Membrane Air Dryer

RoHS New

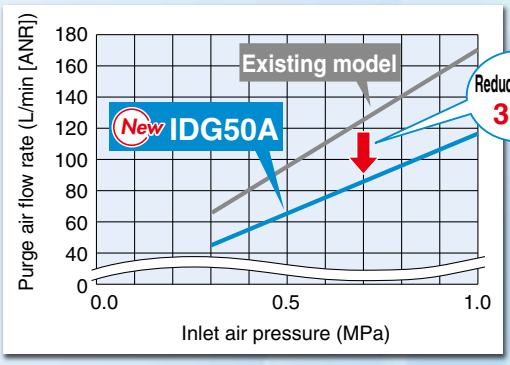
Possible to easily supply dry air using the hollow fiber membrane!

Non-fluorocarbon | Compatible with low dew point (−60°C) | No vibration or heat discharge

Energy saving

Reduced in purge air flow by up to 39 (L/min [ANR]) Reduced purge IDG□A Series

Cost reduced by up to 21,060 yen/year !



Purge air flow rate (rated conditions)

Model	Running cost (yen/year)	Purge air flow rate (L/min [ANR])	Purge ratio (%)
New IDG50A	46,440	86	15
Existing model	67,500	125	20

[Calculation conditions]
Air unit price: 3 yen/m³ Operating hours: 12 hours/day Annual operating days: 250 days/year

Variations

Single Unit Type

Reduced purge IDG□A Series

IDG□A
Purge air flow reduction type
A white body is introduced.

IDG1
Tube configuration low flow rate type

Unit Type

<Type M>
When dry clean air is required.
Mist separator + Micro mist separator + IDG

<Type V>
When dry clean air and pressure control are required.
Mist separator + Micro mist separator + IDG + Regulator

Single Unit

Body size / Standard dew point	1	3, 5 10, 20	30	50	60	75	100
−20°C/Nil	●	●	★	★	●	●	●
−15°C/Type H		●	★	★	●	●	●
−40°C/Type L			★	★	★	★	★
−60°C/Type S					★	★	★

New ★ IDG□A
● IDG

Series IDG□A/IDG

SMC

Space saving

Total length is shortened.
Max. 59 mm

Series \ Size	30	50	60	75	100
New IDG□A	269	308	348	418	483
Existing model	271	315	392	472	542

∗ Standard dew point: –40°C/L, –60°C/H

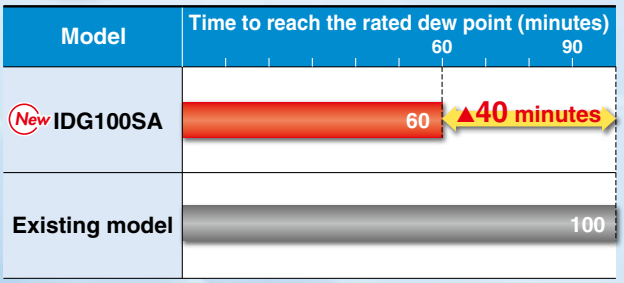
Reduced purge IDG□A Series

High performance

Time to reach the rated dew point
Shortened by 40 minutes

Reduced purge IDG□A Series

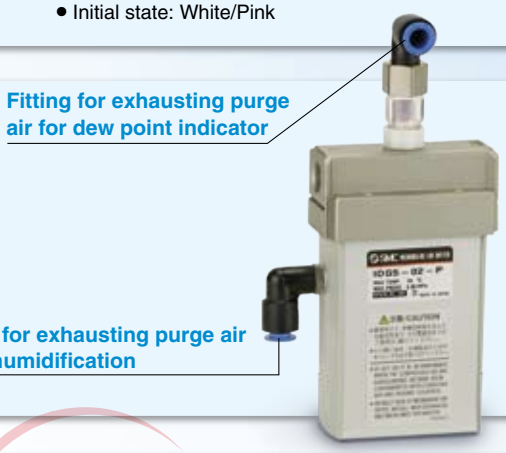
Under SMC test condition



Dew point indicator visually confirms air drying.

(Except IDG1)
(Optional on IDG3, IDG5, IDG3H, IDG5H)

◎ Color of the dew point indicator
- Normal operating: Blue
- Initial state: White/Pink



Model with fitting for purge air discharge is also available.

When purge air discharge is undesirable in the area around the membrane air dryer, it can be discharged to atmosphere via tubing (option).

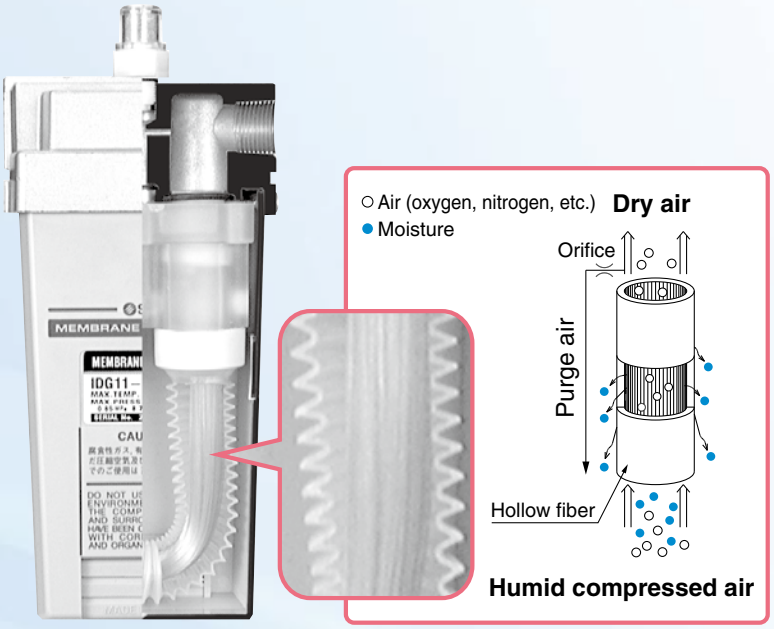
Reduced in purge air discharge noise with built-in silencer

(Except IDG1, IDG3, IDG3H, IDG5, IDG5H, IDG30A, IDG30HA, IDG30LA, IDG50A, IDG50HA, IDG50LA)

Dehumidification Principle

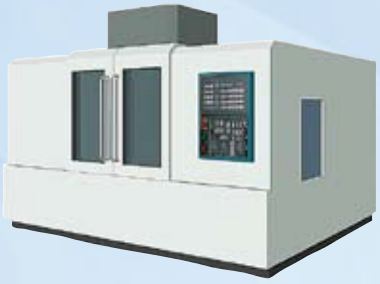
The membrane air dryer uses hollow fibers composed of a macro molecular membrane through which moisture passes easily, but is difficult for air (oxygen and nitrogen) to pass through.

When humid, compressed air is supplied to the inside of the hollow fibers, only moisture permeates the membrane and moves to the outside due to the pressure difference between the moisture inside and outside of the fibers. The compressed air becomes dry air and continues out of the dryer. Part of the dry air from the outlet side is passed through a very small orifice to reduce the pressure and purge the outside of the hollow fibers. The moisture which permeated to the outside of the hollow fibers is discharged to the atmosphere by this purge air. In this way, the partial pressure outside of the hollow fibers remains low and dehumidification is continuously performed.

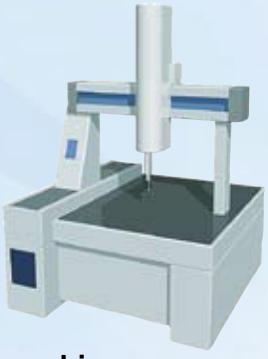


Application Examples

Machine tool

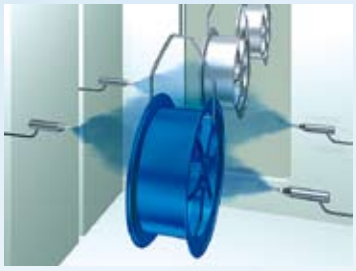


Measuring machine



Semiconductor-related manufacturing equipment

Powder coating



Food machinery

Packaging machine (sealing of film and paper package)

Others

- Dental equipment
- Chemical analysis equipment
- Ozonizers, Hydrogen gas generating equipment
- Printed circuit board IC mounting machines
- Fine particle drying, Transfer equipment
- Drying and cleaning of precision parts
- Condensation prevention in control panels
- General pneumatic equipment and pneumatic tools

Series Variations

Meets a wide variety of flow rates (10 to 1000 L/min [ANR]) and dew points (Atmospheric pressure dew point: −15°C to −60°C).

Single Unit Type

Standard dew point: −20°C		Standard dew point: −15°C		Standard dew point: −40°C		Standard dew point: −60°C	
Series	Outlet air flow rate L/min [ANR]	Series	Outlet air flow rate L/min [ANR]	Series	Outlet air flow rate L/min [ANR]	Series	Outlet air flow rate L/min [ANR]
IDG1	10						
IDG3	25	IDG3H	25				
IDG5	50	IDG5H	50				
IDG10	100	IDG10H	100				
IDG20	200	IDG20H	200				
IDG30A	300	IDG30HA	300	IDG30LA	75		
IDG50A	500	IDG50HA	500	IDG50LA	110		
IDG60	600	IDG60H	600	IDG60LA	170	IDG60SA	50
IDG75	750	IDG75H	750	IDG75LA	240	IDG75SA	100
IDG100	1000	IDG100H	1000	IDG100LA	300	IDG100SA	150

Page 1
Page 2

= New

Note) Standard dew point: Outlet air atmospheric pressure dew point under standard performance conditions
Outlet air flow rate: Values under standard performance conditions

Unit Type

<Type M>

A mist separator, micro mist separator, or micro mist separator with pre-filter combined with a single unit

Standard dew point: −20°C		Standard dew point: −15°C		Standard dew point: −40°C		Standard dew point: −60°C	
Series	Outlet air flow rate L/min [ANR]	Series	Outlet air flow rate L/min [ANR]	Series	Outlet air flow rate L/min [ANR]	Series	Outlet air flow rate L/min [ANR]
IDG3M3	25	IDG3HM3	25				
IDG5M3	50	IDG5HM3	50				
IDG10M3	100	IDG10HM3	100				
IDG20M3	200	IDG20HM3	200				
IDG30AM3	300	IDG30HAM3	300	IDG30LAM3	75		
IDG50AM3	500	IDG50HAM3	500	IDG50LAM3	110		
IDG60M2	600	IDG60HM2	600	IDG60LAM3	170	IDG60SAM3	50
IDG75M2	750	IDG75HM2	750	IDG75LAM3	240	IDG75SAM3	100
IDG100M2	1000	IDG100HM2	1000	IDG100LAM3	300	IDG100SAM3	150

Page 15
Page 16

∗ Rated conditions are 0.7 MPa of inlet air pressure and 25°C of inlet air temperature.

<Type V>

A regulator combined with the type M

Standard dew point: −20°C		Standard dew point: −15°C		Standard dew point: −40°C		Standard dew point: −60°C	
Series	Outlet air flow rate L/min [ANR]	Series	Outlet air flow rate L/min [ANR]	Series	Outlet air flow rate L/min [ANR]	Series	Outlet air flow rate L/min [ANR]
IDG3V3	25	IDG3HV3	25				
IDG5V3	50	IDG5HV3	50				
IDG10V3	100	IDG10HV3	100				
IDG20V3	200	IDG20HV3	200				
IDG30AV3	300	IDG30HAV3	300	IDG30LAV3	75		
IDG50AV3	500	IDG50HAV3	500	IDG50LAV3	110		
IDG60V2	600	IDG60HV2	600	IDG60LAV3	170	IDG60SAV3	50
IDG75V2	750	IDG75HV2	750	IDG75LAV3	240	IDG75SAV3	100
IDG100V2	1000	IDG100HV2	1000	IDG100LAV3	300	IDG100SAV3	150

Page 15
Page 16

∗ Rated conditions are 0.7 MPa of inlet air pressure and 25°C of inlet air temperature.

Made to Order

Symbol	Contents
-X016	With element service indicator
-X017	With micro mist separator regulator
-X032	With differential pressure gauge

RoHS

Membrane Air Dryer/Single Unit Type

Series IDG□A

Standard dew point –20°C, –15°C, –40°C, –60°C

How to Order

Reduced purge IDG□A Series

IDG 30 □ A – □ 03 □ – □

Size

30
50
60
75
100

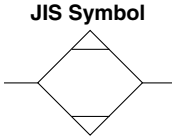
Standard dew point temperature and air flow rate

Symbol	Standard dew point (°C)	Flow rate by size Outlet air flow rate (L/min [ANR])				
		30	**50**	**60**	**75**	**100**
Nil	–20	300	500	Select from **Series IDG**		
H	–15	300	500			
L	–40	75	110	170	240	300
S	–60	—	—	50	100	150

Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

JIS Symbol



Option

Symbol	Contents
Nil	None (Standard)
P	With fitting for purge air discharge
R	Flow direction (Right → Left)

Note) In the case of two or more options, indicate them alphabetically.

Accessory

Symbol	Type
Nil	None (Standard)
B	With bracket

Note) When symbol B is indicated, a bracket assembly with a part number shown in the table left below is included as an accessory.

Port size

Symbol	Port size	Size				
		30	**50**	**60**	**75**	**100**
02	1/4	●	●	—	—	—
03	3/8	●	●	●	●	●
04	1/2	—	—	●	●	●

Bracket Assembly (Accessory) Part No.

Part no.	Applicable model
BM64	IDG30□A, IDG50□A
BM65	IDG60□A, IDG75□A, IDG100□A

∗ With cap bolts (2 pcs.) and spring washers (2 pcs.)

RoHS

Membrane Air Dryer/Single Unit Type

Series IDG

How to Order

IDG **10** □ – □ **02** □ – □

Size

1
3
5
10
20
60
75
100

Standard dew point temperature and air flow rate

Symbol	Standard dew point (°C)	Flow rate by size Outlet air flow rate (L/min [ANR])							
		1	3	5	10	20	60	75	100
Nil	–20	10	25	50	100	200	600	750	1000
H	–15	—	25	50	100	200	600	750	1000
L	–40	—	—	—	—	—	Select from Series IDG□A		
S	–60	—	—	—	—	—			

Accessory

Symbol	Type
Nil	None (Standard)
B	With bracket (Except IDG1)

Note) When symbol B is indicated, a bracket assembly with a part number shown in the table left below is included as an accessory.

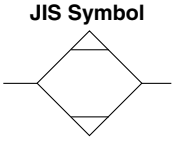
Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

Port size

Symbol	Port size	Size							
		1	3	5	10	20	60	75	100
01	1/8	—	●	●	—	—	—	—	—
02	1/4	●	●	●	●	●	—	—	—
03	3/8	—	—	—	●	●	●	—	—
04	1/2	—	—	—	—	—	●	●	●

JIS Symbol



Option

Symbol	Contents	Size							
		1	3	5	10	20	60	75	100
Nil	None (Standard)	●	●	●	●	●	●	●	●
P	With fitting for purge air discharge	●	●	●	●	●	●	●	●
R	Flow direction (Right → Left)	—	●	●	●	●	●	●	●
S	With dew point indicator	—	●	●	Standard equipment				

Note) In the case of two or more options, indicate them alphabetically.

Bracket Assembly (Accessory) Part No.

Part no.	Applicable model
BM59	IDG3, 5
BM61	IDG10
BM63	IDG20
BM65	IDG60, 75, 100

∗ With cap bolts (2 pcs.) and spring washers (2 pcs.)

Standard Specifications/Single Unit Type (Standard dew point –20°C, –15°C)

Standard dew point···–20°C

	Model	IDG1	IDG3	IDG5	IDG10	IDG20	IDG30A	IDG50A	IDG60	IDG75	IDG100
Range of operating conditions	Fluid	Compressed air									
	Inlet air pressure (MPa)	0.3 to 0.85					0.3 to 1.0				
	Inlet air temperature (°C) Note 1)	–5 to 55					–5 to 50				
	Ambient temperature (°C) Note 1)	–5 to 55					–5 to 50				
Standard performance	Outlet air atmospheric pressure dew point (°C)	–20									
Standard performance conditions	Inlet air flow rate (L/min [ANR]) Note 2)	12.5	31	62	125	250	360	586	725	900	1190
	Outlet air flow rate (L/min [ANR])	10	25	50	100	200	300	500	600	750	1000
	Purge air flow rate (L/min [ANR]) Note 3)	2.5	6	12	25	50	60	86	125	150	190
	Inlet air pressure (MPa)	0.7									
	Inlet air temperature (°C)	25									
	Inlet air saturation temperature (°C)	25									
	Ambient temperature (°C)	25									
Dew point indicator purge air flow rate		—		1 L/min [ANR] {In case of Inlet air pressure 0.7 MPa}							
Port size (Nominal size B)		1/4	1/8, 1/4	1/4, 3/8					3/8, 1/2	1/2	
Weight (kg) (With bracket)		0.11	0.25 (0.31)	0.43 (0.51)	0.66 (0.76)	0.78 (0.91)	0.81 (0.94)		1.50 (1.65)	1.50 (1.65)	1.55 (1.70)

Note 1) When using the product in the temperature range between –5°C and 5°C, prevent water droplets from entering the inlet port. (No freezing of the fluid)
Note 2) "ANR" indicates the flow rate converted to the value at 20°C, under the atmospheric pressure and the state of relative humidity 65%.
Note 3) Includes 1 L/min [ANR] of purge air flow (at 0.7 MPa inlet air pressure) for the dew point indicator (except IDG1, 3, 5).

Standard dew point···–15°C/Type H

	Model	IDG3H	IDG5H	IDG10H	IDG20H	IDG30HA	IDG50HA	IDG60H	IDG75H	IDG100H
Range of operating conditions	Fluid	Compressed air								
	Inlet air pressure (MPa)	0.3 to 0.85				0.3 to 1.0				
	Inlet air temperature (°C) Note 1)	–5 to 55				–5 to 50				
	Ambient temperature (°C) Note 1)	–5 to 55				–5 to 50				
Standard performance	Outlet air atmospheric pressure dew point (°C)	–15								
Standard performance conditions	Inlet air flow rate (L/min [ANR]) Note 2)	28	56	111	222	329	550	665	830	1110
	Outlet air flow rate (L/min [ANR])	25	50	100	200	300	500	600	750	1000
	Purge air flow rate (L/min [ANR]) Note 3)	3	6	11	22	29	50	65	80	110
	Inlet air pressure (MPa)	0.7								
	Inlet air temperature (°C)	25								
	Inlet air saturation temperature (°C)	25								
	Ambient temperature (°C)	25								
Dew point indicator purge air flow rate		—		1 L/min [ANR] {In case of Inlet air pressure 0.7 MPa}						
Port size (Nominal size B)		1/8, 1/4		1/4, 3/8				3/8, 1/2	1/2	
Weight (kg) (With bracket)		0.25 (0.31)		0.43 (0.51)	0.66 (0.76)	0.78 (0.91)	0.81 (0.94)	1.50 (1.65)	1.50 (1.65)	1.55 (1.70)

Note 1) When using the product in the temperature range between –5°C and 5°C, prevent water droplets from entering the inlet port. (No freezing of the fluid)
Note 2) "ANR" indicates the flow rate converted to the value at 20°C, under the atmospheric pressure and the state of relative humidity 65%.
Note 3) Includes 1 L/min [ANR] of purge air flow (at 0.7 MPa inlet air pressure) for the dew point indicator (except IDG3H, 5H).

Standard Specifications/Single Unit Type (Standard dew point –40°C, –60°C)

Standard dew point···–40°C/Type L

Model		IDG30LA	IDG50LA	IDG60LA	IDG75LA	IDG100LA
Range of operating conditions	**Fluid**	Compressed air				
	Inlet air pressure (MPa)	0.3 to 1.0				
	Inlet air temperature (°C) Note 1)	–5 to 50				
	Ambient temperature (°C) Note 1)	–5 to 50				
Standard performance	**Outlet air atmospheric pressure dew point (°C)**	–40				
Standard performance conditions	**Inlet air flow rate (L/min [ANR])** Note 2)	93	135	224	308	400
	Outlet air flow rate (L/min [ANR])	75	110	170	240	300
	Purge air flow rate (L/min [ANR]) Note 3)	18	25	54	68	100
	Inlet air pressure (MPa)	0.7				
	Inlet air temperature (°C)	25				
	Inlet air saturation temperature (°C)	25				
	Ambient temperature (°C)	25				
Dew point indicator purge air flow rate		1 L/min [ANR] {In case of Inlet air pressure 0.7 MPa}				
Port size (Nominal size B)		1/4, 3/8		3/8, 1/2		
Weight (kg) (With bracket)		0.78 (0.91)	0.81 (0.94)	1.56 (1.71)	1.69 (1.84)	1.82 (1.97)

Note 1) When using the product in the temperature range between –5°C and 5°C, prevent water droplets from entering the inlet port. (No freezing of the fluid)
Note 2) "ANR" indicates the flow rate converted to the value at 20°C, under the atmospheric pressure and the state of relative humidity 65%.
Note 3) Includes 1 L/min [ANR] of purge air flow (at 0.7 MPa inlet air pressure) for the dew point indicator.

Standard dew point···–60°C/Type S

Model		IDG60SA	IDG75SA	IDG100SA
Range of operating conditions	**Fluid**	Compressed air		
	Inlet air pressure (MPa)	0.3 to 1.0		
	Inlet air temperature (°C) Note 1)	–5 to 50		
	Ambient temperature (°C) Note 1)	–5 to 50		
Standard performance	**Outlet air atmospheric pressure dew point (°C)**	–60		
Standard performance conditions	**Inlet air flow rate (L/min [ANR])** Note 2)	75	140	230
	Outlet air flow rate (L/min [ANR])	50	100	150
	Purge air flow rate (L/min [ANR]) Note 3)	25	40	80
	Inlet air pressure (MPa)	0.7		
	Inlet air temperature (°C)	25		
	Inlet air saturation temperature (°C)	25		
	Ambient temperature (°C)	25		
Dew point indicator purge air flow rate		1 L/min [ANR] {In case of Inlet air pressure 0.7 MPa}		
Port size (Nominal size B)		3/8, 1/2		
Weight (kg) (With bracket)		1.56 (1.71)	1.69 (1.84)	1.82 (1.97)

Note 1) When using the product in the temperature range between –5°C and 5°C, prevent water droplets from entering the inlet port. (No freezing of the fluid)
Note 2) "ANR" indicates the flow rate converted to the value at 20°C, under the atmospheric pressure and the state of relative humidity 65%.
Note 3) Includes 1 L/min [ANR] of purge air flow (at 0.7 MPa inlet air pressure) for the dew point indicator.

