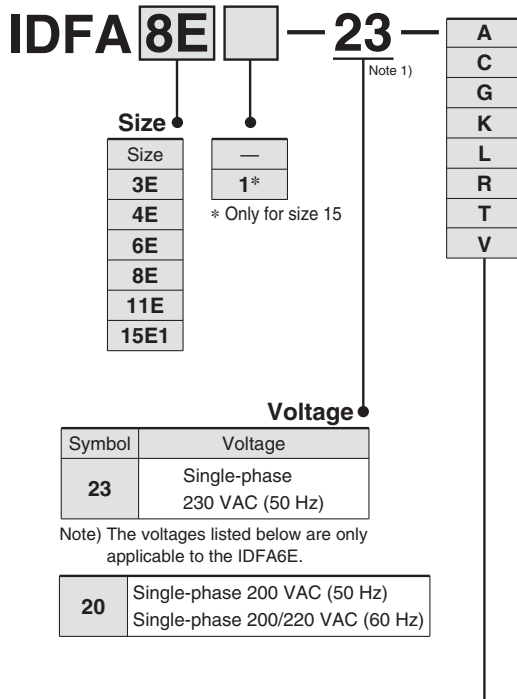
Refrigerant R134a (HFC)

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	G	K	L	R	T	V
Option	None	Cool compressed air output	Anti-corrosive treatment	With Chinese labels and a Chinese operation manual	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									
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.

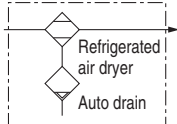
Note 3) Refer to page 9 for further details on optional specifications.

Note 4) 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



JIS Symbol



Specifications			Model	Standard temperature air inlet						
				IDFA3E	IDFA4E	IDFA6E Note 5)	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						
	Ambient temperature (Humidity) (°C)			2 to 40 (Relative humidity of 85% or less)						
Rated specifications Note 4)	Air flow capacity m³/h	Note 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	
		Note 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						
	Electric	Power supply voltage			Single-phase: 230 VAC [Voltage fluctuation ±10%] 50 Hz					
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) (A) (sensitivity current 30 mA)			5						10	
Condenser			Air-cooled							
Refrigerant			R134a (HFC)							
Refrigerant charge			0.15	0.2	0.23	0.27	0.29	0.47		
Auto drain			Float type (Normally open)							
Port size			Rc 3/8	Rc 1/2	Rc 3/4			Rc 1		
Accessory (kg)			Hexagon nipple							
Weight			18	22	23	27	28	46		
Coating color			Body panel: White 1 Base: Grey 2							
Compliant standards			EC Directive (with CE marking)							

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 2).

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.

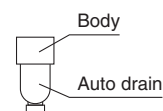
Replacement Parts

Model	IDFA3E	IDFA4E	IDFA6E	IDFA8E	IDFA11E	IDFA15E1
Auto drain replacement part no. ^{Note 8)}	AD38-A		AD48-A			

Note 8) The part number for the auto drain components without including the body part.

Body part replacement is impossible.

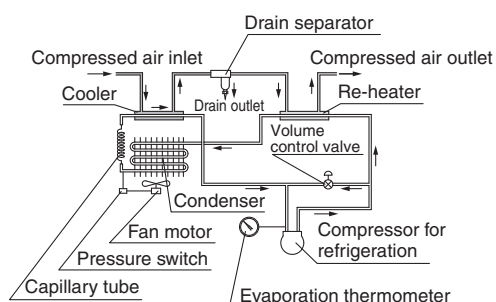
Note 9) The specifications of the IDFA6E-20 are the same as those of the IDF6E-20 aside from the compliant standards.



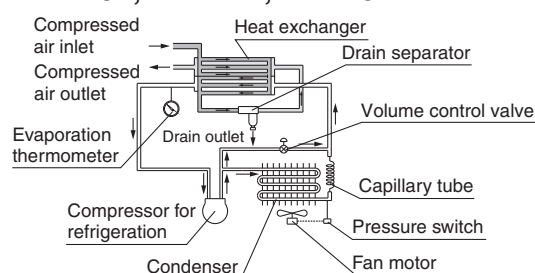
Construction (Air/Refrigerant Circuit)