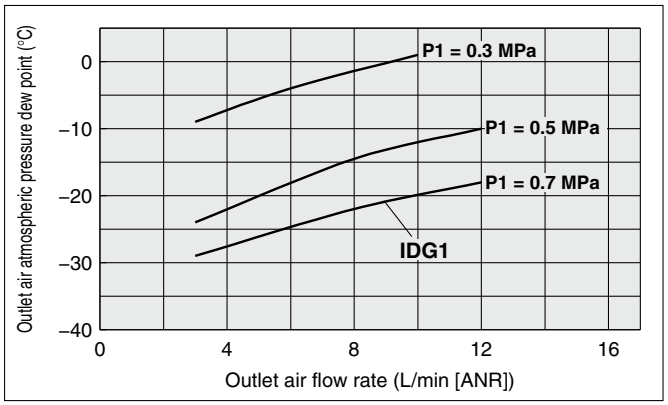
Performance Chart

Conditions: Inlet air temperature 25°C (saturated air), Ambient temperature 25°C, P1: Inlet air pressure, Tube for purge air discharge (Option: P): None

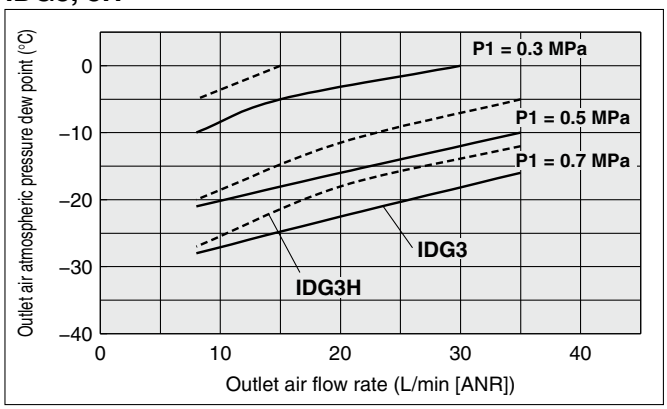
Note: Correcting outlet air flow rate is required depending on inlet air temperature. Refer to page 31 or after for details. For model with fitting for purge air discharge (Option: P), the outlet air atmospheric pressure dew point may become higher depending on the tube length for purge air discharge. For other models, if the tube length is 5 m or less, a rise of the outlet air at the atmospheric pressure dew point will be 1°C or less.

Standard dew point···–20°C [Symbol: Nil], –15°C [Symbol: H]

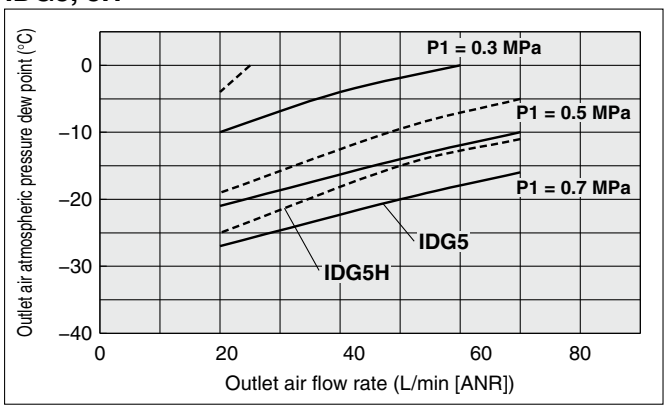
IDG1



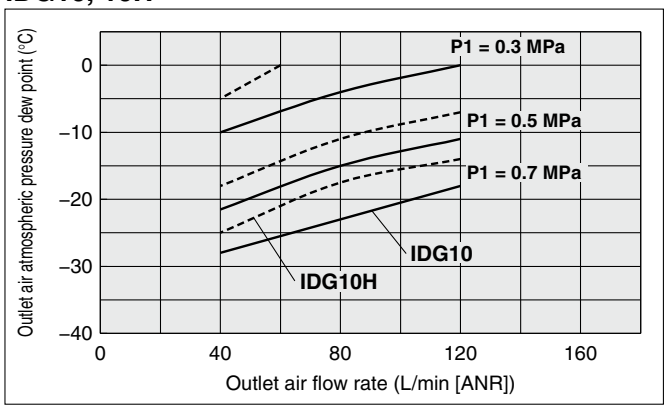
IDG3, 3H



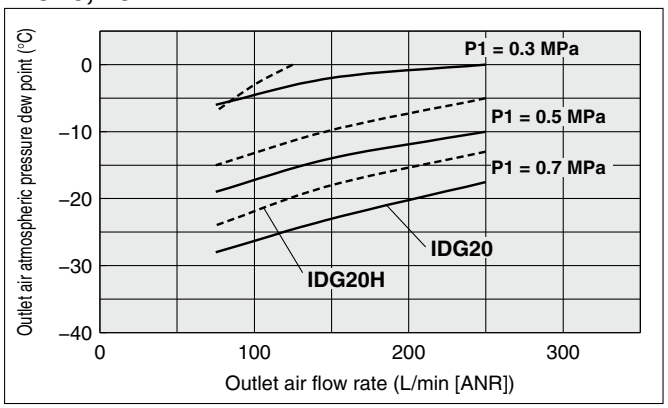
IDG5, 5H



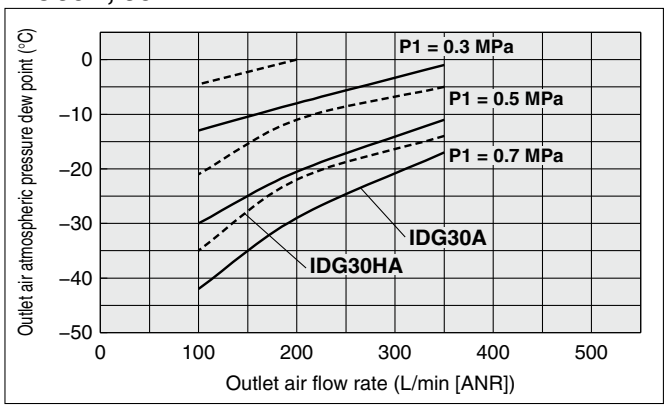
IDG10, 10H



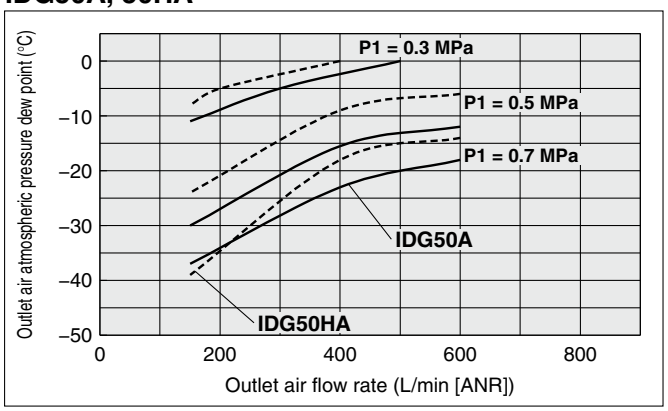
IDG20, 20H



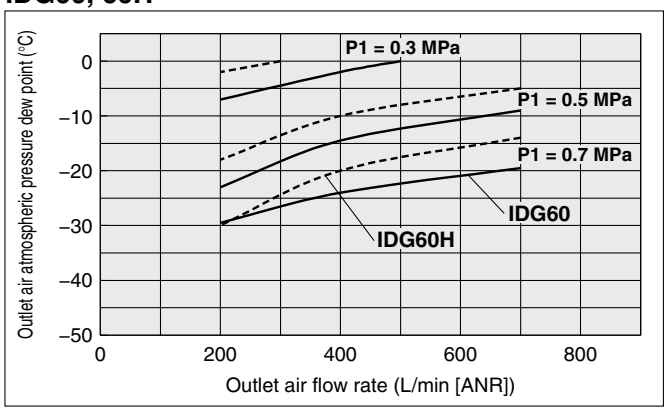
IDG30A, 30HA



IDG50A, 50HA

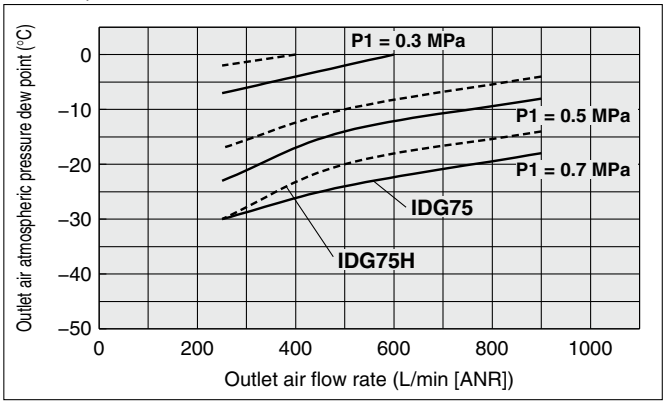


IDG60, 60H

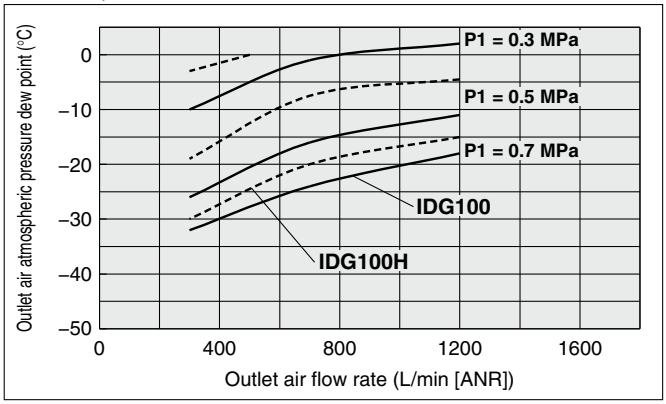


Performance Chart

IDG75, 75H

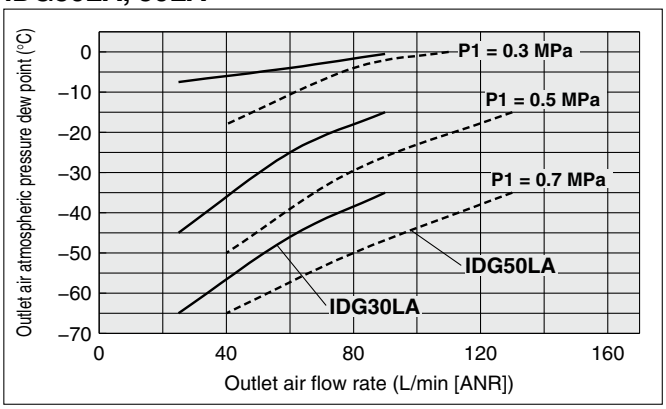


IDG100, 100H

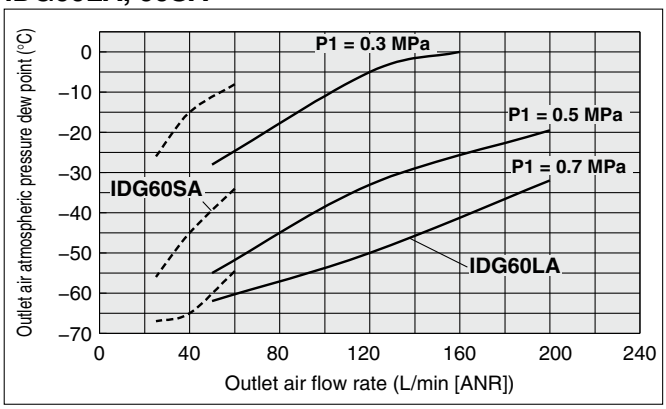


Standard dew point···–40°C [Symbol: L], –60°C [Symbol: S]

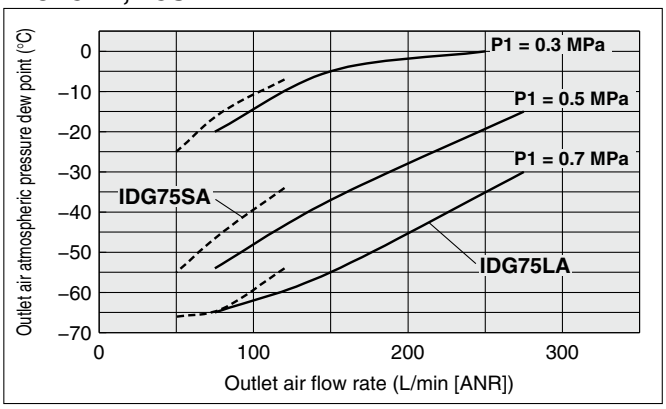
IDG30LA, 50LA



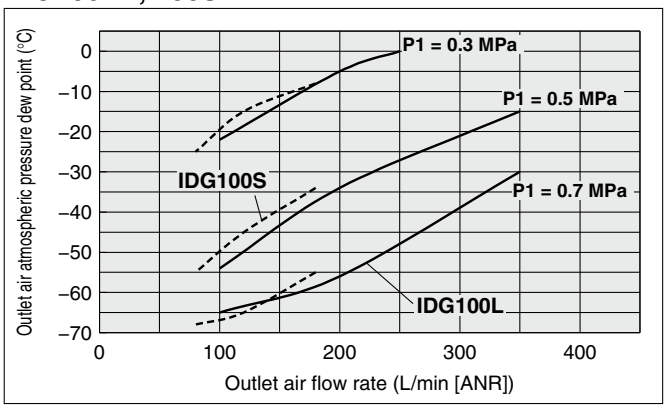
IDG60LA, 60SA



IDG75LA, 75SA



IDG100LA, 100SA

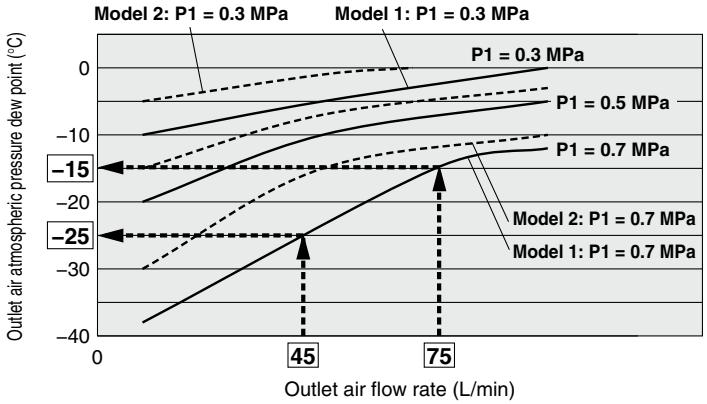


How to read the Performance Chart and to select the model

Solid lines and dashed lines beginning at the top indicate the performance at 25°C of inlet air temperature and P1 = 0.3 MPa, 0.5 MPa, and 0.7 MPa of inlet air pressure, respectively.

· In the case of 25°C of inlet air temperature and 45 [L/min] of outlet air flow rate
Model 1: The atmosphere pressure dew point at P1 = 0.7 MPa: –25°C.

· In the case of 40°C of inlet air temperature and 45 [L/min] of outlet air flow rate
Example) Outlet air flow rate correction factor: 0.6
(The correction factor differs depending on the model. Refer to page 31 and after for details.)
Corrected outlet air flow rate: 45 ÷ 0.6 = 75 [L/min]
Model 1: Performing corresponding to –15°C of outlet atmosphere pressure dew point at P1 = 0.7 MPa.

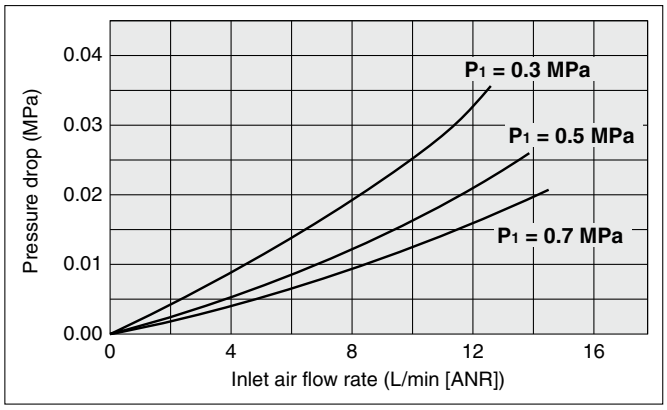


Single Unit Type/Flow-rate Characteristics

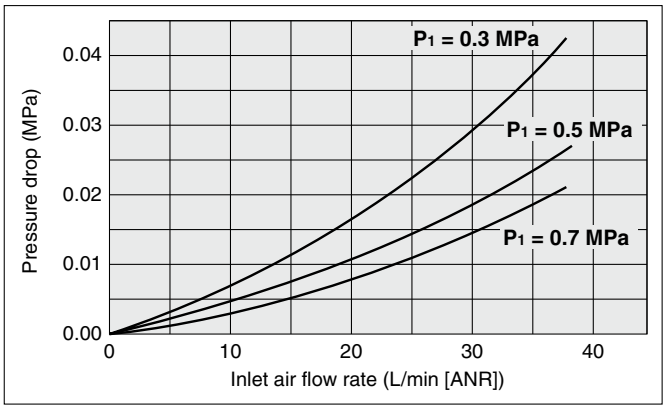
Conditions: Inlet air temperature 25°C, P1: Inlet air pressure

Standard dew point···–20°C [Symbol: Nil], –15°C [Symbol: H]

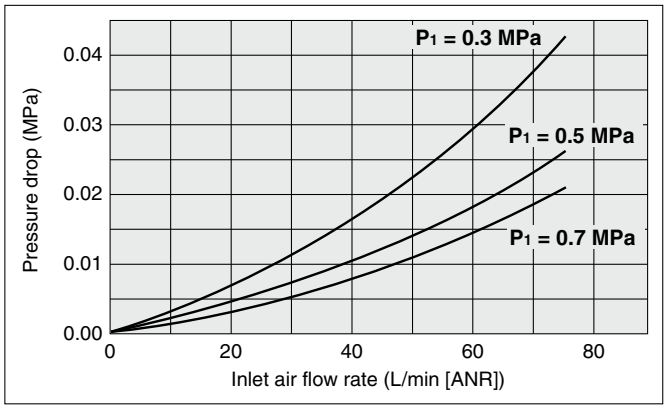
IDG1



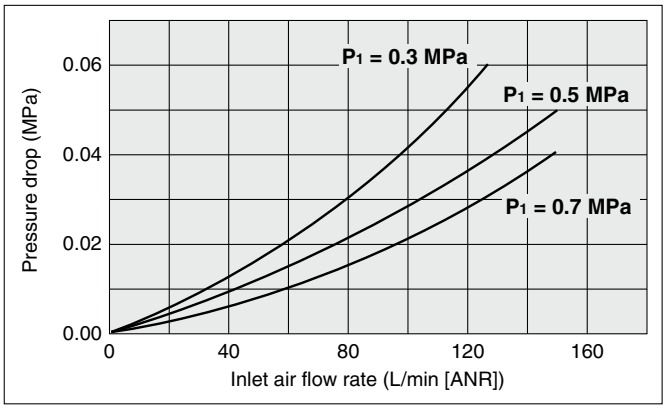
IDG3, 3H



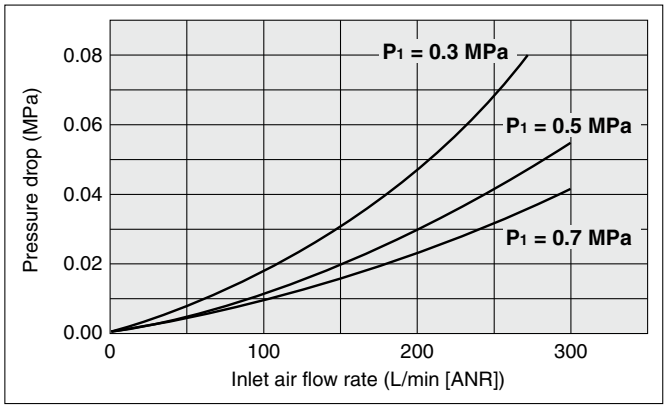
IDG5, 5H



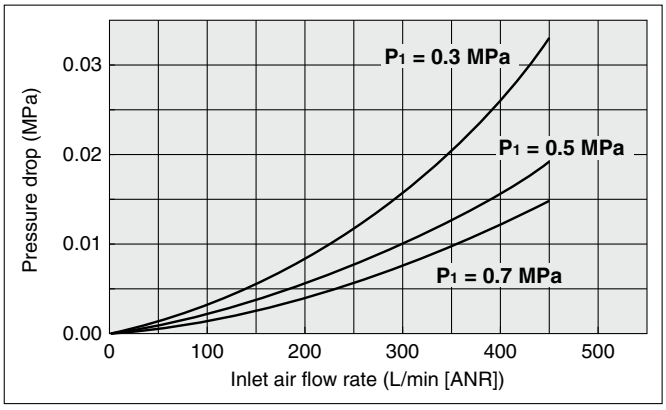
IDG10, 10H



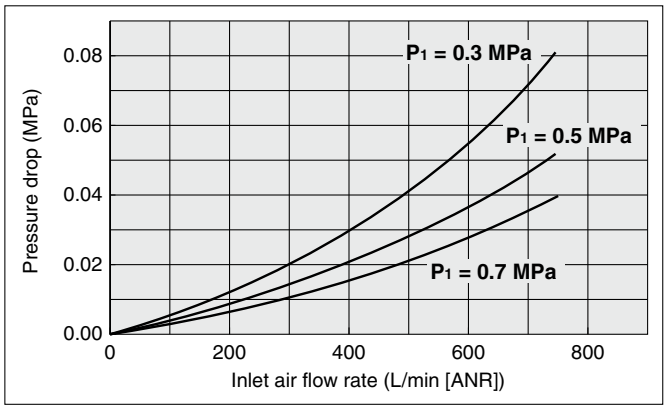
IDG20, 20H



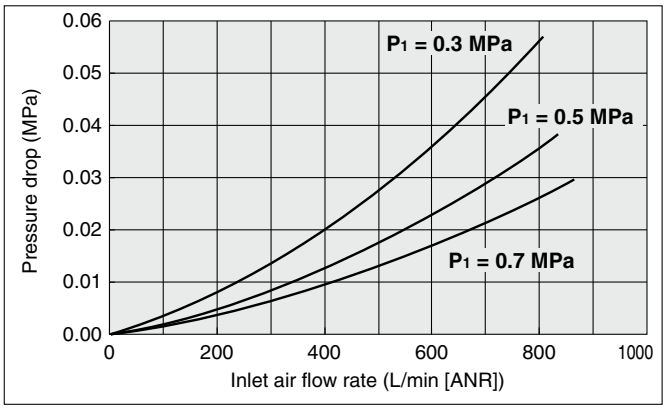
IDG30A, 30HA



IDG50A, 50HA



IDG60A, 60HA

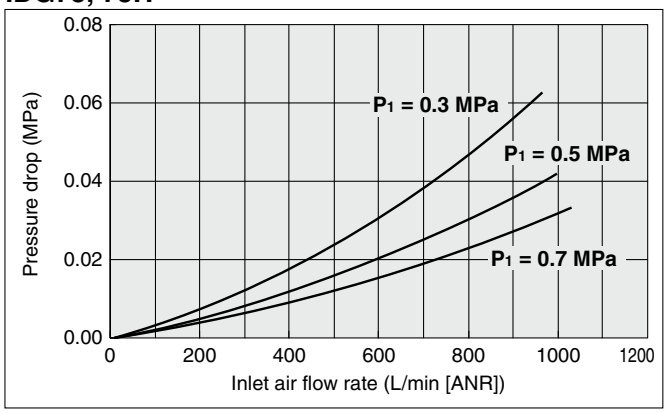


Single Unit Type/Flow-rate Characteristics

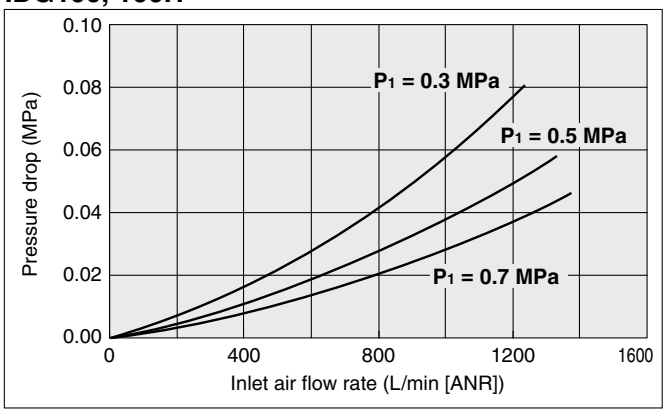
Conditions: Inlet air temperature 25°C, P1: Inlet air pressure

Standard dew point···–20°C [Symbol: Nil], –15°C [Symbol: H]

IDG75, 75H

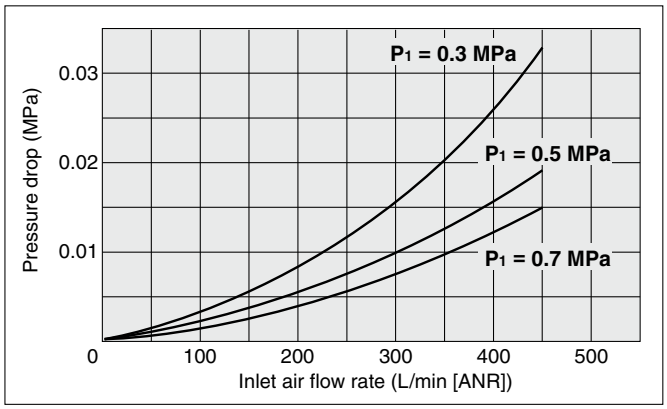


IDG100, 100H

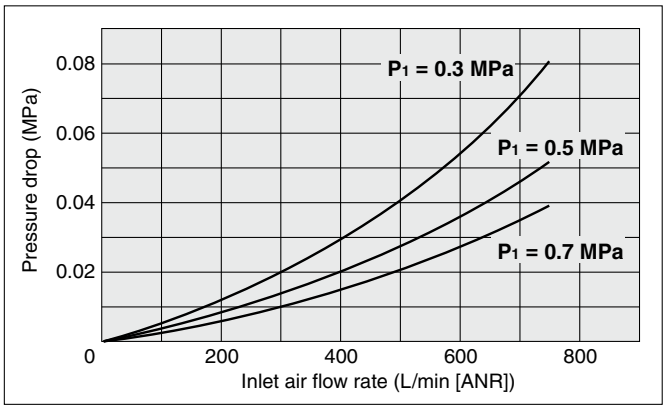


Standard dew point···–40°C [Symbol: L], –60°C [Symbol: S]

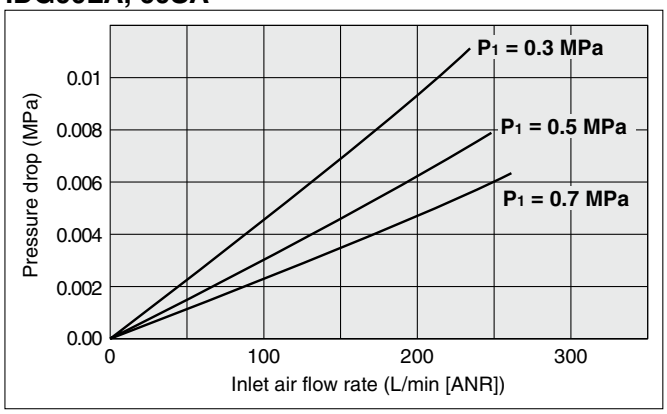
IDG30LA



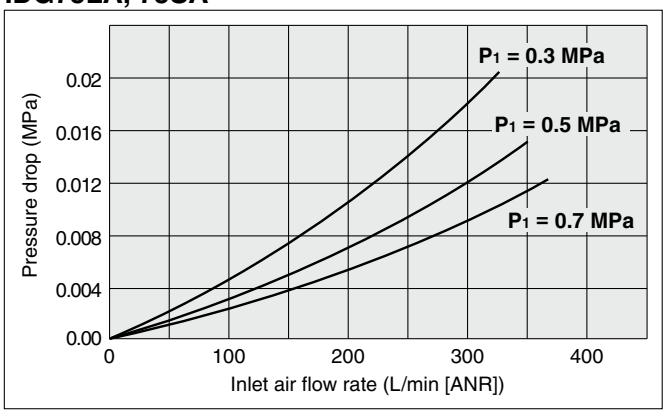
IDG50LA



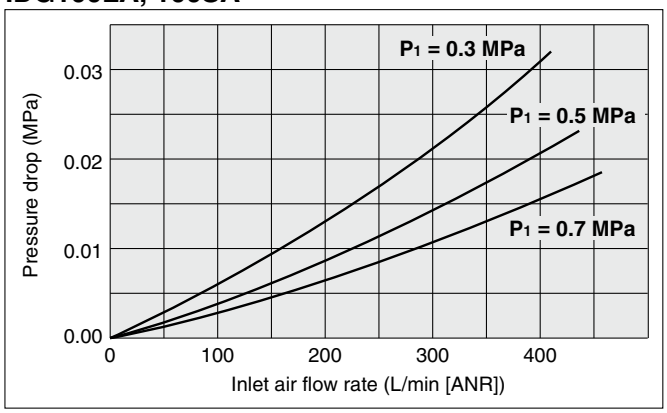
IDG60LA, 60SA



IDG75LA, 75SA



IDG100LA, 100SA



With fitting for purge air discharge (Option: P)

As the tube length for purge air discharge becomes longer, the outlet air atmospheric pressure dew point becomes higher. Refer to the table below.

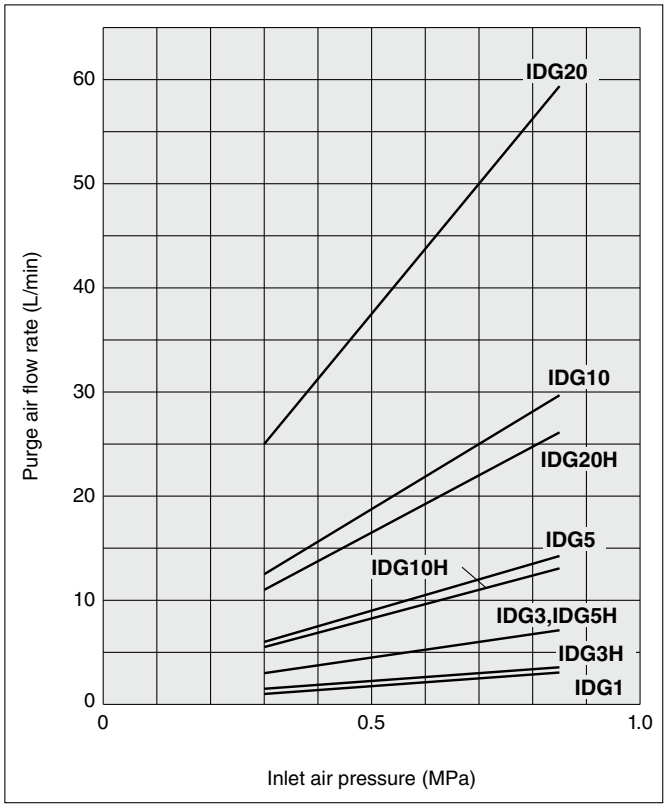
Tube length	IDG30A	IDG30LA
0 m	–20	–40
1 m	–19	–39
3 m	–17	–38
5 m	–16	

■Conditions

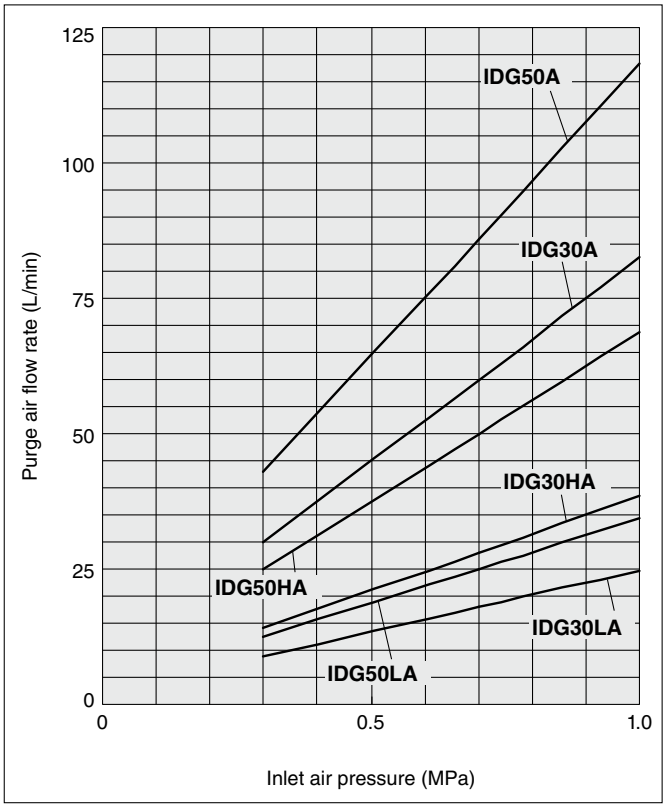
Inlet air temperature : 25°C (Saturated)
Ambient temperature : 25°C
Inlet air pressure : 0.7 MPa
Outlet air flow rate : Flow gained under conditions of the standard performance. (Refer to pages 3 and 4.)
Tube size : O.D. ø12 x I.D. ø9

Purge Air Flow-rate Characteristics

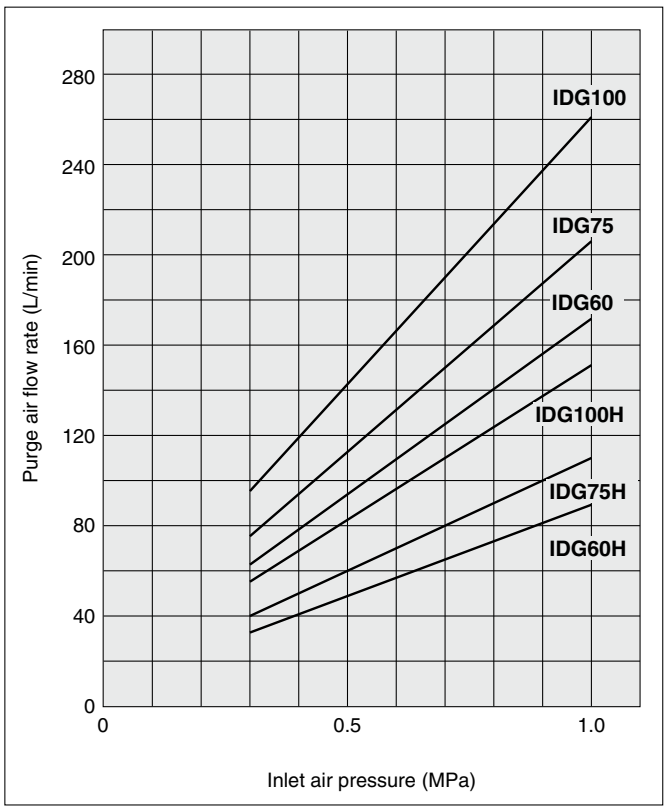
IDG1, 3, 5, 10, 20 (Standard dew point –20°C)
IDG3H, 5H, 10H, 20H (Standard dew point –15°C)



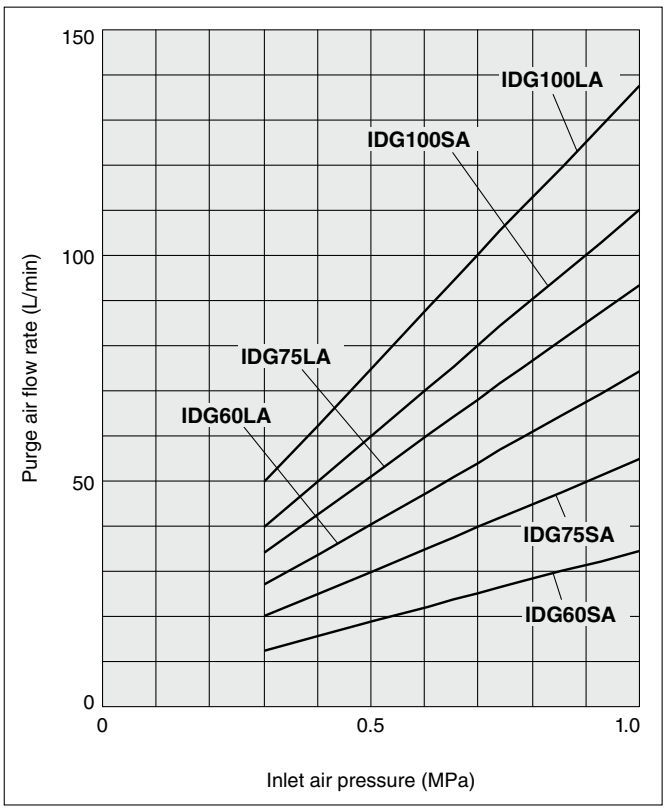
IDG30A, 50A (Standard dew point –20°C)
IDG30HA, 50HA (Standard dew point –15°C)
IDG30LA, 50LA (Standard dew point –40°C)



IDG60, 75, 100 (Standard dew point –20°C)
IDG60H, 75H, 100H (Standard dew point –15°C)

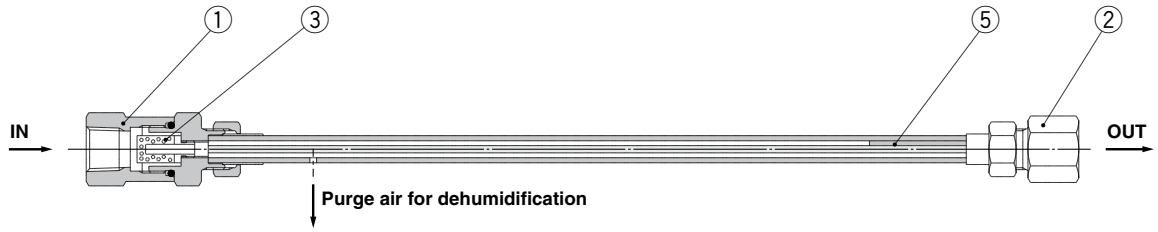


IDG60LA, 75LA, 100LA (Standard dew point –40°C)
IDG60SA, 75SA, 100SA (Standard dew point –60°C)

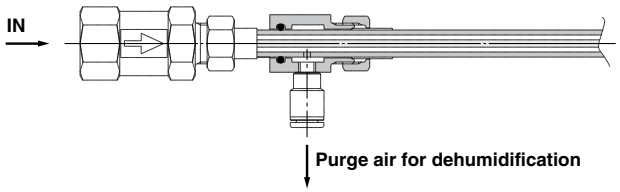


Dimensions

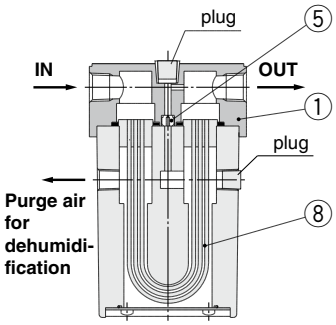
IDG1



Option
With fitting for purge air discharge (Option: P)

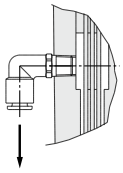


IDG3, 5
IDG3H, 5H

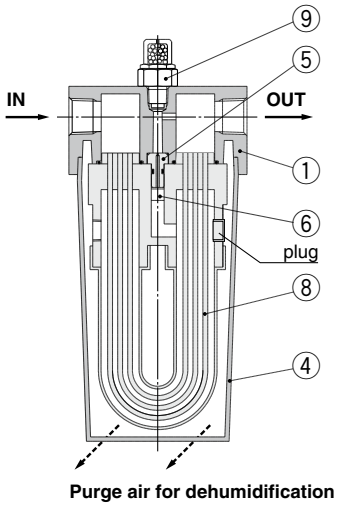


Option

With fitting for purge air discharge (Option: P)

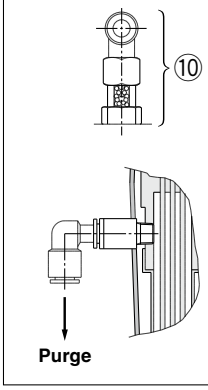


IDG10, 20
IDG10H, 20H



Option

With fitting for purge air discharge (Option: P)



Component Parts

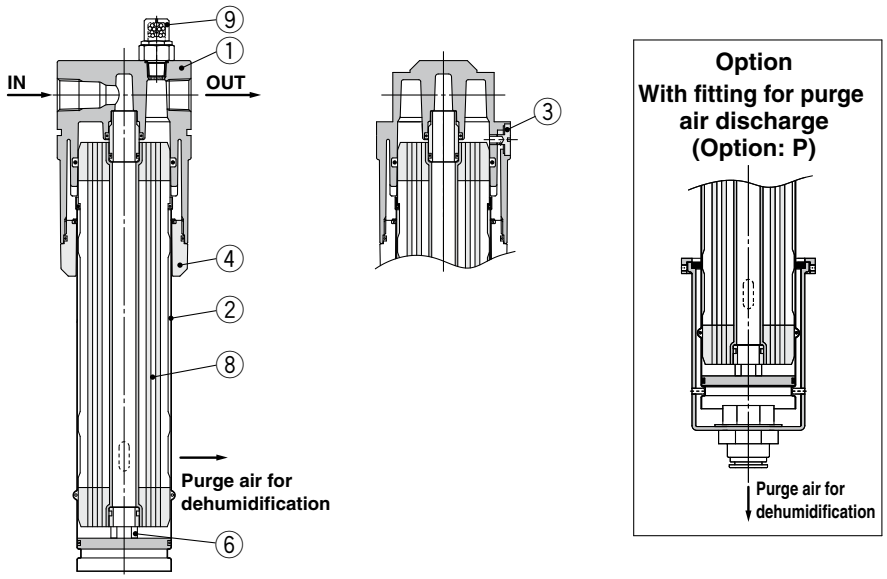
No.	Description	Material					Note
		IDG1	IDG3, 3H	IDG5, 5H	IDG10, 10H	IDG20, 20H	
1	**Body**	Brass	Aluminum alloy				Platinum silver coated (IDG1 is electroless nickel plated.)
2	**Female connector**	Brass	—				Electroless nickel plated
3	**Strainer**	Brass	—				
4	**Case**	—	—		Resin		
5	**Orifice**	Resin	Stainless steel				
6	**Silencer**	—	—		Brass		

Replacement Parts

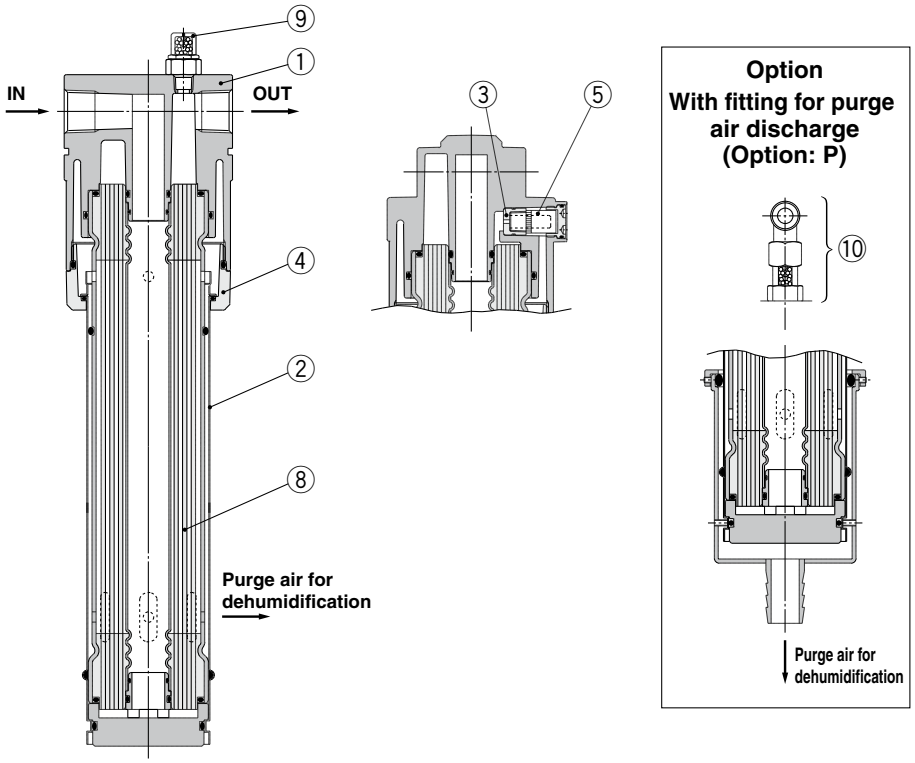
No.	Description	Part no.								
		IDG1	IDG3	IDG3H	IDG5	IDG5H	IDG10	IDG10H	IDG20	IDG20H
8	**Membrane module kit**	—	IDG-EL3	IDG-EL3H	IDG-EL5	IDG-EL5H	IDG-EL10	IDG-EL10H	IDG-EL20	IDG-EL20H
			With Orifice (1 pc.), O-ring (3 pcs.), Gasket (1 pc.)				With Orifice (1 pc.), Silencer (1 pc.), O-ring (4 pcs.)			
9	**Dew point indicator kit**	—	IDG-DP01 (Option: S)				IDG-DP01			
			With O-ring (1 pc.)							
10		—	IDG-DP01-X001 (Option: PS)				IDG-DP01-X001 (Option: P)			
			With O-ring (1 pc.)							