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

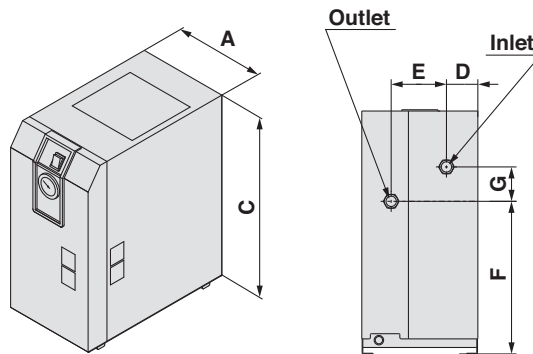


IDFA4E, IDFA6E IDFA8E, IDFA11E, IDFA15E1

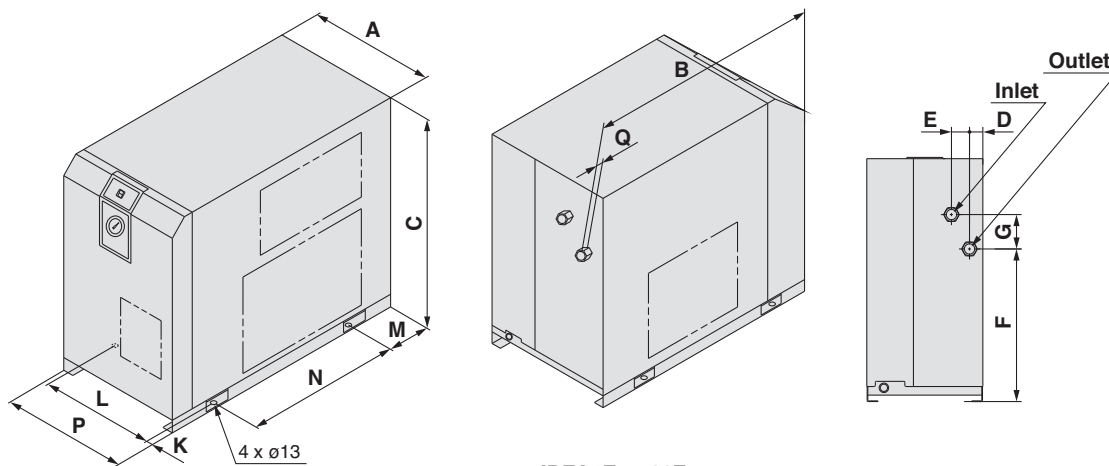


Dimensions

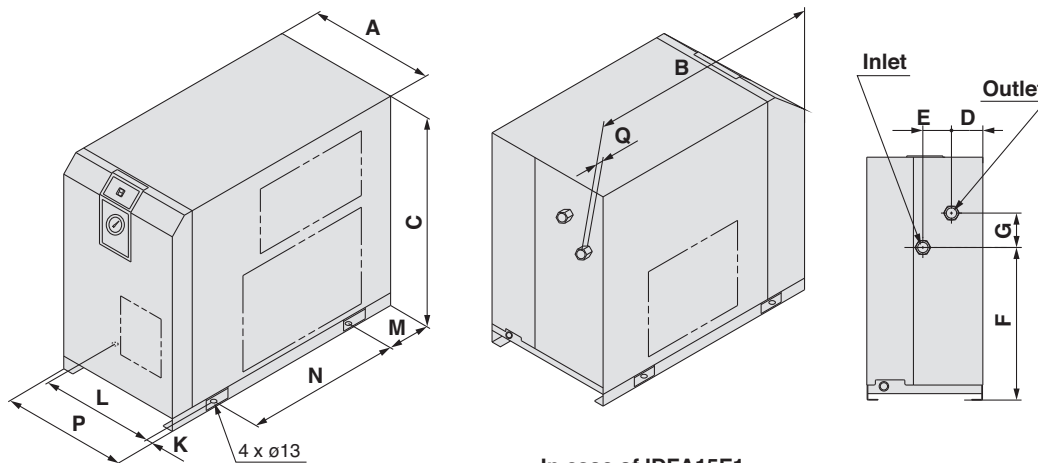
IDFA3E to 15E1



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)

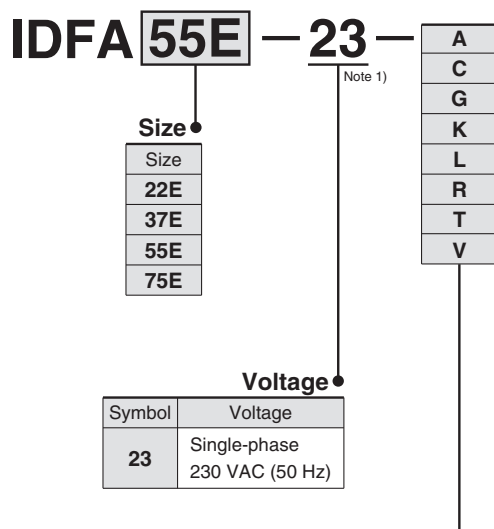
Series IDFA□E

22E, 37E, 55E, 75E

(Inlet air temperature: 35°C)



How to Order



Options and Available Combinations (Size/Option)

Symbol Note 2)	—	A	C	G	K	L	R	T	V
Option	None	Cool compressed air output	Anti-corrosive treatment	With Chinese labels and a Chinese operation manual	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									
22E	●	—	●	●	●	●	●	●	●
37E	●	—	●	●	●	●	●	●	●
55E	●	—	●	●	—	●	●	●	●
75E	●	—	●	●	—	●	●	●	●

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.

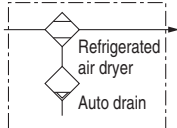
However, the following combination cannot be achieved.

- 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.



JIS Symbol



Standard Specifications

Specifications			Model	Standard temperature air inlet			
				IDFA22E	IDFA37E	IDFA55E	IDFA75E
Operating range Note 3)	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 4)	Air flow capacity m³/h	Note 1) Standard condition (ANR)	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
		Note 2) Compressor intake condition	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 Note 6) (W)			760		1130	1700	
Operating current Note 6) (A)			4.3		5.4	7.9	
Applicable circuit breaker capacity Note 5) (A)			10			20	
Condenser			Air-cooled				
Refrigerant			R407C (HFC)				
Refrigerant charge (kg)			0.42	0.73	0.55	0.67	
Auto drain			Float type (Normally open)				
Port size			R 1	R 1½	R 2		
Accessory			—				
Weight (kg)			54	62	100	116	
Coating color			Body panel: White 1 Base: Grey 2				
Compliant standards			EC Directive (with CE marking)				

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) When operating conditions are different from the rated specifications, please select a model in accordance with the Model Selection.

Note 5) Product other than the option R is not equipped with an earth leakage breaker. Please purchase an appropriate earth leakage breaker separately.

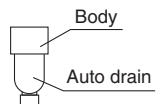
Note 6) These values are reference values under rated conditions, and are not guaranteed. Do not use these values for the thermal set values, etc.

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	IDFA22E	IDFA37E	IDFA55E	IDFA75E
Auto drain replacement part no. Note 8)	AD48-A			

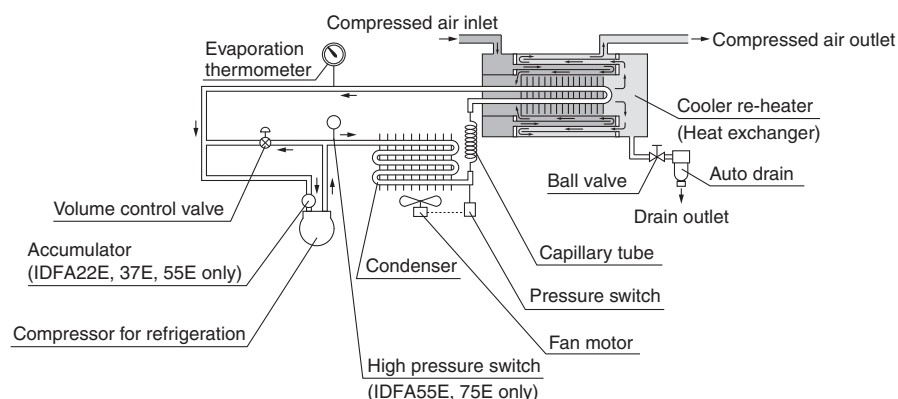
Note 8) The part number for the auto drain components without including the body part.
Body part replacement is impossible.



Construction (Air/Refrigerant Circuit)

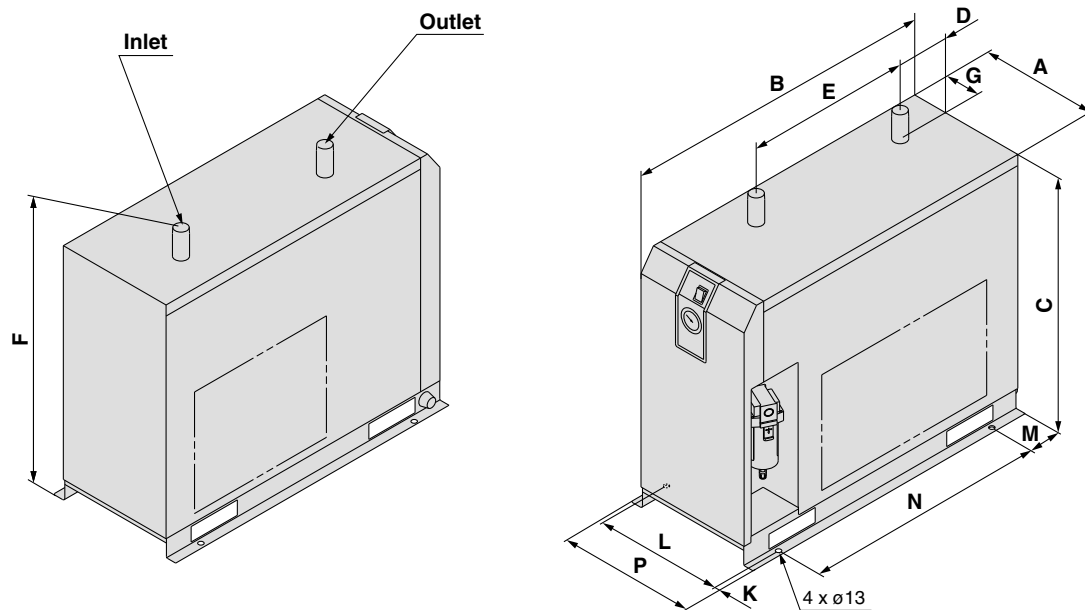
Humid, hot air coming into the air dryer will be cooled down by a cooler re-heater (heat exchanger). Water condensed at this time will be removed from the air by auto drain and drained out automatically. Air separated from the water will be heated by a cooler re-heater (heat exchanger) to obtain the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