Dimensions

IDG30□A
IDG50□A



IDG60□, 75□, 100□
IDG60□A, 75□A, 100□A



Component Parts

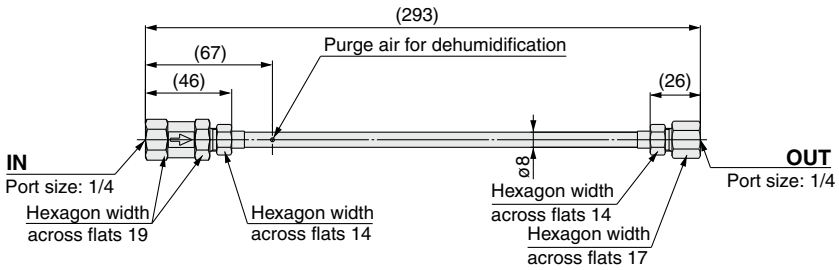
No.	Description	Material								Note
		IDG30□A	IDG50□A	IDG60, 60H*	IDG60LA, 60SA	IDG75, 75H*	IDG75LA, 75SA	IDG100, 100H*	IDG100LA, 100SA	
1	Body	Aluminum alloy/White								*Platinum silver coated
2	Case	Stainless steel								
3	Orifice	Stainless steel								
4	Holder	Aluminum alloy		Aluminum alloy						
5	Silencer	—		Resin + Brass	Resin	Resin + Brass	Resin	Resin + Brass	Resin	
6	Adapter	Resin		—						

Replacement Parts

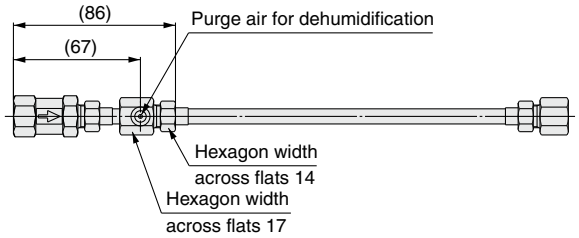
No.	Description	Part no.							
		IDG30□A	IDG50□A	IDG60, 60H	IDG60LA, 60SA	IDG75, 75H	IDG75LA, 75SA	IDG100, 100H	IDG100LA, 100SA
8	Membrane module kit	IDG-EL30A	IDG-EL50A	IDG-EL60	IDG-EL60LA	IDG-EL75	IDG-EL75LA	IDG-EL100	IDG-EL100LA
		With Nozzle (1 pc.), Adapter (1 pc.), O-ring (1 pc.)		With O-ring (1 pc.)					
9	Dew point indicator kit	IDG-DP01							
10		IDG-DP01-X001 (Option: P)							

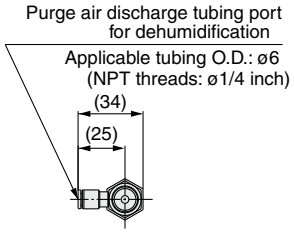
Dimensions/Single Unit Type

IDG1

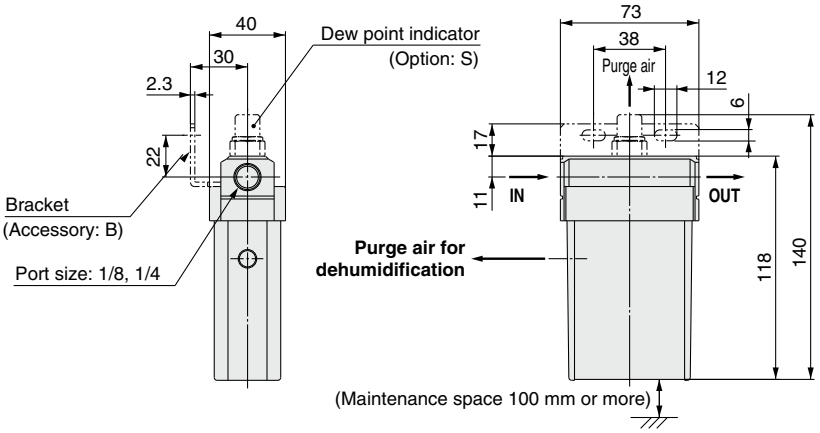


With fitting for purge air discharge (Option: P)

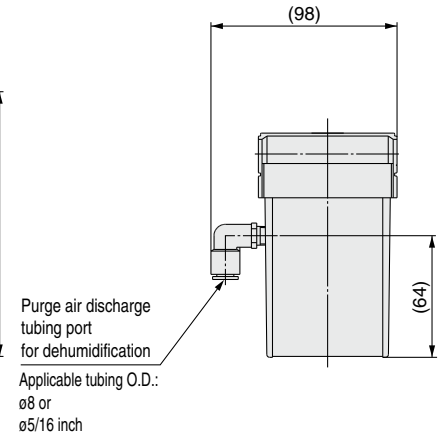




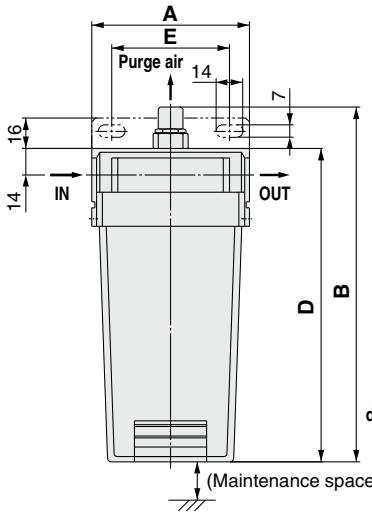
IDG3, 5
IDG3H, 5H

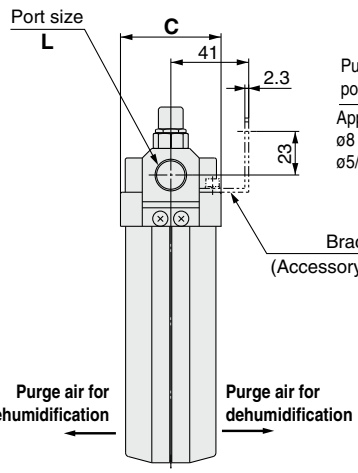


With fitting for purge air discharge (Option: P)

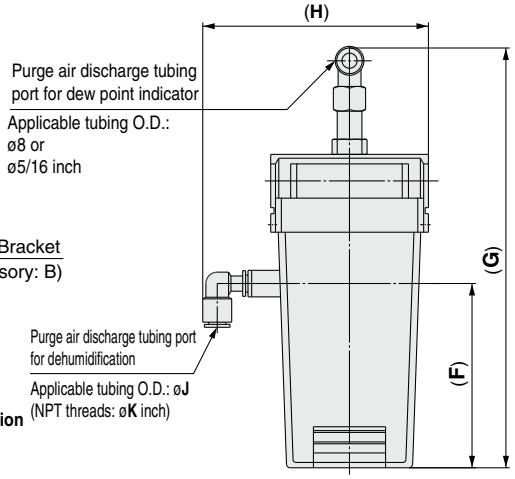


IDG10, 20
IDG10H, 20H





With fitting for purge air discharge (Option: P)



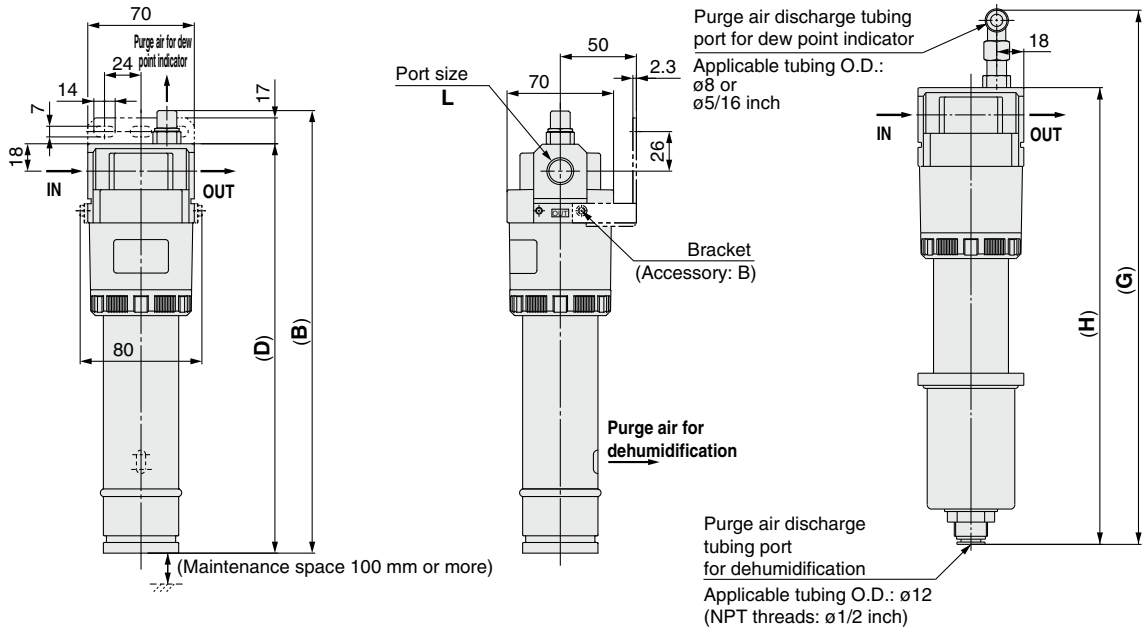
Model	Port size L	A	B	C	D	E	Option: P				
							F	G	H	J	K
IDG10, 10H	1/4, 3/8	83	187	53	165	62	97	224	119 [126]	8	5/16
IDG20, 20H		113	212	54	190	82	114	249	147 [154]	10	3/8

Values inside [ ] are for NPT threads.

Dimensions/Single Unit Type

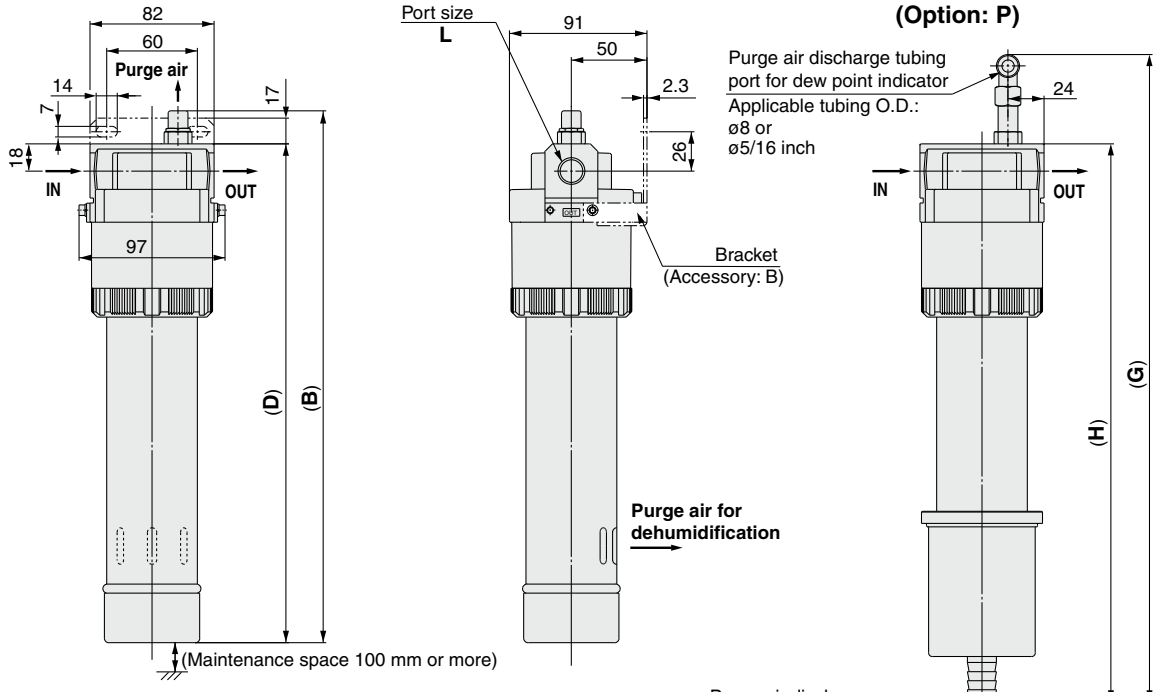
IDG30□A
IDG50□A

With fitting for purge air discharge (Option: P)



IDG60□, 75□, 100□
IDG60□A, 75□A, 100□A

With fitting for purge air discharge (Option: P)



Model	Port size L	B	D	Option: P G	Option: P H
IDG30□A	1/4, 3/8	291	269	361	302
IDG50□A		330	308	400	341
IDG60□	3/8, 1/2	352	330	428	369
IDG75□, 100□	1/2				
IDG60□A	3/8, 1/2	348	326	426	367
IDG75□A		418	396	495	436
IDG100□A		483	461	560	501

RoHS

Membrane Air Dryer/Unit Type

Series IDG□A

Type M, Type V

How to Order

Reduced purge IDG□A Series

IDG 30 □ A M 3 – □ 03 □ – □ – □

Size

30
50
60
75
100

Made to Order
Refer to page 33 to 44 for details.

Option

Symbol	Contents	Note
Nil	None (Standard)	—
P	With fitting for purge air discharge	• Drain discharge: Combination with standard type (Nil) is not available. • Combination with Type V is not available.Note)
R	Flow direction (Right → Left)	—

∗ In the case of two or more options, indicate them alphabetically.
Note) Type V is not applicable because it is equipped with a relief type regulator.

Standard dew point temperature/Outlet air flow rate

Symbol	Standard dew point (°C)	Flow rate by size Outlet air flow rate (L/min [ANR]) 30	50	60	75	100
Nil	–20	300	500	Select from Series IDG		
H	–15	300	500			
L	–40	75	110	170	240	300
S	–60	—	—	50	100	150

Components

Symbol	Contents	Size	Mist separator	Micro mist separator	Membrane air dryer	Regulator
M	With separator	30	●	●	●	—
		50	●	●	●	—
		60	●	●	●	—
		75	●	●	●	—
		100	●	●	●	—
V	With separator and regulator	30	●	●	●	●
		50	●	●	●	●
		60	●	●	●	●
		75	●	●	●	●
		100	●	●	●	●

Drain discharge method

Symbol	Drain discharge method	Note
Nil	Manual valve	Combination with Option P is not available.
C	N.C. auto-drain	Auto-drains listed on page 17 are attached.
D	N.O. auto-drain	
J	Drain guide (Port size 1/4 without valve)	—

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

Port size

Symbol	Port size	Size 30	50	60	75	100
02	1/4	●	●	—	—	—
03	3/8	●	●	●	●	●
04	1/2	—	—	●	●	●

Equipment connection

Symbol	Contents	30 Nil	30 H	30 L	50 Nil	50 H	50 L	60 L	60 S	75 L	75 S	100 L	100 S
		M, V											
3	Modular connection	●						●		●		●	

Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

RoHS

Membrane Air Dryer/Unit Type
Series IDG

How to Order

IDG [10] [ ] [M] [3] – [ ] [02] [ ] – [ ] – [ ]

Size

3
5
10
20
60
75
100

Made to Order
Refer to page 33 to 44 for details.

Option*

Symbol	Contents	Note
Nil	None (Standard)	—
P	With fitting for purge air discharge Note 2)	• Drain discharge: Combination with standard type (Nil) is not available. • Combination with Type V is not available. Note 1)
R	Flow direction (Right → Left)	—
S	With dew point indicator Note 3)	—

* In the case of two or more options, indicate them alphabetically.
Note 1) Type V is not applicable because it is equipped with a relief type regulator. (Symbol P is used when it is undesirable for the air to be discharged into the main body of IDG. Therefore, it is not possible to use it in combination with a separator with manual valve, which discharges air around it, or Type V with a relief type regulator.)
Note 2) They are not applicable in case the thread type is N or F if the thread size is 3, 5, 10, and 20. (Because barrel nipples are used for equipment connections.)
Note 3) Select the option if the size is 3 or 5. The option is the standard equipment for other sizes.

Standard dew point temperature/Outlet air flow rate

Symbol	Standard dew point (°C)	Flow rate by size Outlet air flow rate (L/min [ANR])						
		3	5	10	20	60	75	100
Nil	–20	25	50	100	200	600	750	1000
H	–15	25	50	100	200	600	750	1000
L	–40	—	—	—	—	Select from Series IDG□A		
S	–60	—	—	—	—			

Components

Symbol	Contents	Size	Mist separator	Micro mist separator	Micro mist separator with pre-filter	Membrane air dryer	Regulator
M	With separator	3	●	●	—	●	—
		5	●	●	—	●	—
		10	●	●	—	●	—
		20	●	●	—	●	—
		60	—	—	●	●	—
		75	—	—	●	●	—
		100	—	—	●	●	—
V	With separator and regulator	3	●	●	—	●	●
		5	●	●	—	●	●
		10	●	●	—	●	●
		20	●	●	—	●	●
		60	—	—	●	●	●
		75	—	—	●	●	●
		100	—	—	●	●	●

Drain discharge method*
(Mist separator, Micro mist separator, Micro mist separator with pre-filter)

Symbol	Drain discharge method	Size			Note
		3 5	10 20	60 75 100	
Nil	Manual valve	●	●	●	Combination with Option P is not available.
C	N.C. auto-drain	●	●	—	Auto-drains listed on page 17 are attached.
D	N.O. auto-drain	—	—	●	
J	Drain guide (Port size 1/4 without valve)	—	●	●	—

* For model selection of an auto-drain, refer to the Selection Precautions on page 45.

Port size

Symbol	Port size	Size						
		3	5	10	20	60	75	100
01	1/8	●	●	—	—	—	—	—
02	1/4	●	●	●	●	—	—	—
03	3/8	—	—	●	●	●	—	—
04	1/2	—	—	—	—	●	●	●

Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

Equipment connection: Models are applicable for either a modular connection or a nipple connection.

Symbol	Contents	IDG3	IDG5	IDG10	IDG20	IDG60		IDG75		IDG100	
		Nil H				Nil	H	Nil	H	Nil	H
		M, V									
3	Modular connection Note 1)	●				—		—		—	
2	Nipple connection Note 2)	—				●		●		●	

Note 1) For some models of option P, some parts are connected with nipples (Refer to pages 23 and 24).
Note 2) For some models, some parts are connected with modules (Refer to page 29).

Auto-drain, Bowl Assembly, Pressure Gauge Part No.

Description		IDG3M3 IDG3V3	IDG5M3 IDG5V3	IDG10M3 IDG10V3	IDG20M3 IDG20V3	IDG30AM3 IDG30AV3	IDG30HAM3 IDG30HAV3	IDG50AM3 IDG50AV3	IDG50HAM3 IDG50HAV3
Float type auto-drain	N.C.	AD27-C		AD37		AD47			
	N.O.	—	—	—	—	AD48			
Bowl assembly (N.O)		—	—	—	—	—	—	—	—
Pressure gauge (Type V only)		GC3-10AS							

Description		IDG60M2 IDG60V2	IDG60HM2 IDG60HV2	IDG75M2 IDG75V2	IDG75HM2 IDG75HV2	IDG100M2 IDG100V2
Float type auto-drain	N.C.	—	—	—	—	—
	N.O.	—	—	—	—	—
Bowl assembly (N.O)		AMH-CA350C-D		AMH-CA450C-D		
Pressure gauge (Type V only)		GC3-10AS				

Description		IDG30LAM3 IDG30LAV3	IDG50LAM3 IDG50LAV3	IDG60LAM3 IDG60LAV3	IDG60SAM3 IDG60SAV3	IDG75LAM2 IDG75LAV2	IDG75SAM2 IDG75SAV2	IDG100LAM3 IDG100LAV3	IDG100SAM3 IDG100SAV3
Float type auto-drain	N.C.	AD47							
	N.O.	AD48							
Pressure gauge (Type V only)		GC3-10AS							

Replacement Parts (Element for mist separator, micro mist separator, micro mist separator with pre-filter)

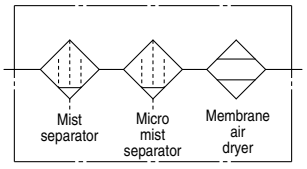
Description	AFM40	AFD40	AMH350	AMH450
Element assembly	AFM40P-060AS	AFD40P-060AS	AMH-EL350	AMH-EL450

Type M

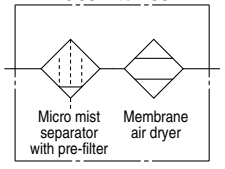
Type V

JIS Symbol

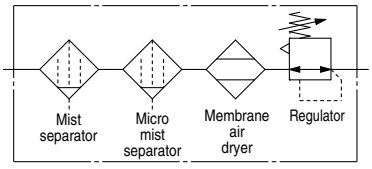
(Type M)



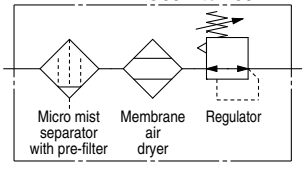
IDG60 to 100M2
IDG60H to 100HM2



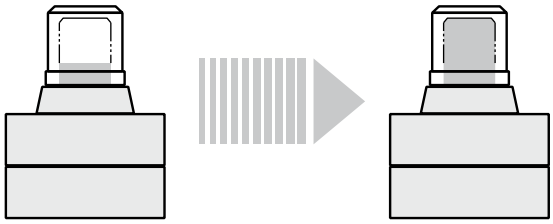
(Type V)



IDG60 to 100V2
IDG60H to 100HV2



Clogging Indication



When the differential air is 0.05 MPa or less
(The tip of the indicator is just visible.)

When the differential air is 0.1 MPa or more
(The indicator is completely up to the top.)

Replace the element when the element service indicator's red indication reaches completely to the top.
The top of the indication window shows differential pressure of approximately 0.1 MPa. Replace the element after two years of use, even if the element service indicator's red indication does not reach the top.

The element service indicator is shipped mounted to the micro mist separator with pre-filter, and cannot be retrofitted or used individually.