IDFA22E, IDFA37E, IDFA55E, IDFA75E



Dimensions

IDFA22E, IDFA37E

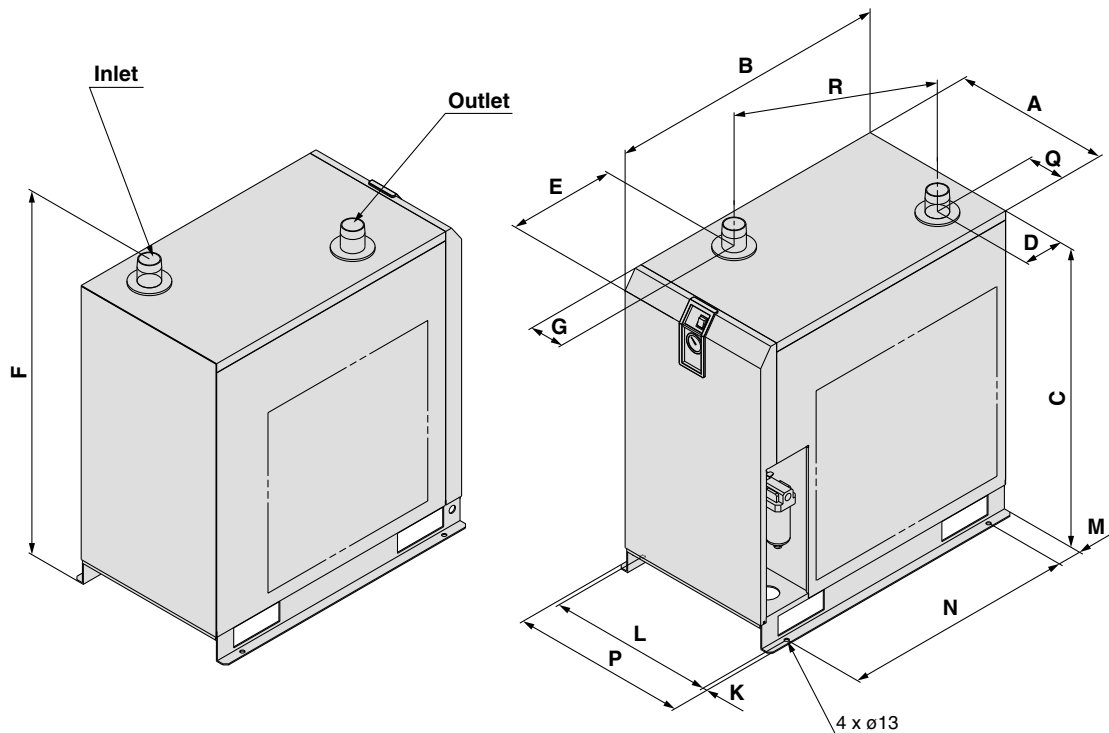


Dimensions

(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		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				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 m³/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 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, as 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

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-S1926	The AD48-8-A-X2112 auto drain, insulator, and one-touch fitting are included.
IDFA22E, 37E	AD48-8-A-X2112	Single auto drain unit

K Option symbol

Moderate pressure specification IDFA100F to 150F

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

Specifications

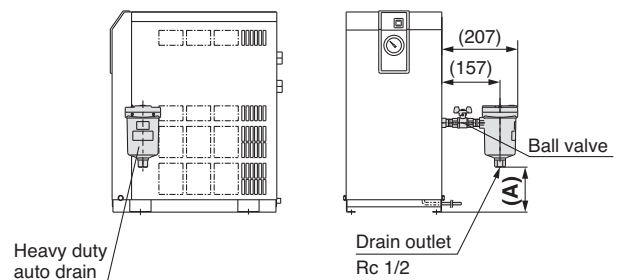
1. Maximum operating pressure: 1.6 MPa
2. Dimensions ... same as standard products

L Option symbol

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

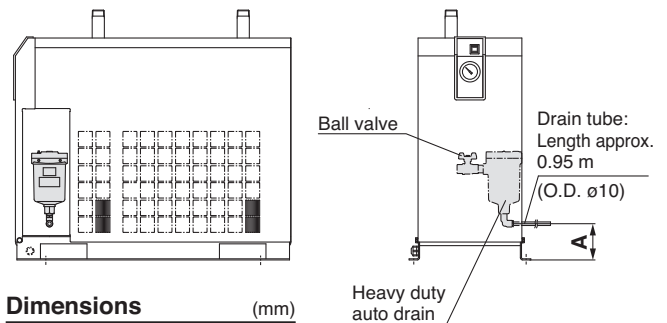
The float type auto drain used in the standard air dryer is replaced with a heavy duty auto drain (ADH4000-04) which enables the drainage to discharge more efficiently.

IDFA4E to 15E1



Dimensions (mm)	
Model	A
IDFA4E	55
IDFA6E	67
IDFA8E, 11E	139
IDFA15E1	47

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 part no. (Description)	Configuration
IDFA4E to 15E1	ADH4000-04 (Heavy duty auto drain)	Heavy duty auto drain
IDFA22E to 75E	ADH-E400 (Replacement kit for exhaust mechanism)	Replacement kit for exhaust mechanism
		Housing (You don't need to purchase a new housing.)

Series IDFA□E

Options 2

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

R

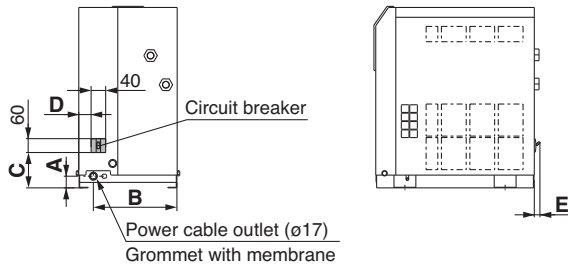
Option symbol

With ground fault circuit interrupter

IDFA4E to 75E

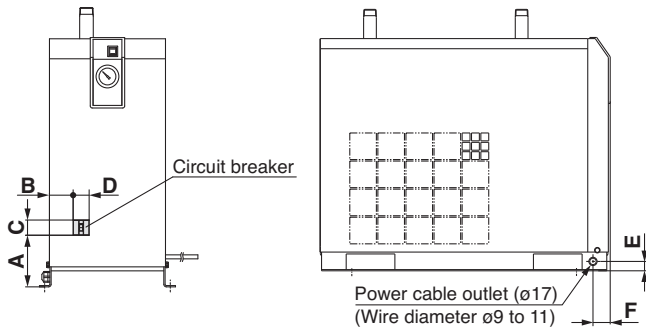
A circuit breaker with cover is attached to the side of the air dryer. This saves additional electrical wiring at the time of installation.

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	F
IDFA22E	125	59	60	40	25	46
IDFA37E		39				
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)

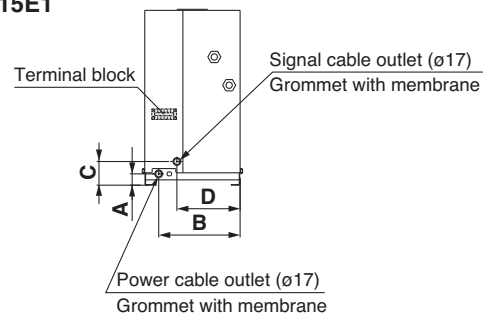
Also, in the case of remote control, operate it from the power supply side while the air dryer switch remains ON.

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.

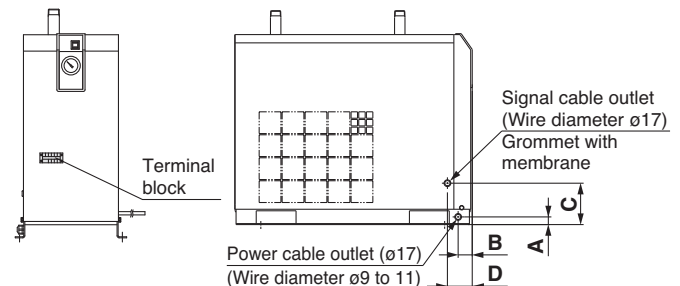
Note) Please be sure to confirm the electric circuits with the drawings or instruction manual before using the output signal.

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

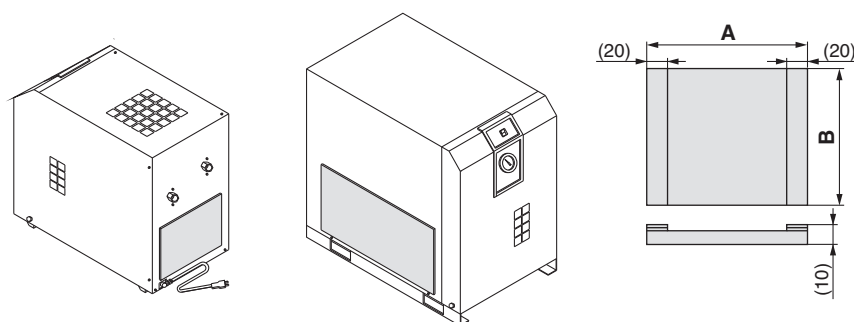
Symbol	Applicable dryer	Thread type
302	IDFA3E	Rc
303	IDFA4E	
304	IDFA6E to 11E	
316	IDFA15E1	
317	IDFA22E	R
318	IDFA37E	
325	IDFA55E	
	IDFA75E	

Note) Applicable to the medium air pressure up to 1.0 MPa.

Dust-protecting Filter Set / Dimensions

Dimensions (mm)

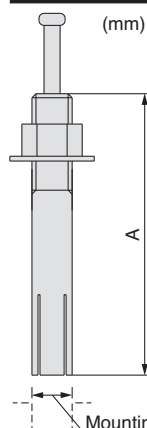
Part no.	Applicable dryer	A	B	Weight (g)
IDF-FL201	IDFA3E	220	240	35
IDF-FL202	IDFA4E	310	195	45
IDF-FL203	IDFA6E	375	195	55
IDF-FL204	IDFA8E	340	265	70
IDF-FL205	IDFA11E	375	265	75
IDF-FL206	IDFA15E1	310	270	70
IDF-FL207	IDFA22E	420	315	100
IDF-FL208	IDFA37E	550	365	140
IDF-FL213	IDFA55E	720	400	175
IDF-FL214	IDFA75E	610	560	190



(IDF-FL209)

(IDF-FL202 to 208, 213, 214)

Foundation Bolt Set / Dimensions



Dimensions (mm)

Part no.	Applicable dryer	Nominal thread size	Material	Pcs. of 1 set	A
IDF-AB500	IDFA4E to 75E	M10	Stainless steel	4	50

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

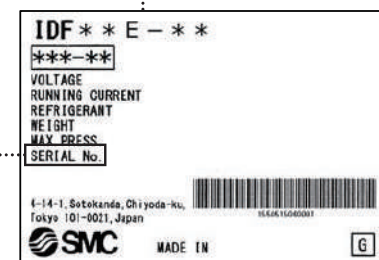
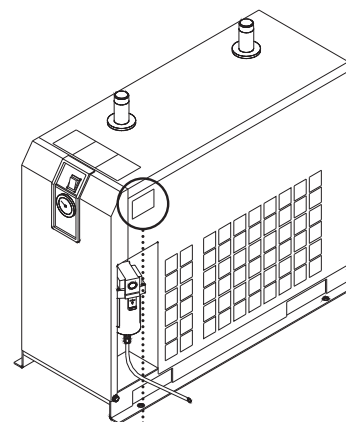