Standard Specifications/Unit [Type M, Type V] (Standard dew point: –20°C, –15°C)

Model		Standard dew point: –20°C								
		IDG3M3	IDG5M3	IDG10M3	IDG20M3	IDG30AM3	IDG50AM3	IDG60M2	IDG75M2	IDG100M2
		IDG3V3	IDG5V3	IDG10V3	IDG20V3	IDG30AV3	IDG50AV3	IDG60V2	IDG75V2	IDG100V2
Component equipment	Mist separator	AFM20		AFM30		AFM40		—		
	Micro mist separator	AFD20		AFD30		AFD40		—		
	Micro mist separator with pre-filter	—						AMH350C	AMH450C	
	Regulator (Type V only) Note 1)	AR20 Note 2)		AR25 Note 2)		AR40 Note 2)				
Range of operating conditions	Fluid	Compressed air								
	Inlet air pressure (MPa)	0.3 to 0.85				0.3 to 1.0				
	Inlet air temperature (°C)	–5 to 55 Note 3)				–5 to 50 Note 3)				
	Ambient temperature (°C)	–5 to 55 Note 3)				–5 to 50 Note 3)				
Standard performance	Outlet air atmospheric pressure dew point (°C)	–20								
Standard performance conditions	Inlet air flow rate (L/min [ANR]) Note 4)	31	62	125	250	360	586	720	888	1185
	Outlet air flow rate (L/min [ANR])	25	50	100	200	300	500	600	750	1000
	Purge air flow rate (L/min [ANR]) Note 5)	6	12	25	50	60	86	120	138	185
	Inlet air pressure (MPa)	0.7								
	Inlet air temperature (°C)	25								
	Inlet air saturation temperature (°C)	25								
	Ambient temperature (°C)	25								
Dew point indicator purge air flow rate		1 L/min [ANR] {In the case of Inlet air pressure 0.7 MPa}								
Regulator construction (Type V only)		Relief type								
Port size (Nominal size B)		1/8, 1/4		1/4, 3/8				3/8, 1/2	1/2	
Weight (kg) (With auto-drain)	Type M	0.83 (0.90)		1.21 (1.30)	1.44 (1.53)	2.27 (2.37)	2.30 (2.40)	2.61 (2.71)	3.29 (3.39)	3.42 (3.52)
	Type V	1.28 (1.35)		1.67 (1.76)	1.90 (1.99)	3.38 (3.49)	3.41 (3.52)	3.80 (3.90)	4.48 (4.58)	4.61 (4.71)

Model		Standard dew point: –15°C								
		IDG3HM3	IDG5HM3	IDG10HM3	IDG20HM3	IDG30HAM3	IDG50HAM3	IDG60HM2	IDG75HM2	IDG100HM2
		IDG3HV3	IDG5HV3	IDG10HV3	IDG20HV3	IDG30HAV3	IDG50HAV3	IDG60HV2	IDG75HV2	IDG100HV2
Component equipment	Mist separator	AFM20		AFM30		AFM40		—		
	Micro mist separator	AFD20		AFD30		AFD40		—		
	Micro mist separator with pre-filter	—						AMH350C	AMH450C	
	Regulator (Type V only) Note 1)	AR20 Note 2)		AR25 Note 2)		AR40 Note 2)				
Range of operating conditions	Fluid	Compressed air								
	Inlet air pressure (MPa)	0.3 to 0.85				0.3 to 1.0				
	Inlet air temperature (°C)	–5 to 55 Note 3)				–5 to 50 Note 3)				
	Ambient temperature (°C)	–5 to 55 Note 3)				–5 to 50 Note 3)				
Standard performance	Outlet air atmospheric pressure dew point (°C)	–15								
Standard performance conditions	Inlet air flow rate (L/min [ANR]) Note 4)	28	56	111	222	329	550	665	818	1100
	Outlet air flow rate (L/min [ANR])	25	50	100	200	300	500	600	750	1000
	Purge air flow rate (L/min [ANR]) Note 5)	3	6	11	22	29	50	65	68	100
	Inlet air pressure (MPa)	0.7								
	Inlet air temperature (°C)	25								
	Inlet air saturation temperature (°C)	25								
	Ambient temperature (°C)	25								
Dew point indicator purge air flow rate		1 L/min [ANR] {In the case of Inlet air pressure 0.7 MPa}								
Regulator construction (Type V only)		Relief type								
Port size (Nominal size B)		1/8, 1/4		1/4, 3/8				3/8, 1/2	1/2	
Weight (kg) (With auto-drain)	Type M	0.83 (0.90)		1.21 (1.30)	1.44 (1.53)	2.27 (2.37)	2.30 (2.40)	2.61 (2.71)	3.29 (3.39)	3.42 (3.52)
	Type V	1.28 (1.35)		1.67 (1.76)	1.90 (1.99)	3.38 (3.49)	3.41 (3.52)	3.80 (3.90)	4.48 (4.58)	4.61 (4.71)

Standard Specifications/Unit [Type M, Type V] (Standard dew point: –40°C, –60°C)

Model		Standard dew point: –40°C					Standard dew point: –60°C		
		IDG30LAM3	IDG50LAM3	IDG60LAM3	IDG75LAM3	IDG100LAM3	IDG60SAM3	IDG75SAM3	IDG100SAM3
		IDG30LAV3	IDG50LAV3	IDG60LAV3	IDG75LAV3	IDG100LAV3	IDG60SAV3	IDG75SAV3	IDG100SAV3
Component equipment	Mist separator	AFM40					AFM40		
	Micro mist separator	AFD40					AFD40		
	Regulator (Type V only) Note 1)	AR40 Note 2)					AR40 Note 2)		
Range of operating conditions	Fluid	Compressed air					Compressed air		
	Inlet air pressure (MPa)	0.3 to 1.0					0.3 to 1.0		
	Inlet air temperature (°C)	–5 to 50 Note 3)					–5 to 50 Note 3)		
	Ambient temperature (°C)	–5 to 50 Note 3)					–5 to 50 Note 3)		
Standard performance	Outlet air atmospheric pressure dew point (°C)	–40 Note 4)					–60 Note 4)		
Standard performance conditions	Inlet air flow rate (L/min [ANR]) Note 5)	93	135	224	308	400	75	140	230
	Outlet air flow rate (L/min [ANR])	75	110	170	240	300	50	100	150
	Purge air flow rate (L/min [ANR]) Note 6)	18	25	54	68	100	25	40	80
	Inlet air pressure (MPa)	0.7					0.7		
	Inlet air temperature (°C)	25					25		
	Inlet air saturation temperature (°C)	25					25		
	Ambient temperature (°C)	25					25		
Dew point indicator purge air flow rate		1 L/min [ANR] {In the case of Inlet air pressure 0.7 MPa}					1 L/min [ANR] {In the case of Inlet air pressure 0.7 MPa}		
Regulator construction (Type V only)		Relief type					Relief type		
Port size (Nominal size B)		1/4, 3/8		3/8, 1/2			3/8, 1/2		
Weight (kg) (With auto-drain)	Type M	2.27 (2.37)	2.30 (2.40)	3.05 (3.15)	3.18 (3.28)	3.31 (3.41)	3.05 (3.15)	3.18 (3.28)	3.31 (3.41)
	Type V	3.38 (3.49)	3.41 (3.52)	4.16 (4.26)	4.29 (4.39)	4.42 (4.52)	4.16 (4.26)	4.29 (4.39)	4.42 (4.52)

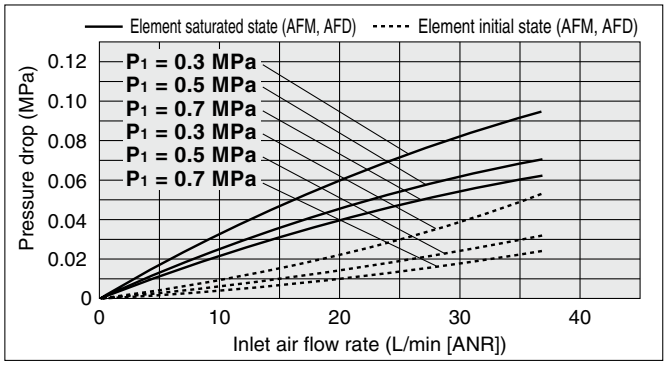
Note 1) For flow-rate characteristics and pressure characteristics of regulator, refer to Best Pneumatics No. 5.
Note 2) It will come with Option E (With square-shaped, embedded type of a pressure regulator). Refer to Best Pneumatics No. 5 for details of regulators such as set pressure range, etc.
Note 3) No freezing.
Note 4) Refer to the Piping Precautions (Piping material for low dew point air) on page 46.
Note 5) "ANR" indicates the flow rate converted to the value at 20°C, under the atmospheric pressure and the state of relative humidity 65%.
Note 6) Includes 1 L/min [ANR] of purge air flow (at 0.7 MPa inlet air pressure) for the dew point indicator.
Note 7) When highly purified air is required, refer to the Design 3. on page 45.

Unit Type/Flow-rate Characteristics

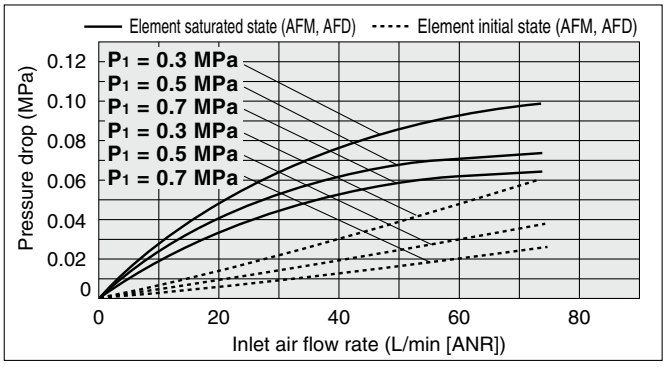
Conditions: Inlet air temperature 25°C, P1: Inlet air pressure

Standard dew point···–20°C [Symbol: Nil], –15°C [Symbol: H]

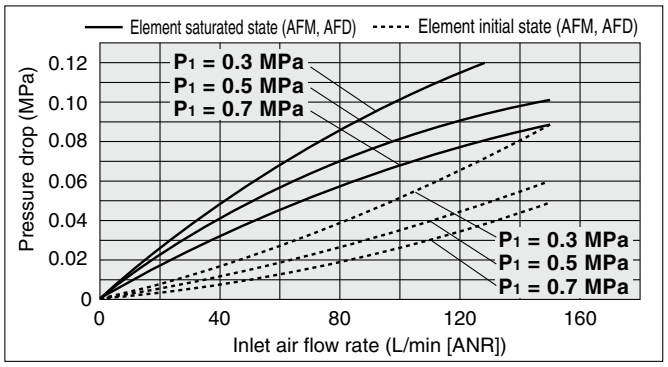
IDG3M3, 3V3
IDG3HM3, 3HV3



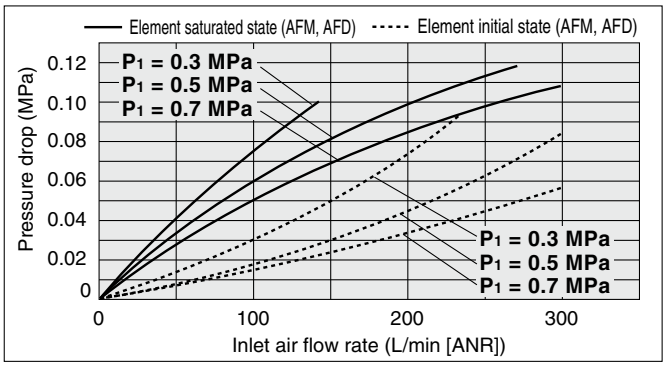
IDG5M3, 5V3
IDG5HM3, 5HV3



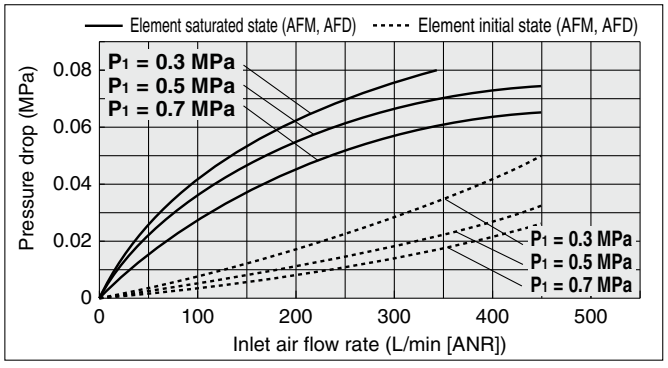
IDG10M3, 10V3
IDG10HM3, 10HV3



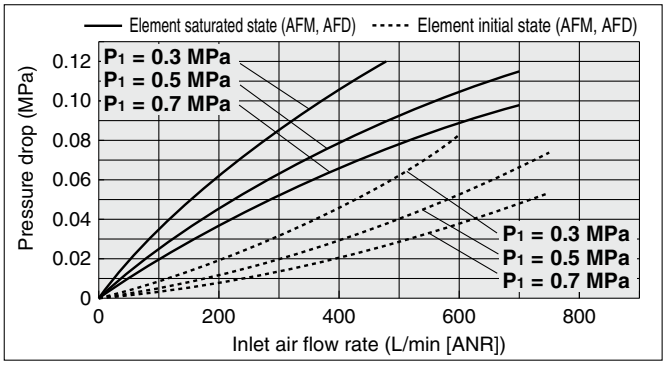
IDG20M3, 20V3
IDG20HM3, 20HV3



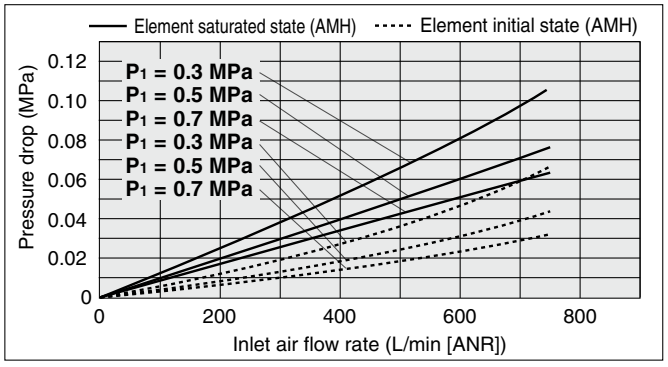
IDG30AM3, 30HAV3



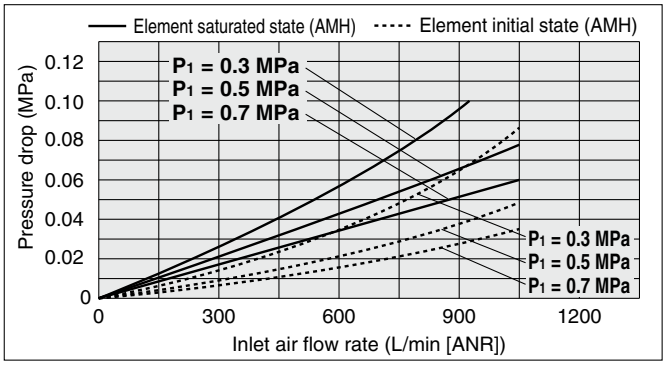
IDG50AM3, 50HAV3



IDG60M2, 60HM2
IDG60V2, 60HV2



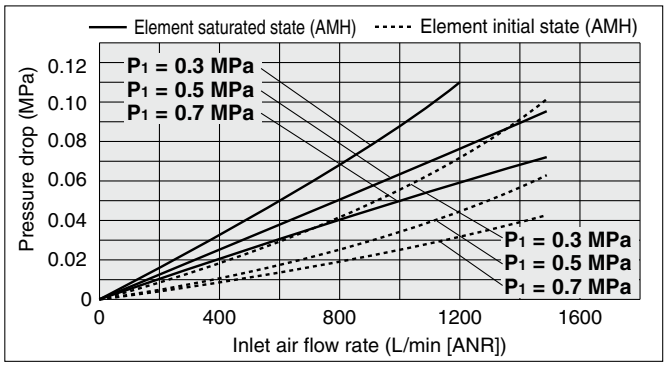
IDG75M2, 75HM2
IDG75V2, 75HV2



Unit Type/Flow-rate Characteristics

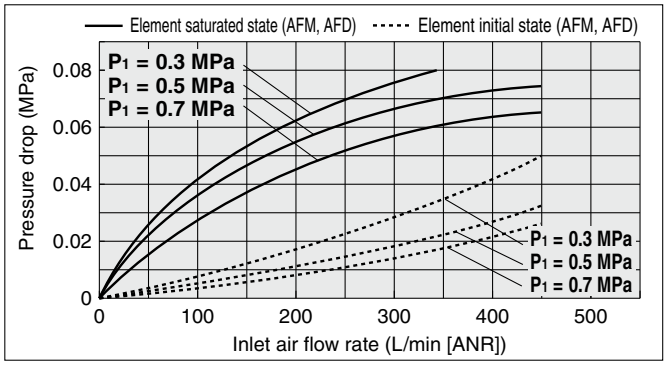
Conditions: Inlet air temperature 25°C, P1: Inlet air pressure

IDG100M2, 100HM2
IDG100V2, 100HV2

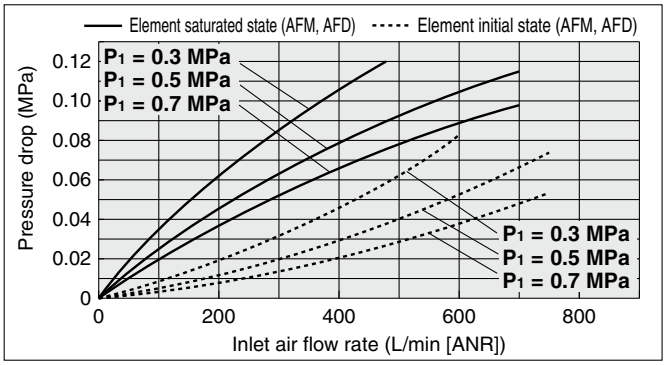


Standard dew point···–40°C [Symbol: L], –60°C [Symbol: S]

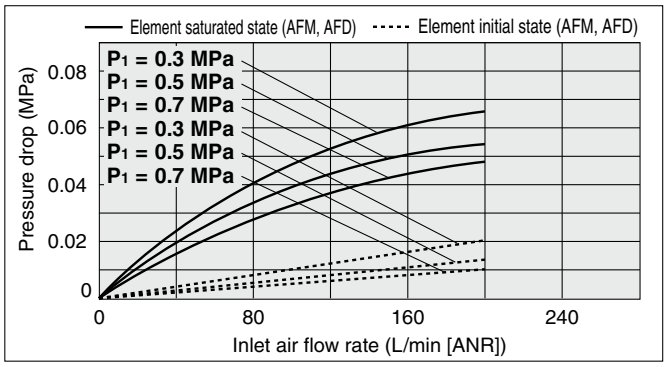
IDG30LAM3, 30LAV3



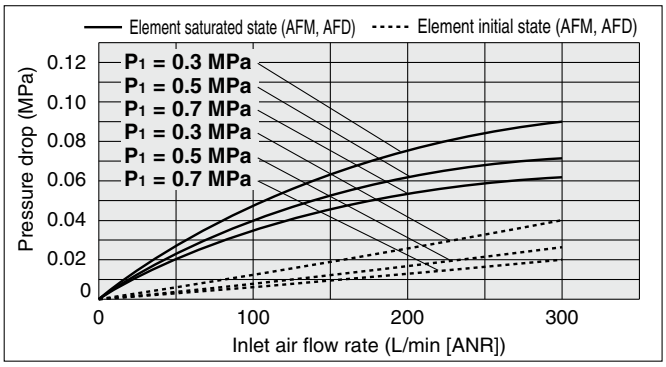
IDG50LAM3, 50LAV3



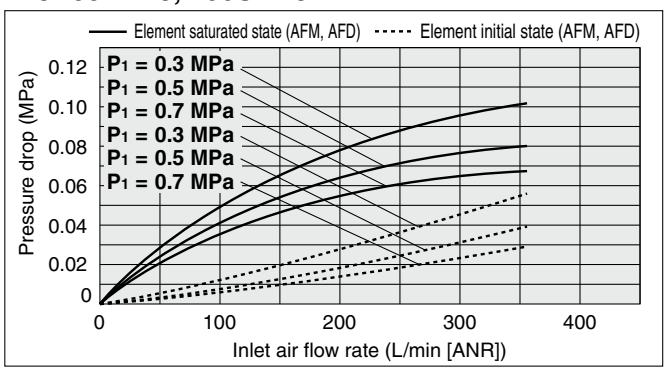
IDG60LAM3, 60SAM3
IDG60LAV3, 60SAV3



IDG75LAM3, 75SAM3
IDG75LAV3, 75SAV3

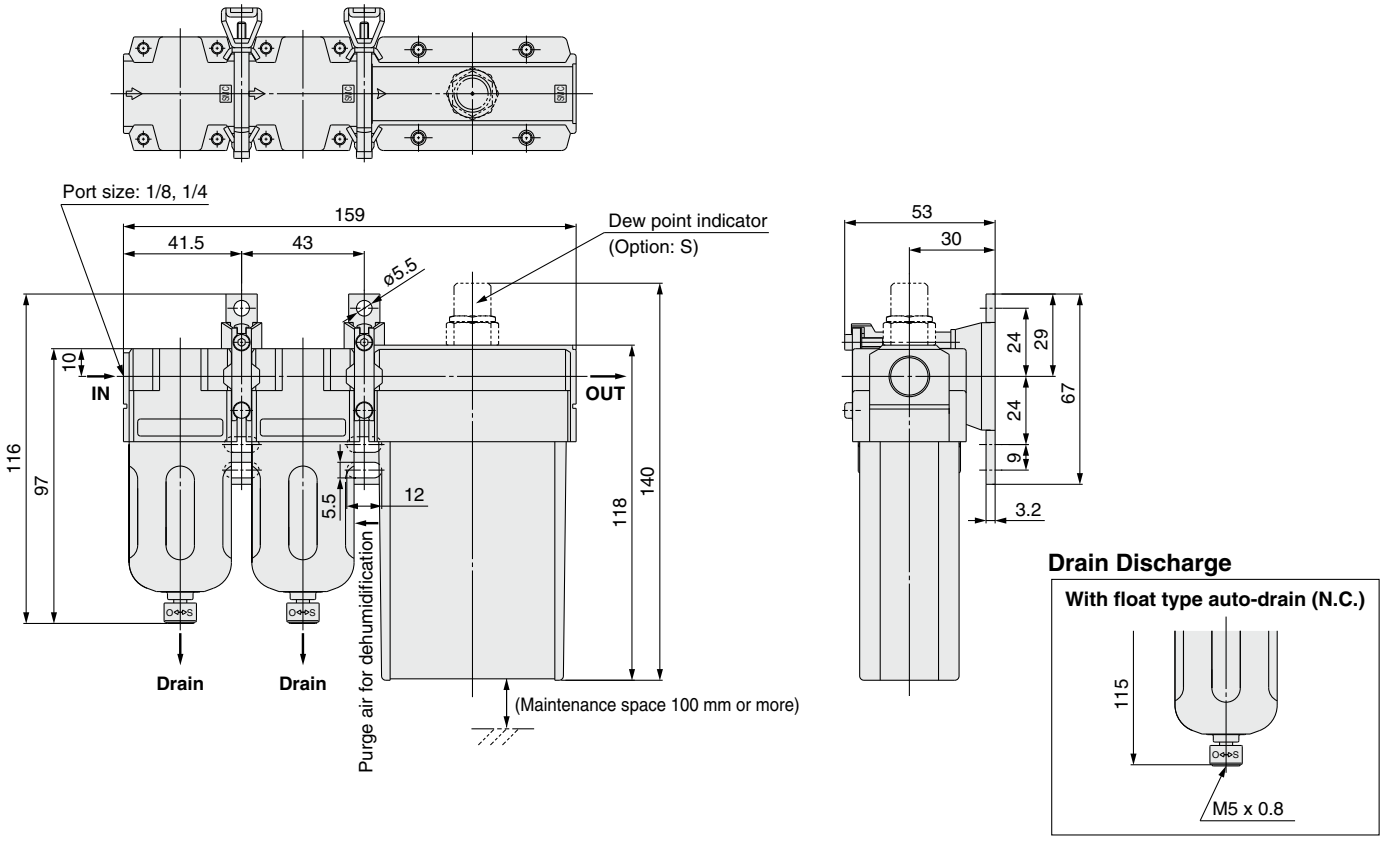


IDG100LAM3, 100SAM3
IDG100LAV3, 100SAV3

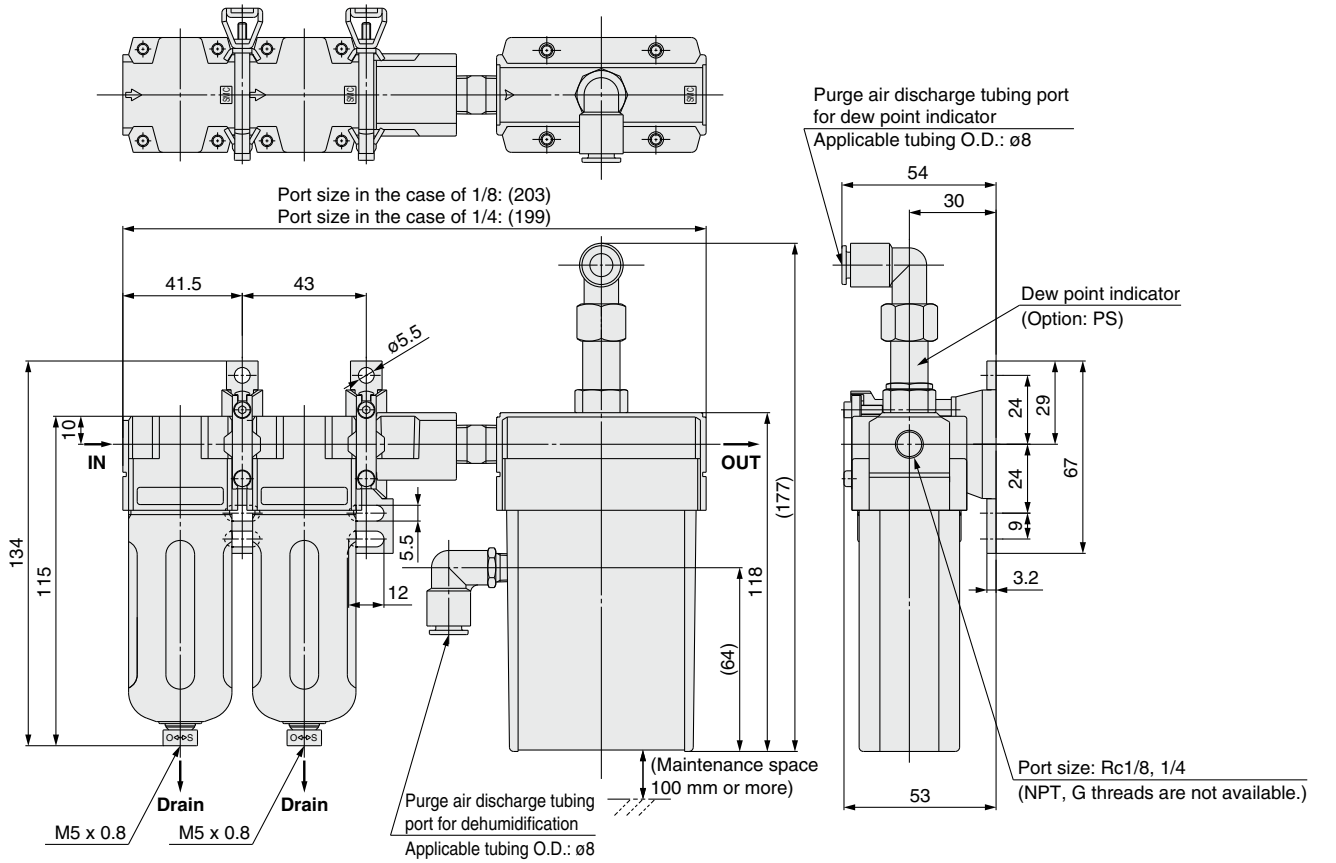


Dimensions (Type M)