Transparent bowl guard
(Polycarbonate)

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

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

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

Previous model



New model



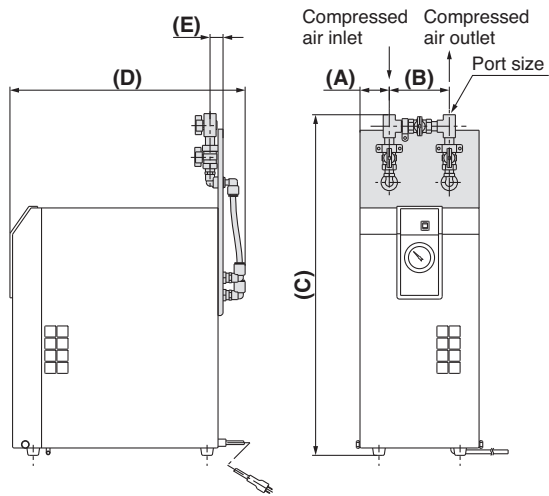
Dryer model	Auto drain (Bowl assembly) part no.		Manufacturing date	SERIAL No.
IDFA6E/8E/11E/15E1 -K	Previous	IDF-S0086 *1	Manufactured in February 2019 and before	XP and before
	New	IDF-S1926 *2	Manufactured in March 2019 and after	XQ and after
IDFA22E/37E -K	Previous	AD48-8-X2110	Manufactured in February 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

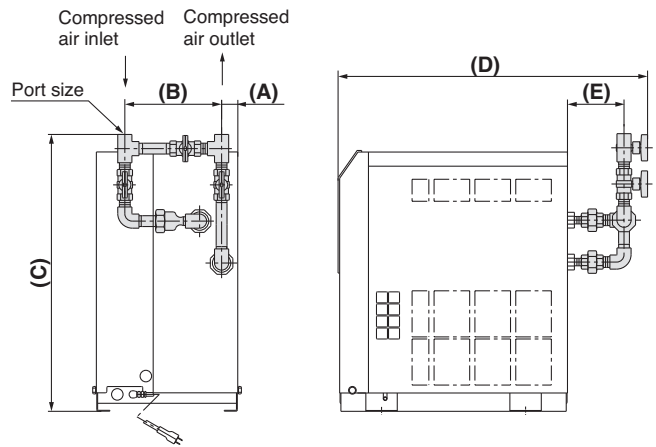
Dimensions

[Bypass piping set]
IDFA3E



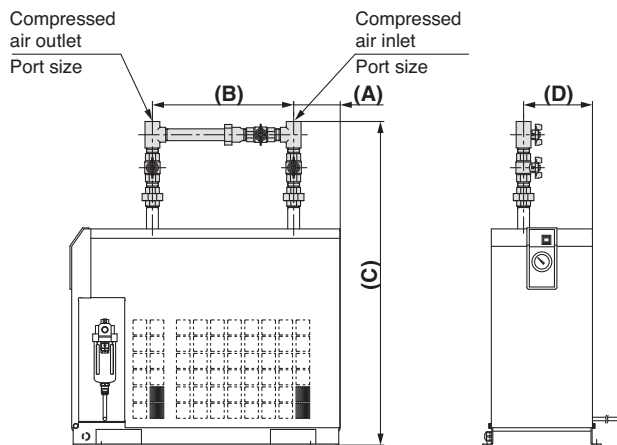
Dimensions (mm)								
Part No.	Applicable dryer	Port size Rc	A	B	C	D	E	Weight (kg)
IDF-BP302	IDFA3E	3/8	56	114	642	445	21	1.6

IDFA4E to 15E1



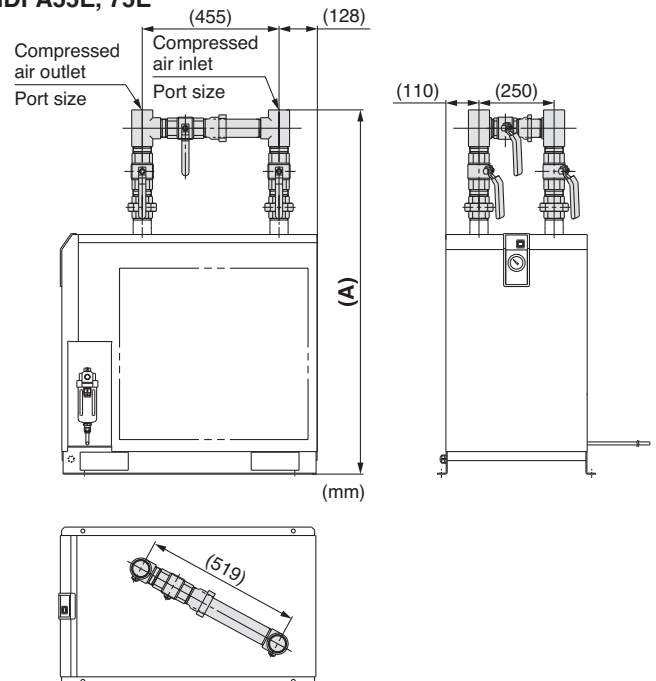
Dimensions (mm)								
Part No.	Applicable dryer	Port size Rc	A	B	C	D	E	Weight (kg)
IDF	IDF-BP303	IDFA4E	1/2	31	175	531	595	110
	IDF-BP304	IDFA6E	3/4		187	555	617	129
	IDF-BP304	IDFA8E	3/4		187	627	647	129
	IDF-BP316	IDFA11E	3/4		187	627	647	129
IDF-BP316	IDFA15E1	1	41	210	710	774	136	5.3

IDFA22E, 37E



Dimensions (mm)							
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	134	405	980	198	7.7

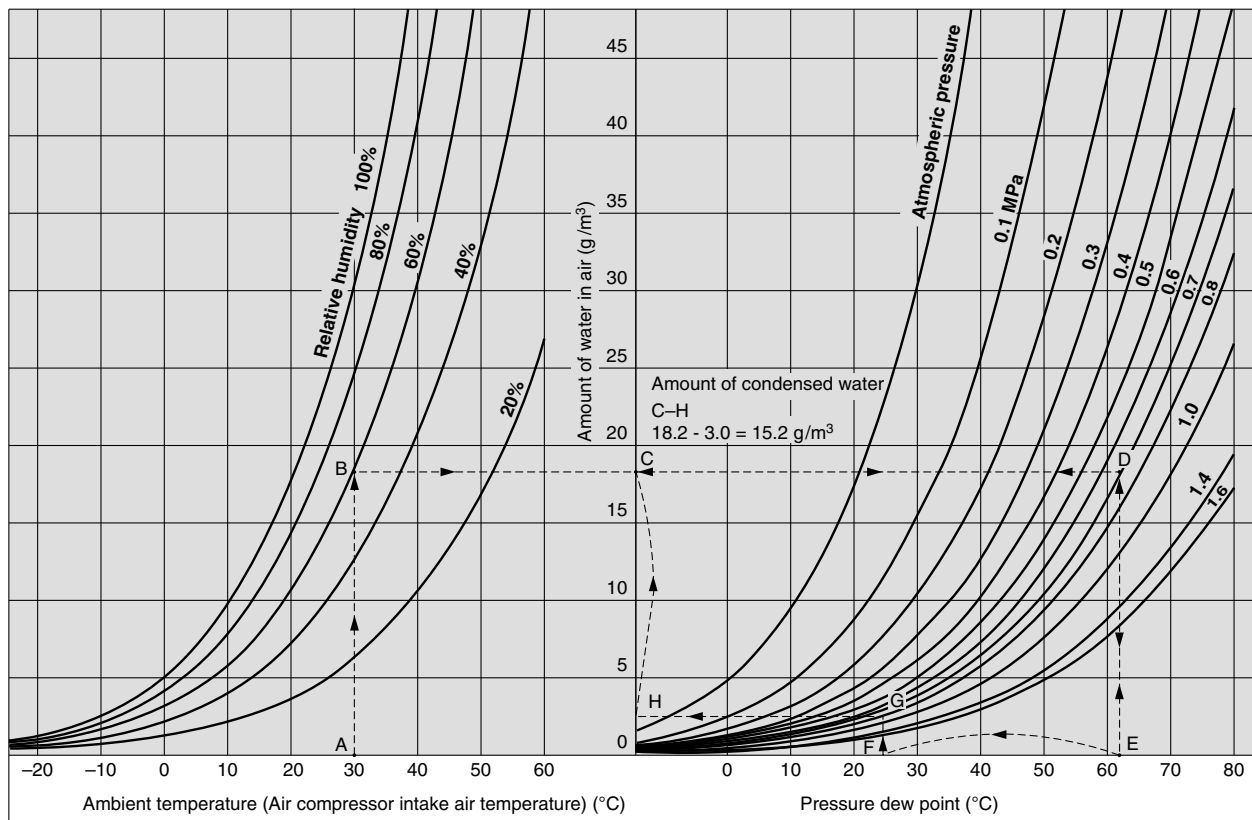
IDFA55E, 75E



Port Size

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

Condensed Water Calculation

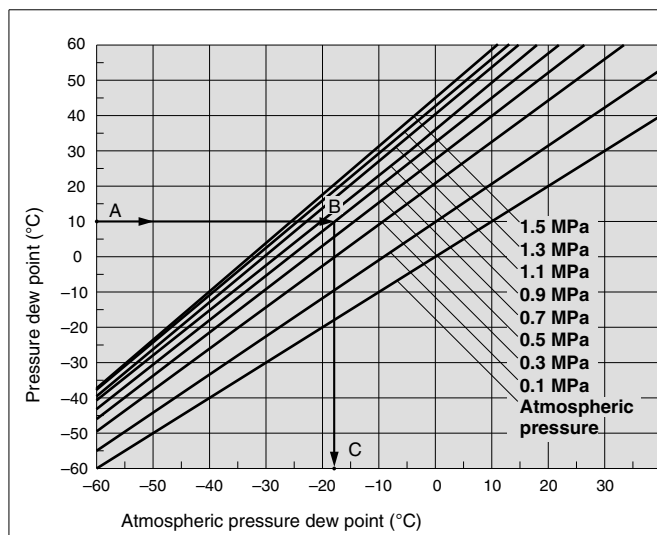


How to calculate the amount of condensed water

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

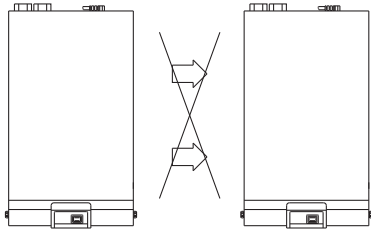
Specific Product Precautions 1

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.
- Avoid locations which experience sudden pressure/flow rate changes.