IDG3M3, 5M3
IDG3HM3, 5HM3

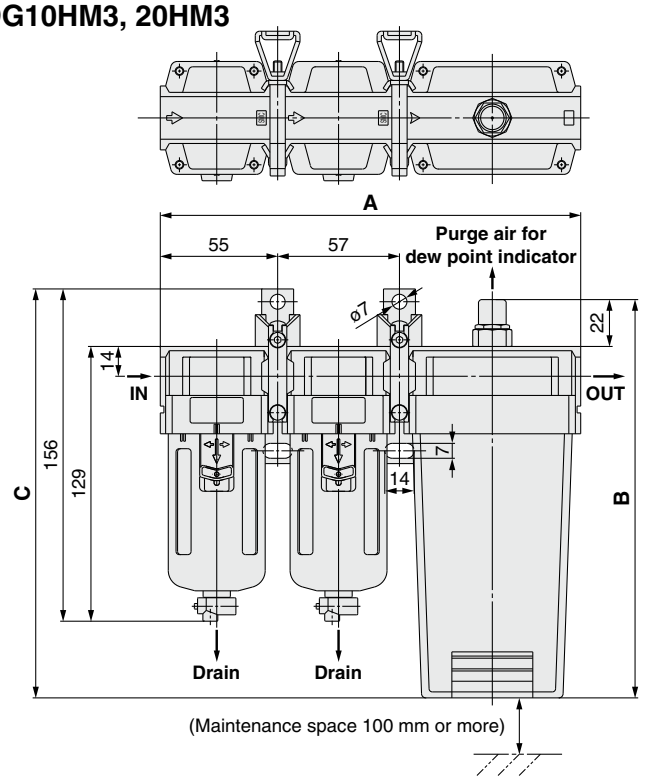


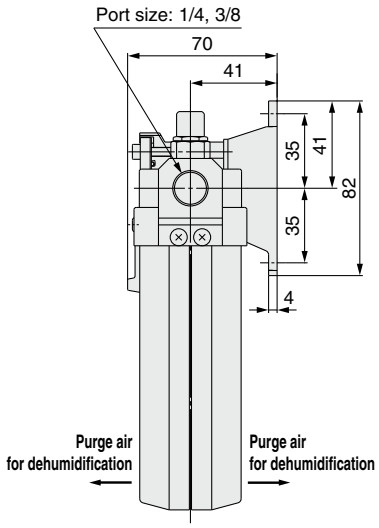
With fitting for purge air discharge (Option: P)



Dimensions (Type M)

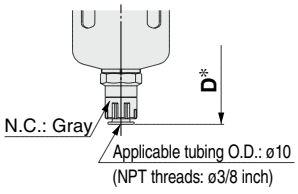
IDG10M3, 20M3
IDG10HM3, 20HM3



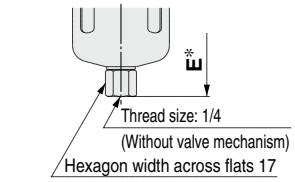


Drain Discharge

With float type auto-drain

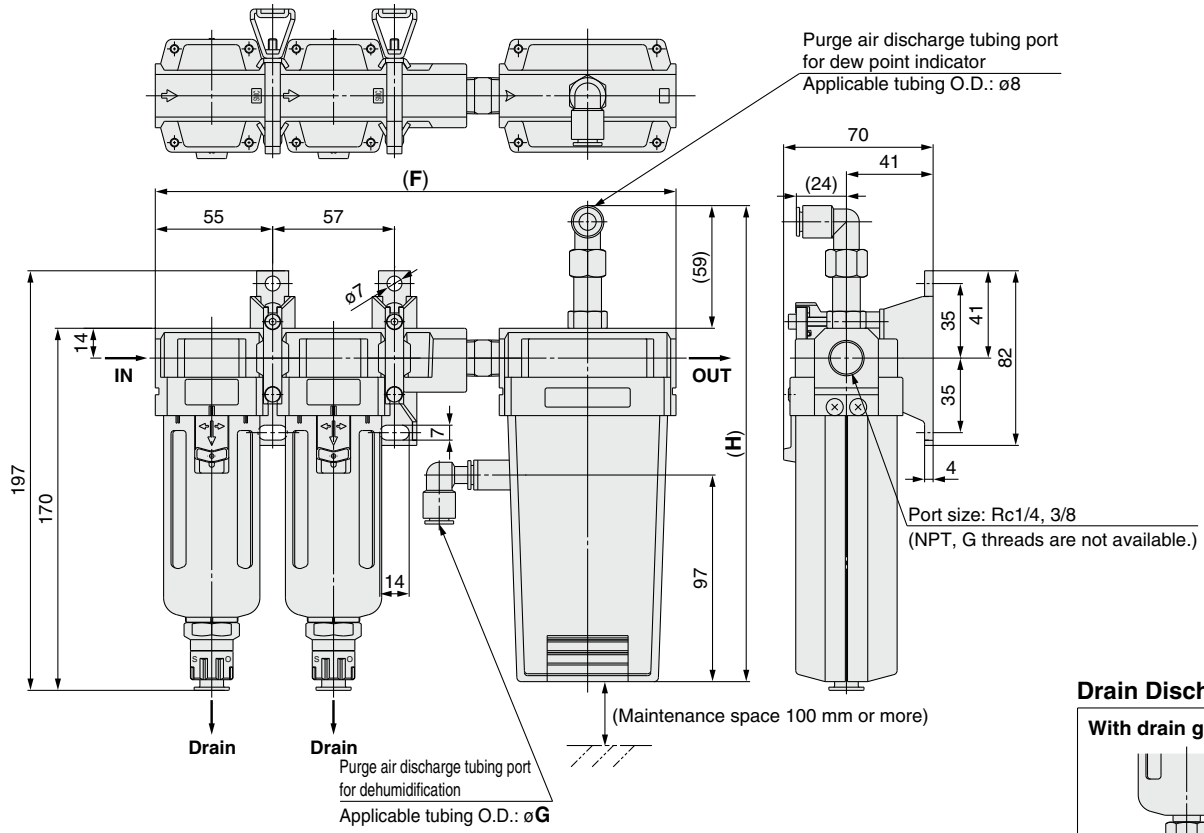


With drain guide



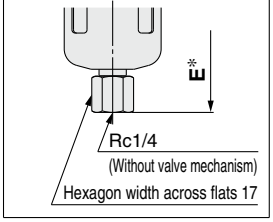
∗ Total length of the separator

With fitting for purge air discharge (Option: P)



Drain Discharge

With drain guide

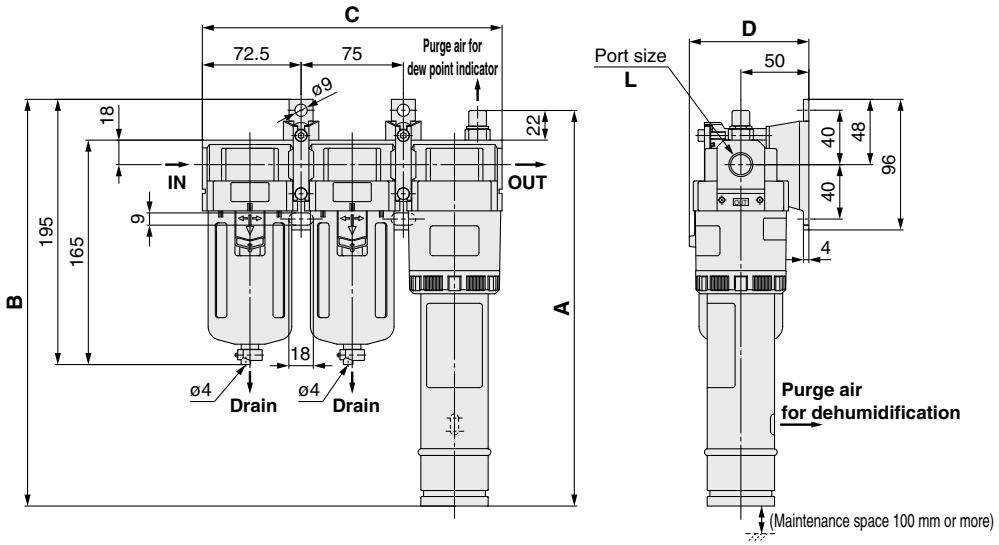


∗ Total length of the separator

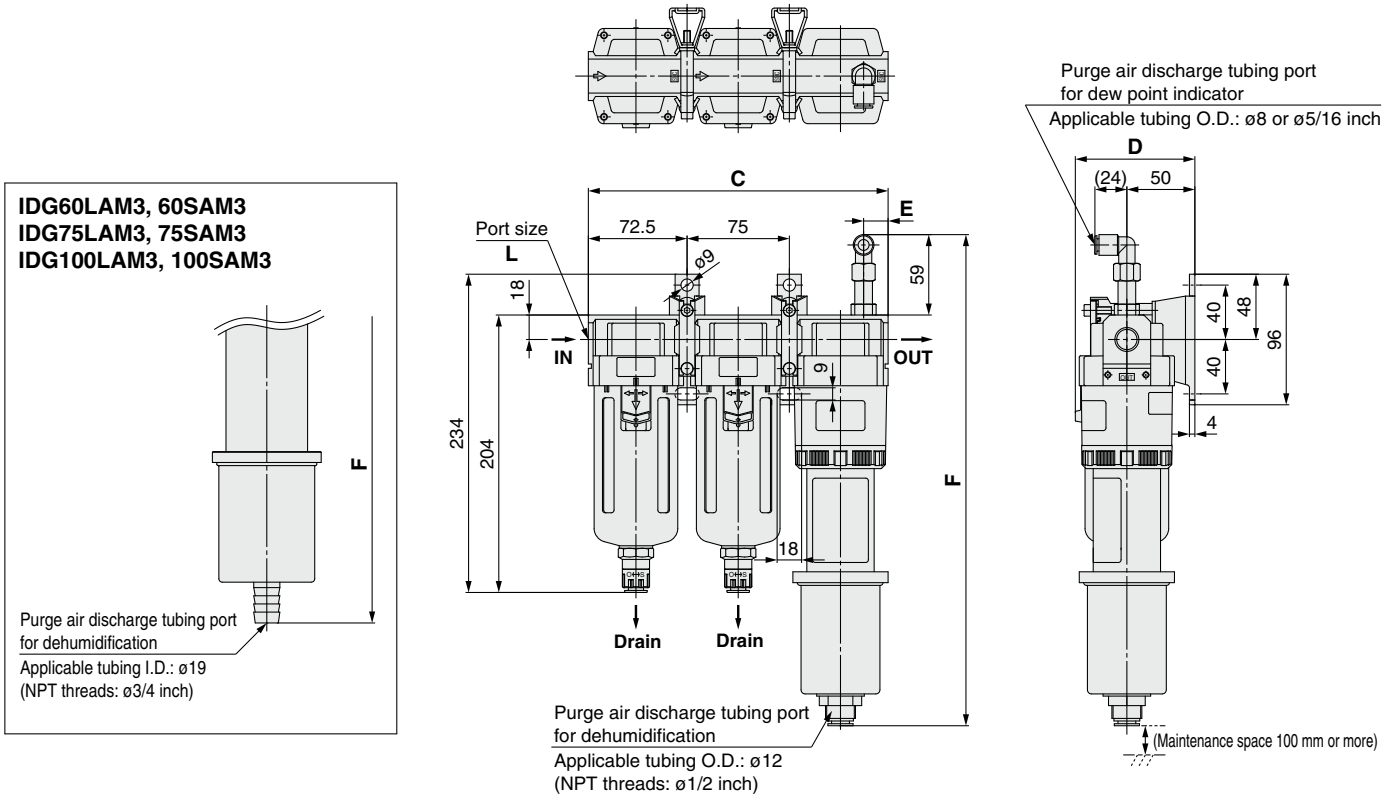
Model	A	B	C	With float type auto-drain	With drain guide	Option: P			
						F		G	H
				D	E	Port size: 1/4	Port size: 3/8		
IDG10M3,10HM3	197	187	192	170	136	239	241	8	224
IDG20M3,20HM3	227	212	217			269	271	10	249

Dimensions (Type M)

IDG30□AM3
IDG50□AM3
IDG60□AM3
IDG75□AM3
IDG100□AM3

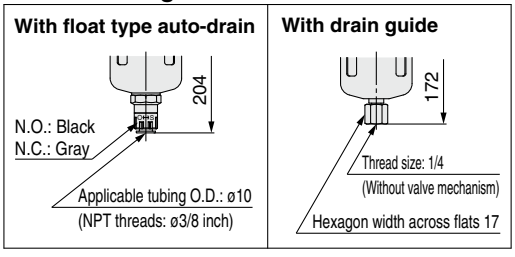


With fitting for purge air discharge (Option: P)



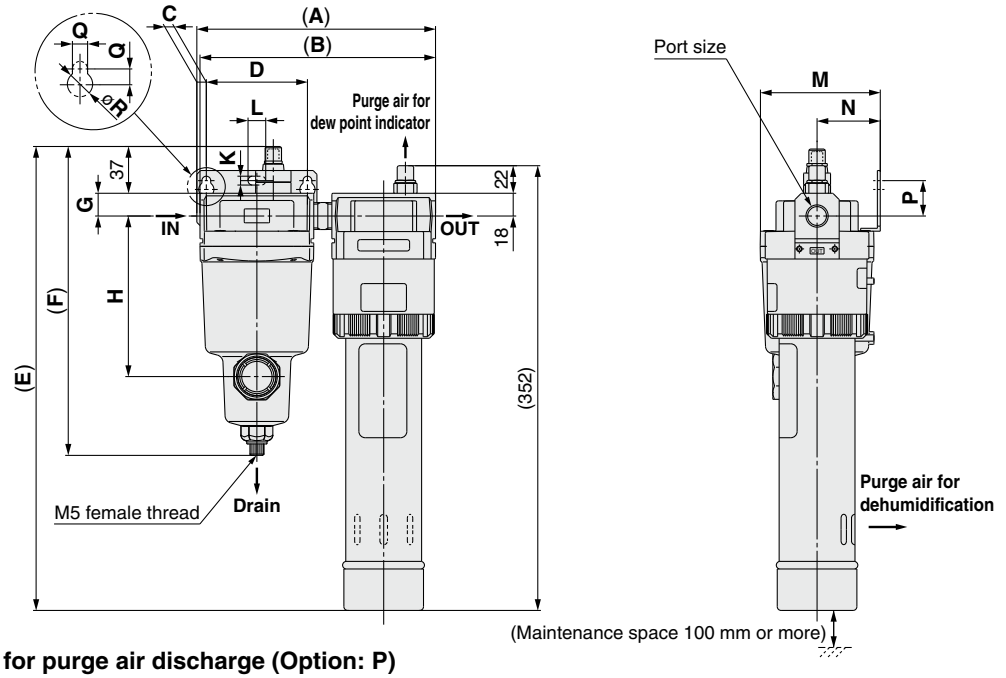
Model	Port size L	A	B	C	D	E	F
IDG30□AM3	1/4	291	299	220	88	18	361
IDG50□AM3	3/8	330	338				405
IDG60LAM3, 60SAM3	3/8	348	356	232	91	24	426
IDG75LAM3, 75SAM3	1/2	418	426				495
IDG100LAM3, 100SAM3		483	491				560

Drain Discharge

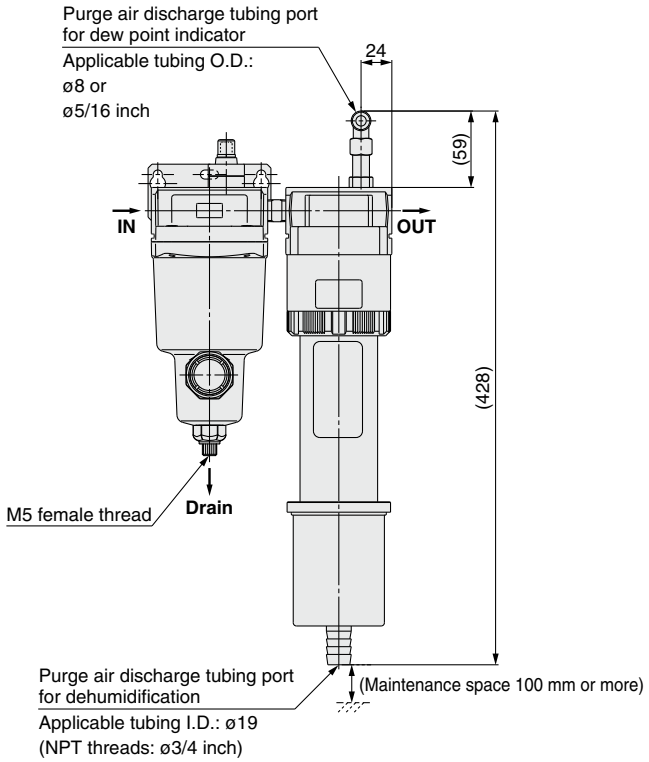


Dimensions (Type M)

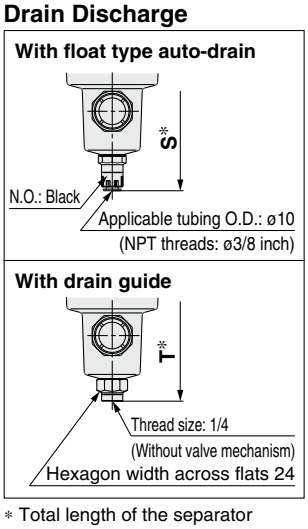
IDG60□M2
IDG75□M2
IDG100□M2



With fitting for purge air discharge (Option: P)



Drain Discharge

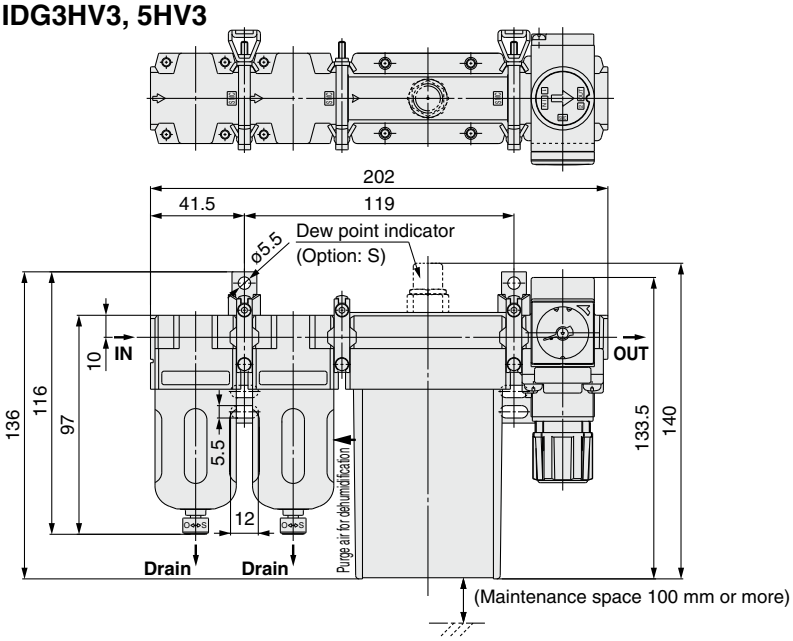


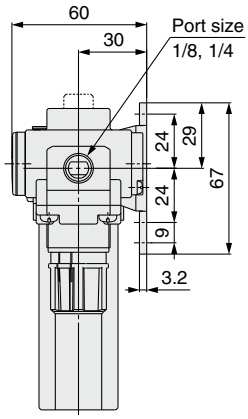
* Total length of the separator

Model	Port size	A	B	C	D	E	F	G	H	K	L	M	N	P	Q	R	With float type auto-drain S	With drain guide T
IDG60□M2	3/8, 1/2	189	186	7.5	80	363	241	18	127	7	14	95	50	28	7	12	255	241
IDG75□M2	1/2	205	202	11	90	433	262	20	146	9	18	108	55	31	9	15	276	262
IDG100□M2						498												

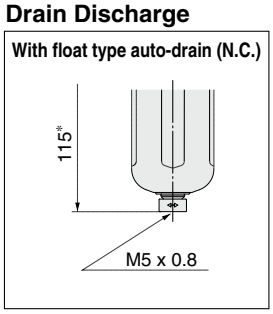
Dimensions (Type V)

IDG3V3, 5V3
IDG3HV3, 5HV3



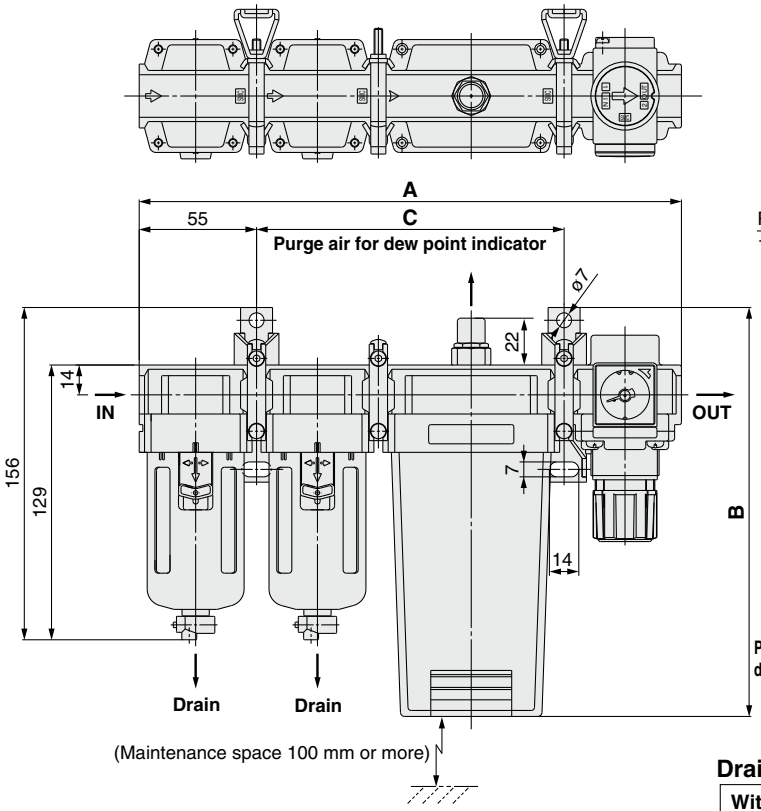


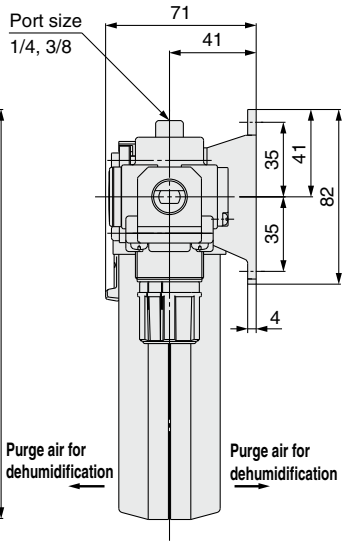
Drain Discharge



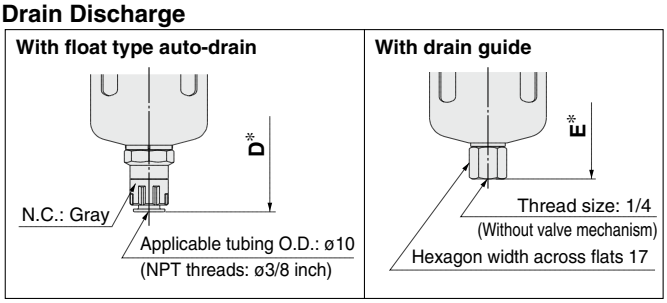
* Total length of the separator

IDG10V3, 20V3
IDG10HV3, 20HV3





Drain Discharge

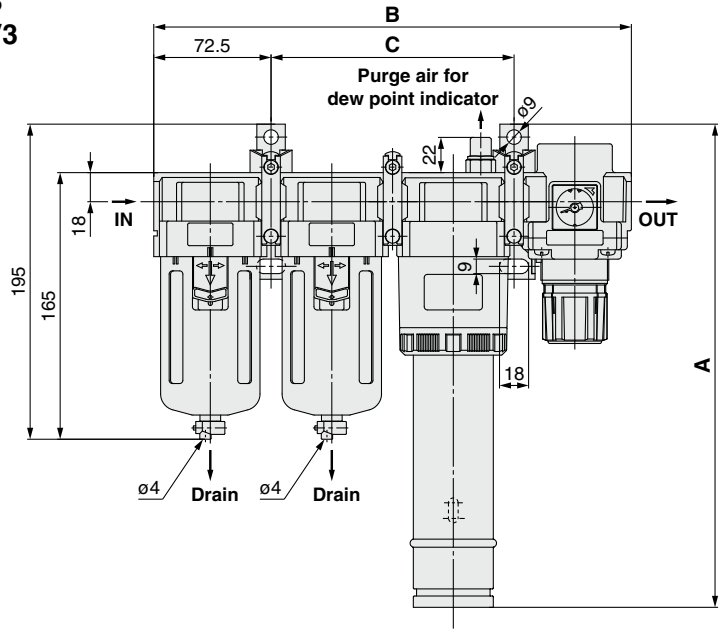


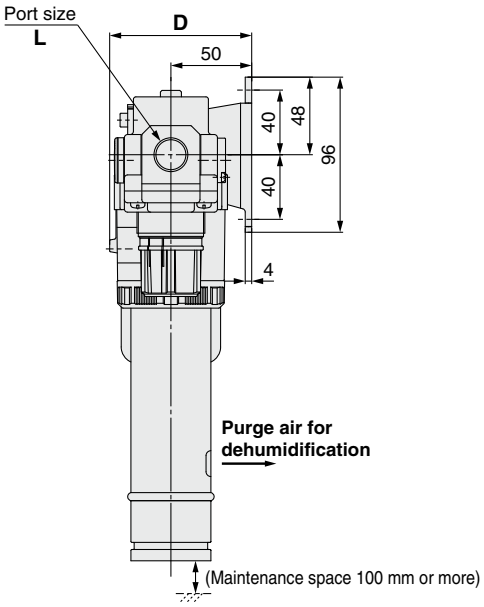
* Total length of the separator

Model	A	B	C	With float type auto-drain	With drain guide
				D	E
IDG10V3, 10HV3	254	192	144	170	136
IDG20V3, 20HV3	284	217	174		

Dimensions (Type V)

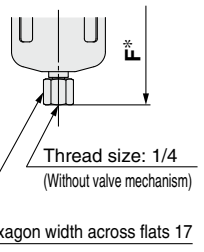
IDG30□AV3
IDG50□AV3
IDG60□AV3
IDG75□AV3
IDG100□AV3



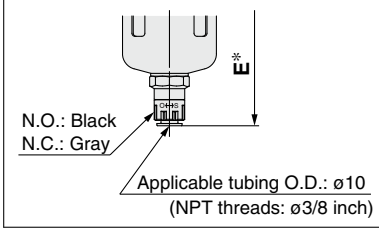


Drain Discharge

With drain guide



With float type auto-drain

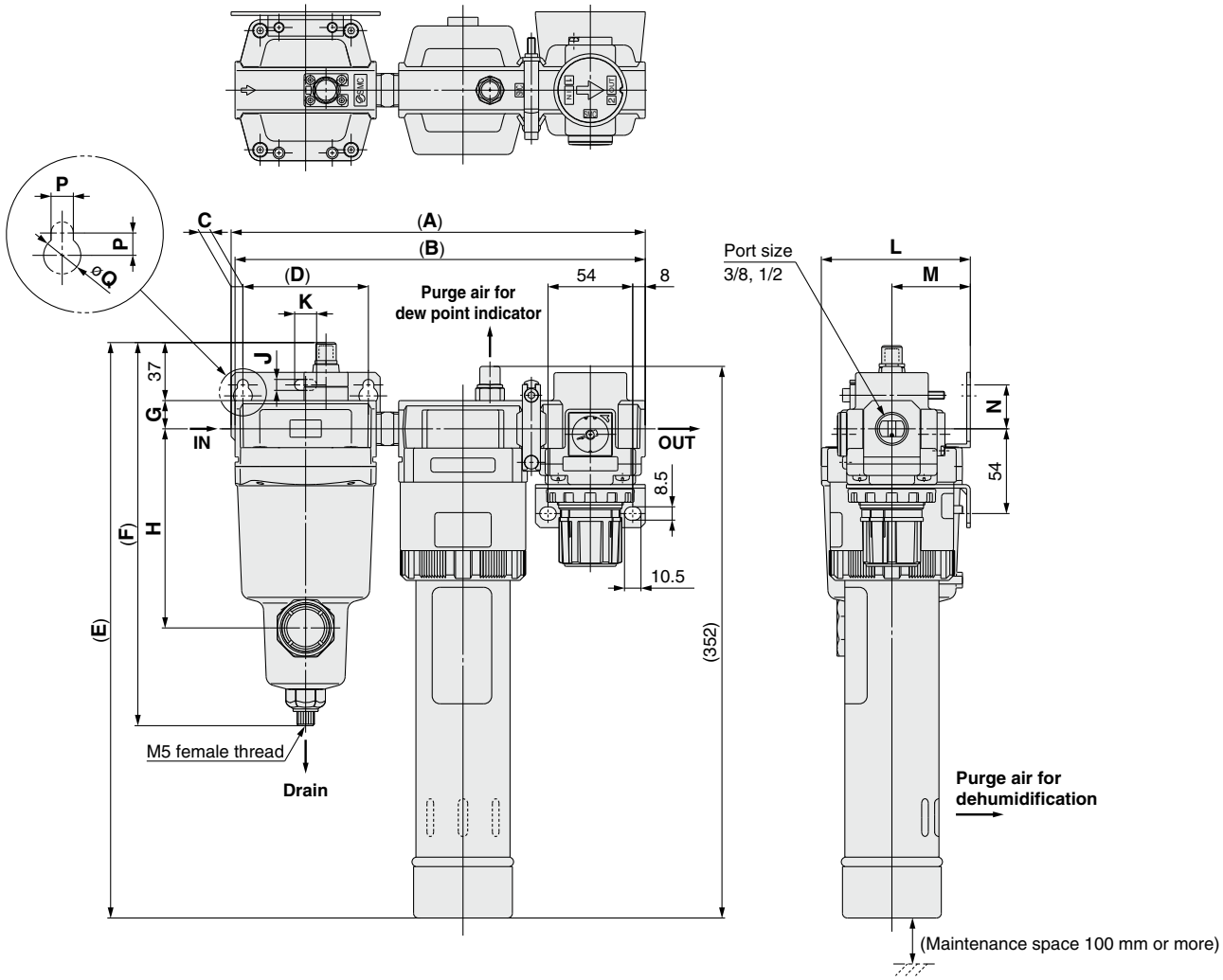


* Total length of the separator

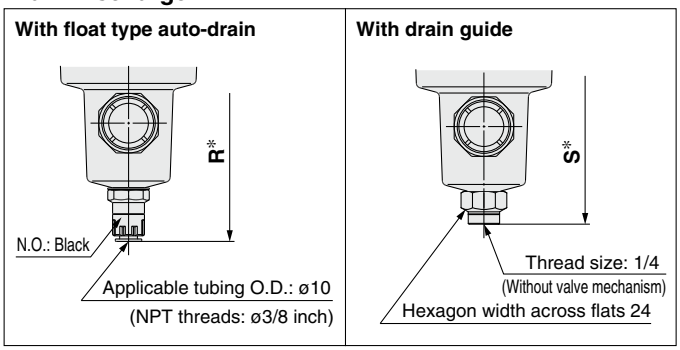
Model	Port size L	A	B	C	D	With float type auto-drain E	With drain guide F
IDG30□AV3	1/4	269	295	150	88	204	172
IDG50□AV3	3/8	308					
IDG60□AV3	3/8	356	307	162	91		
IDG75□AV3	1/2	426					
IDG100□AV3		491					

Dimensions (Type V)

IDG60□V2
IDG75□V2
IDG100□V2



Drain Discharge



∗ Total length of the separator

Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	With float type auto-drain	With drain guide
																	R	S
IDG60□V2	3/8, 1/2	264	261	7.5	80	363	241	18	127	7	14	84	50	28	7	12	255	241
IDG75□V2	1/2	280	277	11	90	433	262	20	146	9	18	108	55	31	9	15	276	262
IDG100□V2						498												

Model Selection

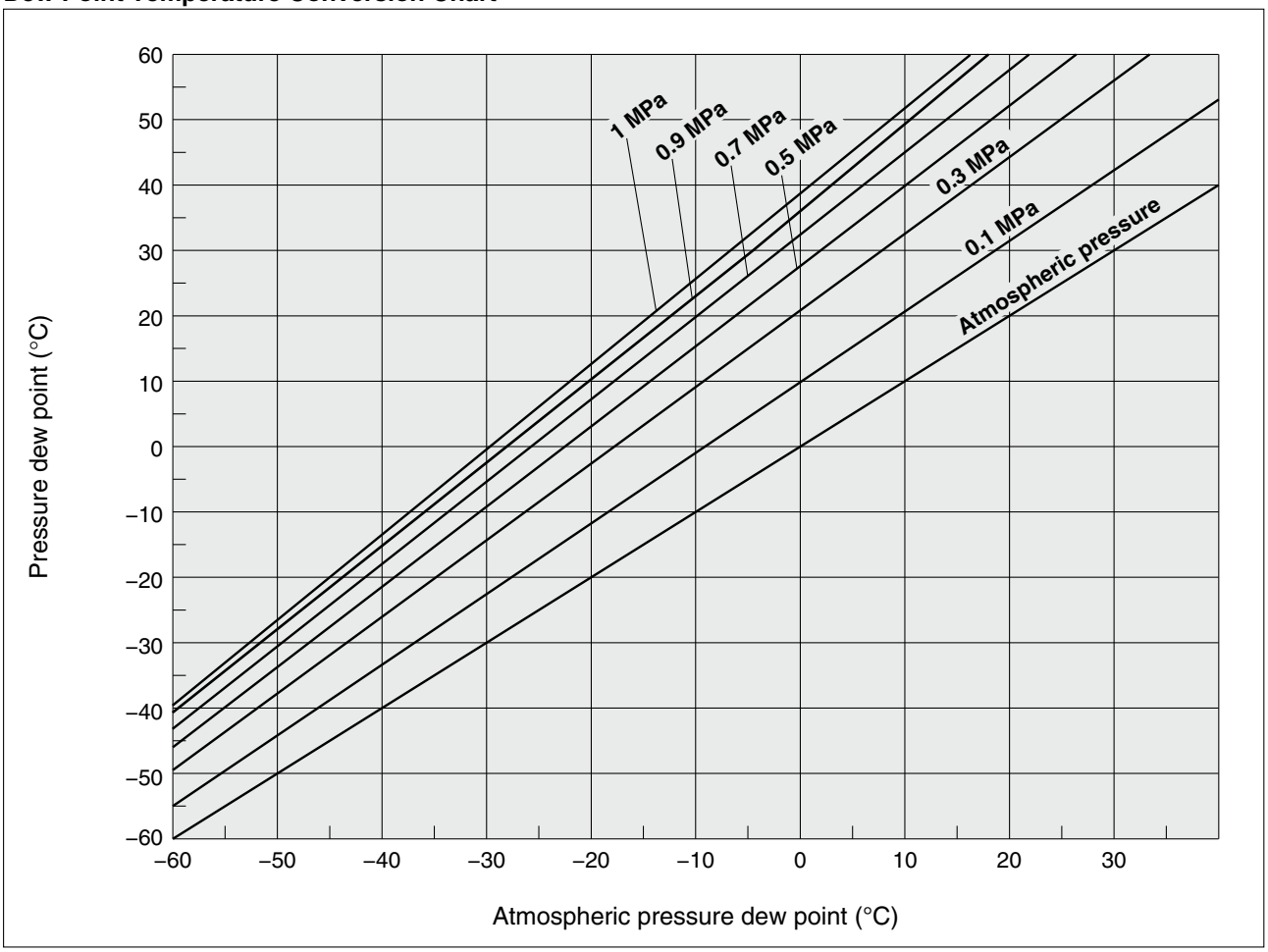
Step 1 Confirmation of operating conditions

Outlet air flow rate (L/min [ANR])
Outlet air atmospheric pressure dew point (°C)
(When it is necessary to convert from the pressurized dew point, refer to the conversion chart for dew point temperature below.)
Inlet air pressure (MPa)
Inlet air temperature (°C)
Allowable pressure drop **ΔP** (MPa)
Compressed air supply capacity **Q** (L/min [ANR])

[Example]

Outlet air flow rate	150 (L/min[ANR])
Outlet air atmospheric pressure dew point	−15 (°C)
Inlet air pressure	0.5 (MPa)
Inlet air temperature	35 (°C)
Allowable pressure drop	0.03 (MPa)
Compressed air supply capacity	300 (L/min [ANR])

Dew Point Temperature Conversion Chart



Step 2 **Correction of the outlet air flow rate influenced by the inlet air temperature**

(When the inlet air temperature is 25°C, refer to **Step 4**)

When the inlet air temperature is not the same temperature (25°C) on the performance charts, calculate the correction factor for the outlet air flow rate from the chart below to compensate the outlet air flow rate.

Example:
Inlet air temperature 35°C
Outlet air flow rate 150 L/min [ANR]

From table below (Inlet Air Temperature – Correction Factor for Outlet Air Flow Rate)
Correction factor for outlet air flow rate is
0.40 for Series IDG□A
0.86 for Series IDG
Therefore,
corrected outlet air flow rate can be determined.
[Series IDG□A] 150 ÷ 0.4 = 375 L/min [ANR]
[Series IDG] 150 ÷ 0.86 = 175 L/min [ANR]

Inlet Air Temperature — Correction Factor for Outlet Air Flow Rate

Inlet air temperature (°C)	Series IDG□A	Series IDG
10	1.35	3.00
15	1.22	2.17
20	1.10	1.52
25	1.00	1.00
30	0.92	0.65
35	0.86	0.40
40	0.80	0.25
45	0.75	0.19
50	0.70	0.14

Note) Correction factors between Series IDG□A and Series IDG are different from each other, because the module characteristics are different.

Step 3 **Model selection based on corrected outlet flow rate**

Select a model based on the corrected outlet air flow rate calculated by **Step 2** on the flow-rate characteristics charts on pages 5 and 6.

Example:
Corrected outlet air flow rate 375 L/min [ANR] [Series IDG□A]
Corrected outlet air flow rate 175 L/min [ANR] [Series IDG]
Inlet air pressure 0.5 MPa
Outlet air atmospheric pressure dew point −15°C

With the conditions of the corrected outlet air flow rate and the inlet air pressure mentioned to the left, the outlet air atmospheric pressure dew point is found to be −15°C or below.
When selecting a model
[Series IDG□A] IDG60
[Series IDG] IDG30A, IDG50HA

Step 4 **Confirmation of purged air flow rate**

Read out from the graph on the purged air flow rate (page 9).

Example:
Inlet air pressure 0.5 MPa
Model selection IDG30A — In the case of IDG30A 56 L/min[ANR]
IDG50HA — In the case of IDG50HA 45 L/min[ANR]
IDG60 — In the case of IDG60 94 L/min[ANR]

Step 5 **Calculation of inlet air flow rate Q_1, and confirmation of compressed air supply capacity**

Inlet air flow rate Q_1 (L/min [ANR]) =
Outlet air flow rate (L/min [ANR]) + Purge air flow rate (L/min [ANR])

Example: Assuming that IDG30A is chosen by **Step 4**
Outlet air flow rate 150 L/min [ANR]
Purge air flow rate 56 L/min [ANR]
Compressed air supply capacity **Q** 300 L/min [ANR]

The inlet air flow rate Q_1 = 150 + 56 = 206 L/min[ANR]

Confirmation of compressed air supply capacity $Q \geq Q_1$

NO → **Step 1** Review operating conditions.

YES 300 ≥ 206, therefore proceed to **Step 6**

Step 6

Step 6 **Confirmation of pressure drop ΔP_1 [MPa]**

Single unit (Refer to pages 7 and 8.)
Unit (Refer to pages 21 and 22.)

Example: Model to be selected in the case of IDG30A
Inlet air pressure 0.5 MPa
Inlet air flow 206 L/min [ANR]
Allowable pressure drop ΔP 0.03 MPa

- Single unit IDG30A
  on the flow-rate characteristics (page 7),
  ΔP_1 = 0.006 MPa
- Unit IDG30AM3
  ΔP_1 = 0.01 MPa (Element initial state)
  ΔP_1 = 0.055 MPa (Element saturated state)

Step 1 or **Step 2** Review operating conditions or increase size.

NO ← $\Delta P \geq \Delta P_1$

YES In the case of IDG30A and IDG30AM3 (with the element in the initial state), $\Delta P \geq \Delta P_1$, therefore proceed to **Step 7**

Step 7 **Drain discharge method (in the case of unit), accessories and optional specifications**

Example:
In the case of IDG30A
Accessories: With bracket
Option specifications: None
In the case of IDG30AM3
Drain discharge method: N.O. auto-drain
Option specifications: None

Single unit (Refer to pages 1 and 2.)
Unit (Refer to pages 15 and 16.)

Refer to "Selection" in Specific Product Precautions 1 on page 45.

Model selected

<In the case of single unit type>
IDG30A-03B
<In the case of unit type>
IDG30AM3-03D

Series IDG□A/IDG

Made to Order

Please contact SMC for further details about dimensions, specifications and delivery.

Made to Order

1 With Element Service Indicator

Symbol **-X016**

An element service indicator is mounted on the micro mist separator with pre-filter (Series AMH) to allow visual management of the element's clogging life. In addition, combination with a micro mist separator with pre-filter also provides a spatially compact design.

How to Order

Reduced purge IDG□A Series

IDG 30 □ A M2 – □ 03 □ – □ – X016

Size

30
50
60
75
100

With element service indicator

Option

Symbol	Contents
Nil	None (Standard)
R	Flow direction (Right → Left)

Standard dew point temperature and air flow rate

Symbol	Standard dew point (°C)	Flow rate by size Outlet air flow rate (L/min [ANR])				
		30	50	60	75	100
Nil	–20	300	500	—	—	—
H	–15	300	500	—	—	—
L	–40	75	110	170	240	300
S	–60	—	—	—	—	150

Drain discharge method

Symbol	Drain discharge method	Note
Nil	Manual valve	—
C	N.C. auto-drain	Auto-drains listed on page 17 are attached.
D	N.O. auto-drain	
J	Drain guide (Port size 1/4 without valve)	—

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

Port size

Symbol	Port size	30			50			60	75	100	
		Nil	H	L	Nil	H	L	L	L	L	S
02	1/4	●	●	●	—	—	●	—	—	—	—
03	3/8	●	●	—	●	●	—	●	●	●	●

Component equipment

Component equipment	30			50			60	75	100	
	Nil	H	L	Nil	H	L	L	L	L	S
Micro mist separator with pre-filter (AMH)	AMH250		AMH150	AMH350		AMH150	AMH250	AMH250	AMH250	

Replacement Parts (Element for micro mist separator with pre-filter)

Description	AMH150	AMH250	AMH350
Element assembly	AMH-EL150	AMH-EL250	AMH-EL350

Refer to page 18 for the clogging indication of the element service indicator.