Drain Tube

⚠ Caution

- A polyurethane tube is attached as a drain tube for the IDFA3E to 75E and IDFA100F to 150F. Use this tube to discharge drain-age.
- 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

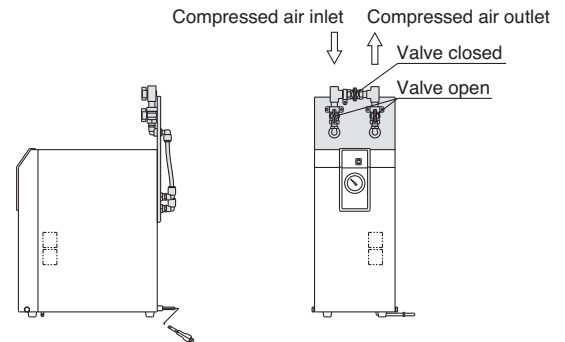
- Connect the power supply to the terminal block.
- Install a suitable circuit breaker applicable for the specific model.
- The voltage fluctuation should be maintained within 10% of the rated voltage.

Air Piping

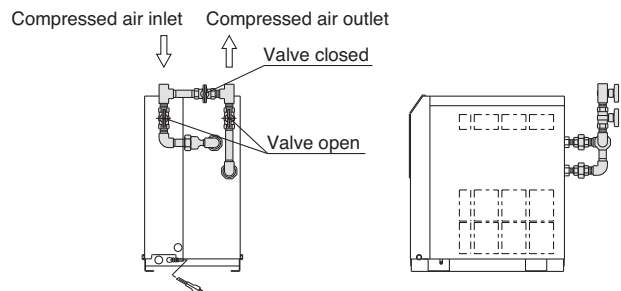
⚠ Caution

- 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.

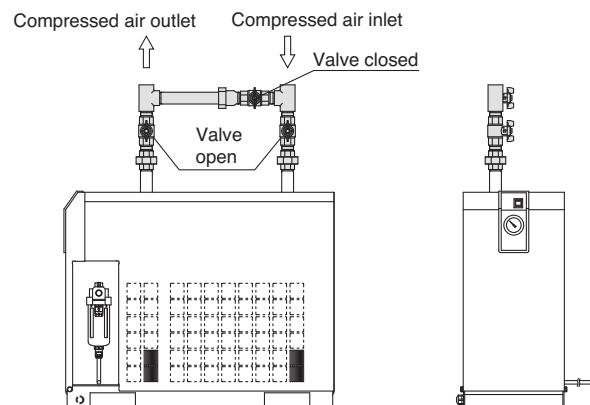
IDFA3E



IDFA4E to 15E1



IDFA22E, 37E





Series IDFA□E

Specific Product Precautions 2

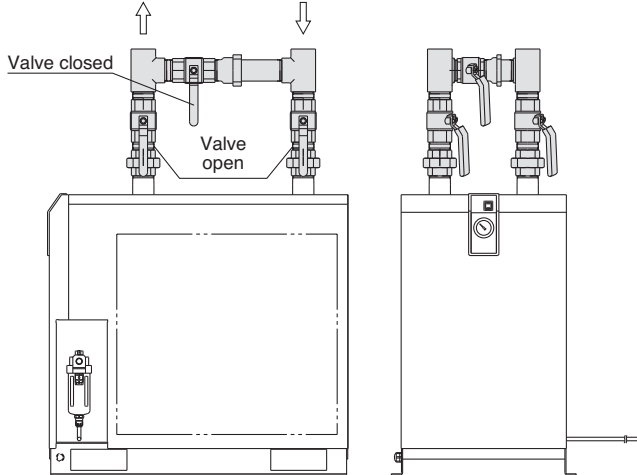
Be sure to read this before handling. For Air Preparation Equipment Precautions, refer to “Precautions for Handling Pneumatic Devices” (M-03-E3A).

Air Piping

⚠ Caution

IDFA55E, 75E

Compressed air outlet Compressed air inlet



- When tightening piping 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)
- 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 dm^3/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 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.

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

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 catalogue 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. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. 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.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. 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.

Caution

1. 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.

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 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

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.

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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Croatia	+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	+420 541424611	www.smc.cz	office@smc.cz
Denmark	+45 70252900	www.smc.dk.com	smc@smcdk.com
Estonia	+372 651 0370	www.smcee.ee	info@smcee.ee
Finland	+358 207513513	www.smc.fi	smc.fi@smc.fi
France	+33 (0)164761000	www.smc-france.fr	supportclient@smc-france.fr
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Greece	+30 210 2717265	www.smchellas.gr	sales@smchellas.gr
Hungary	+36 23513000	www.smc.hu	office@smc.hu
Ireland	+353 (0)14039000	www.smcautomation.ie	sales@smcautomation.ie
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Netherlands	+31 (0)205318888	www.smc.nl	info@smc.nl
Norway	+47 67129020	www.smc-norge.no	post@smc-norge.no
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