How to Order

IDG 10 □ M2 – □ 02 □ – □ – X016

Size

3
5
10
20

With element service indicator

Standard dew point temperature and air flow rate

Symbol	Standard dew point (°C)	Flow rate by size Outlet air flow rate (L/min [ANR])			
		3	5	10	20
Nil	–20	25	50	100	200
H	–15	25	50	100	200

Option

Symbol	Contents	Size			
		3	5	10	20
Nil	None (Standard)	●	●	●	●
R	Flow direction (Right → Left)	●	●	●	●
S	With dew point indicator	●	●	Standard equipment	

Drain discharge method

Symbol	Drain discharge method	Size				Note
		3	5	10	20	
Nil	Manual valve	●	●	●	●	—
C	N.C. auto-drain	●	●	●	●	Auto-drains listed on page 17 are attached.
J	Drain guide (Port size 1/4 without valve)	—	—	●	●	—

* For model selection of an auto-drain, refer to the Selection Precautions on page 45.
* Drain discharge method does not need to be selected for N.O. auto-drain type.

Port size

Symbol	Port size	3		5		10		20	
		Nil	H	Nil	H	Nil	H	Nil	H
01	1/8	●	●	●	●	●	●	●	●
02	1/4	●	●	●	●	●	●	●	●

Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

Component equipment

Component equipment	3		5		10		20	
	Nil	H	Nil	H	Nil	H	Nil	H
Micro mist separator with pre-filter (AMH)	AMH150						AMH250	

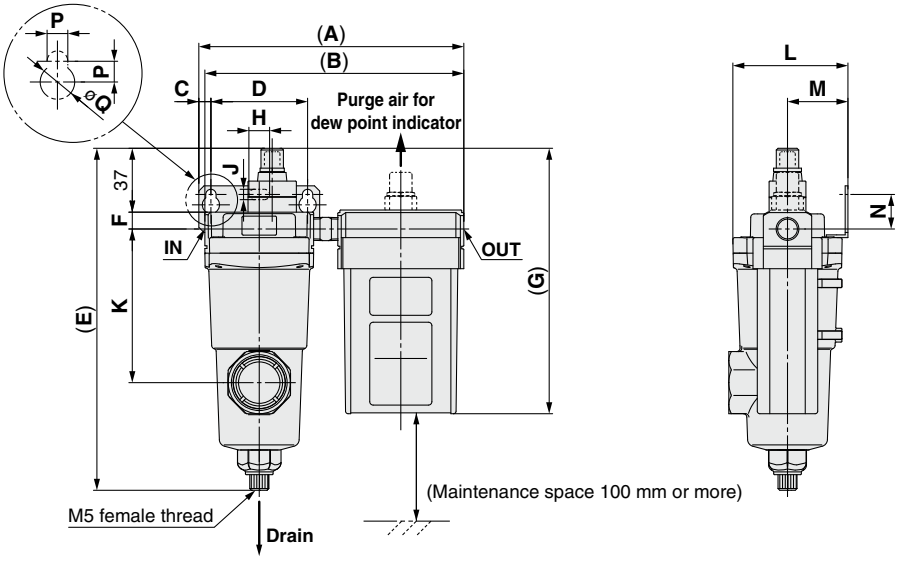
Replacement Parts (Element for micro mist separator with pre-filter)

Description	AMH150	AMH250
Element assembly	AMH-EL150	AMH-EL250

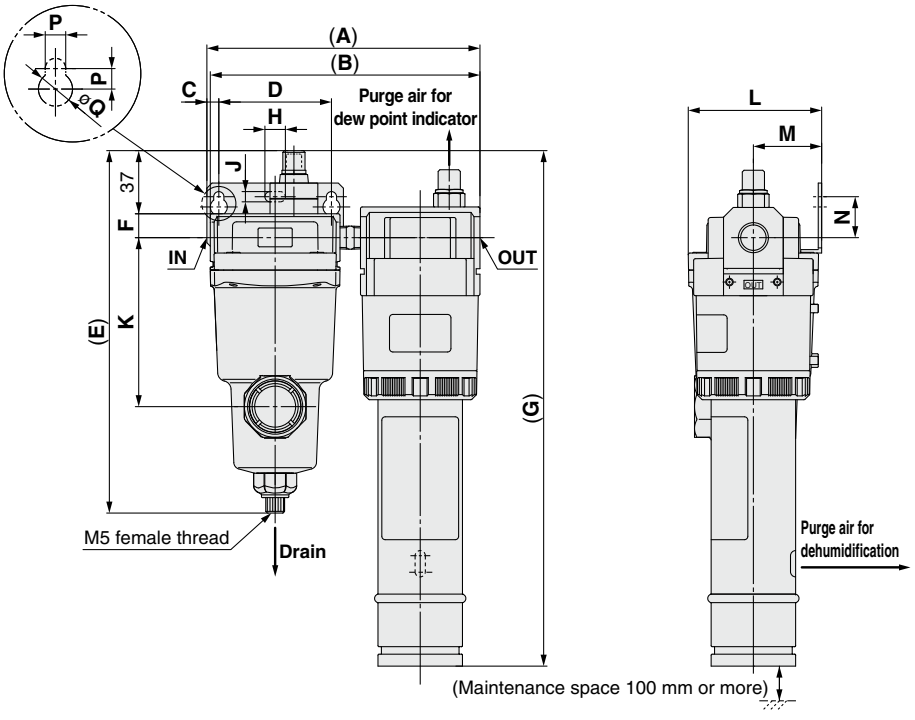
Refer to page 18 for the clogging indication of the element service indicator.

Dimensions

IDG3M2, 5M2, 10M2, 20M2
IDG3HM2, 5HM2, 10HM2, 20HM2

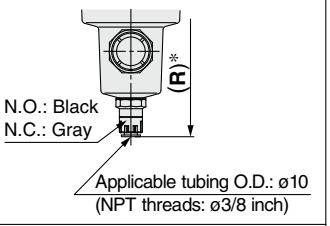


IDG30AM2, 50AM2
IDG30HAM2, 50HAM2
IDG30LAM2, 50LAM2

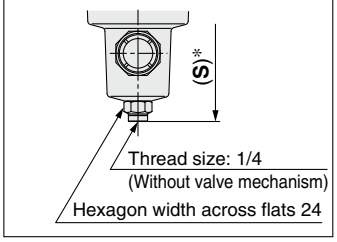


Drain Discharge

With float type auto-drain



With drain guide

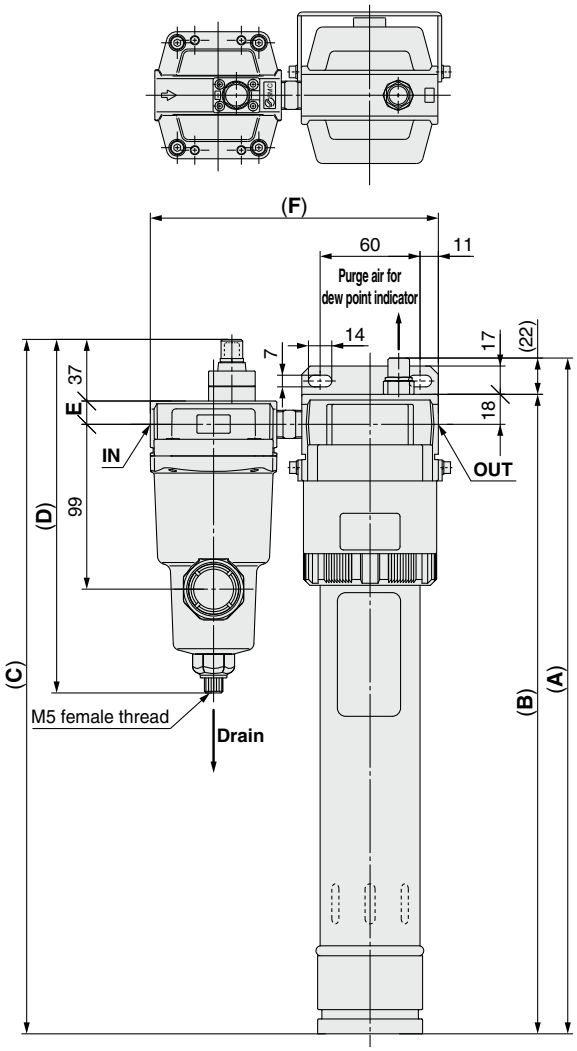


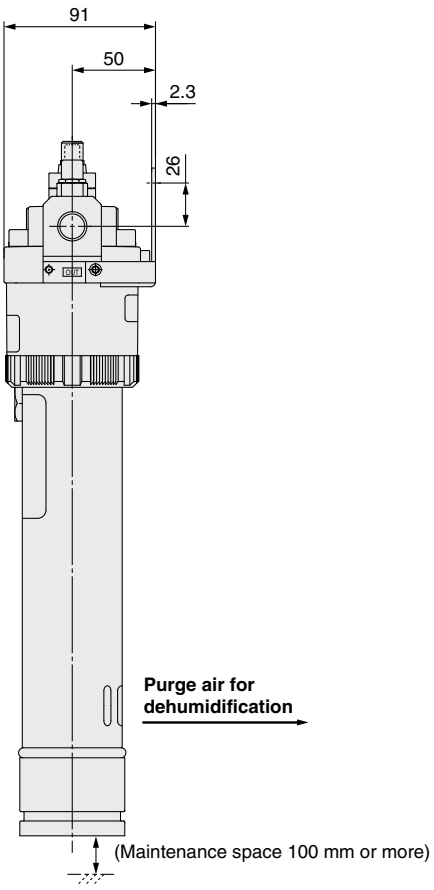
∗ Total length of the separator

Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	With float type auto-drain	With drain guide
																	R	S
IDG3M2, 3HM2, 5M2, 5HM2	1/8, 1/4	150	147	7	56	195	10	154	12	6	89	66.5	35	20	6	10	209	195
IDG10M2, 10HM2	1/4	160	158					198										
IDG20M2, 20HM2	1/4, 3/8	203	201		66	209	14	227			99	78	40	24			223	209
IDG30AM2, 30HAM2		160	158					302										
IDG30LAM2	1/4	147	143		56	195	10	298			89	70	35	20			209	195
IDG50AM2, 50HAM2	3/8	175	172	7.5	80	241	18	345	14	7	127	95	50	28	7	12	255	241
IDG50LAM2	1/4	147	143	7	56	195	10	337	12	6	89	70	35	20	6	10	209	195

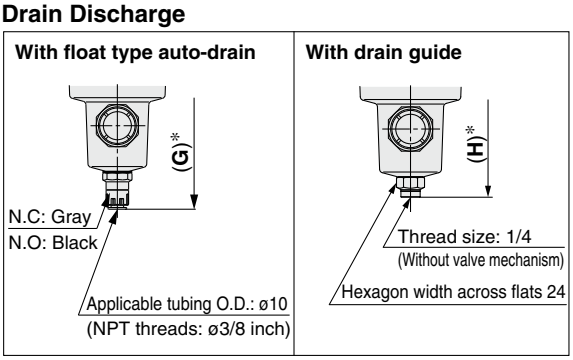
Dimensions

IDG60LAM2
IDG75LAM2
IDG100LAM2, 100SAM2





Drain Discharge



* Total length of the separator

Model	Port size	A	B	C	D	E	F	With float type auto-drain G	With drain guide H
IDG60LAM2	3/8	348	326	363	212	14	170	223	209
IDG75LMA2		418	396	433					
IDG100LAM2, 100SAM2		483	461	498					

Made to Order

Please contact SMC for further details about dimensions, specifications and delivery.

Made to Order

2 With Micro Mist Separator Regulator (Series AWD)

Symbol **-X017**

This can be used when highly purified air is required (supply for air bearings, semiconductor parts blow, etc.). Type V regulator (AR) is modified to the micro mist separator regulator (AWD).

How to Order

Reduced purge IDG□A Series

IDG 30 □ A V3 – □ 03 □ – □ – X017

Size

30
50
60
75
100

With micro mist separator regulator

Option

Symbol	Contents
Nil	None (Standard)
R	Flow direction (Right → Left)

Standard dew point temperature and air flow rate

Symbol	Standard dew point (°C)	Flow rate by size Outlet air flow rate (L/min [ANR])				
		30	**50**	**60**	**75**	**100**
Nil	–20	300	500	—	—	—
H	–15	300	500	—	—	—
L	–40	75	110	170	240	300
S	–60	—	—	50	100	150

Drain discharge method

Symbol	Drain discharge method	Note
Nil	Manual valve	—
C	N.C. auto-drain	Auto-drains listed on page 17 are attached.
D	N.O. auto-drain	
J	Drain guide (Port size 1/4 without valve)	—

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

Port size

Symbol	Port size	30			50			60		75		100	
		Nil	**H**	**L**	**Nil**	**H**	**L**	**L**	**S**	**L**	**S**	**L**	**S**
02	1/4	●	●	●	●	●	●	—	—	—	—	—	—
03	3/8	●	●	●	●	●	●	●	●	●	●	●	●
04	1/2	—	—	—	—	—	—	●	●	●	●	●	●

Component equipment

Component equipment	30			50			60		75		100	
	Nil	**H**	**L**	**Nil**	**H**	**L**	**L**	**S**	**L**	**S**	**L**	**S**
Mist separator	AFM40											
Micro mist separator	AFD40											
Micro mist separator regulator	AWD40											

Replacement Parts (Element for mist separator, micro mist separator, micro mist separator regulator)

Description	AFM40	AFD40	AWD40
Element assembly	AFM40P-060AS	AFD40P-060AS	AFD40P-060AS

How to Order

IDG 10 □ V3 – □ 02 □ – □ – X017

Size

3
5
10
20

With micro mist separator regulator

Option

Symbol	Contents	Size			
		3	5	10	20
Nil	None (Standard)	●	●	●	●
R	Flow direction (Right → Left)	●	●	●	●
S	With dew point indicator	●	●	Standard equipment	

Standard dew point temperature and air flow rate

Symbol	Standard dew point (°C)	Flow rate by size Outlet air flow rate (L/min [ANR])			
		3	5	10	20
Nil	–20	25	50	100	200
H	–15	25	50	100	200

Drain discharge method

Symbol	Drain discharge method	Note
Nil	Manual valve	—
C	N.C. auto-drain	Auto-drains listed on page 17 are attached.
D	N.O. auto-drain	
J	Drain guide (Port size 1/4 without valve)	—

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

Port size

Symbol	Port size	3		5		10		20	
		Nil	H	Nil	H	Nil	H	Nil	H
01	1/8	●	●	●	●	●	●	●	●
02	1/4	●	●	●	●	●	●	●	●

Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

Component equipment

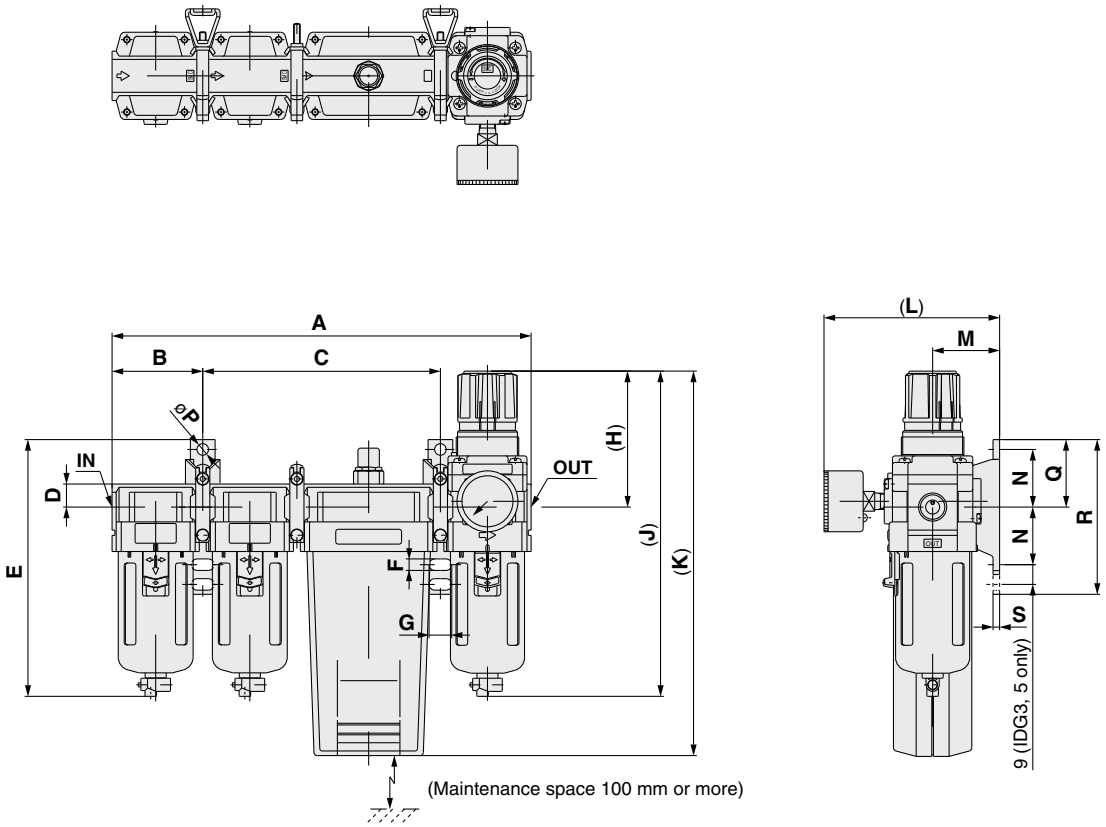
Component equipment	3		5		10		20	
	Nil	H	Nil	H	Nil	H	Nil	H
Mist separator	AFM20				AFM30			
Micro mist separator	AFD20				AFD30			
Micro mist separator regulator	AWD20				AWD30			

Replacement Parts (Element for mist separator, micro mist separator, micro mist separator regulator)

Description	AFM20	AFM30	AFD20	AFD30	AWD20	AWD30
Element assembly	AFM20P-060AS	AFM30P-060AS	AFD20P-060AS	AFD30P-060AS	AFD20P-060AS	AFD30P-060AS

Dimensions

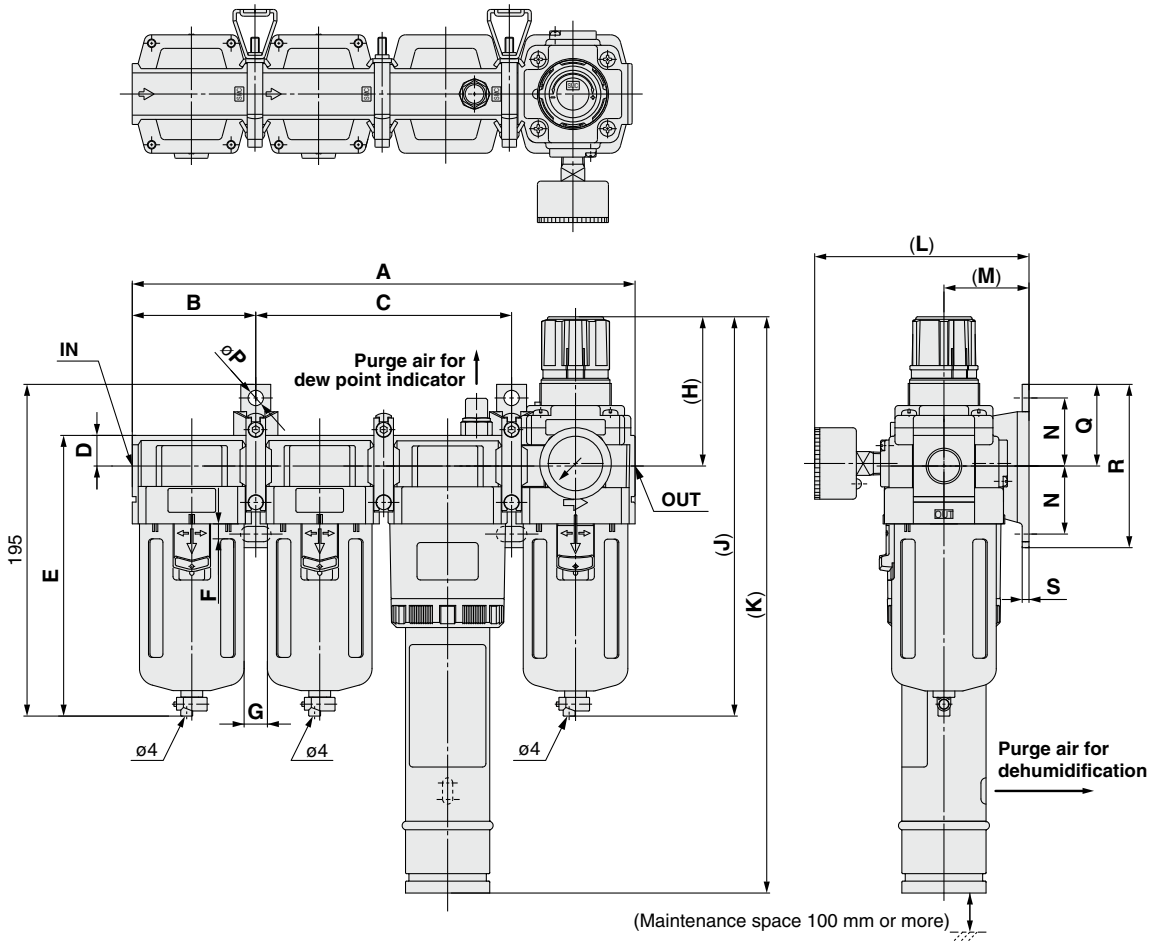
IDG3V3, 5V3, 10V3, 20V3
IDG3HV3, 5HV3, 10HV3, 20HV3



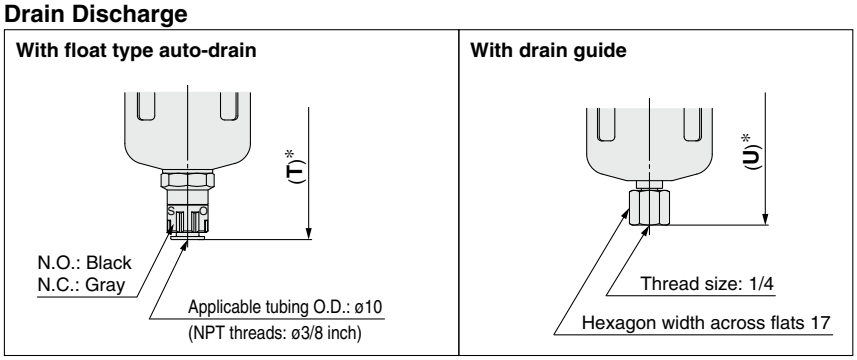
Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	With float type auto-drain	With drain guide
																			T	U
IDG3V3, 3HV3, 5V3, 5HV3	1/8, 1/4	202	41.5	119	10	97	5.5	12	73	173	180	93	30	24	5.5	29	67	3.2	192	—
IDG10V3, 10HV3	1/4, 3/8	254	55	144	14	129	7	14	86	201	237	107	41	35	7	41	82	4	242	208
IDG20V3, 20HV3		284		174							262									

Dimensions

IDG30AV3, 50AV3
IDG30HAV3, 50HAV3
IDG30LAV3, 50LAV3, 60LAV3, 75LAV3, 100LAV3
IDG60SAV3, 75SAV3, 100SAV3



Drain Discharge



* Total length of the separator

Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	With float type auto-drain T	With drain guide U
IDG30AV3, 30HAV3	1/4, 3/8	295	72.5	150	18	165	9	18	92	239	343	126	50	40	9	48	96	4	278	246
IDG50AV3, 50HAV3											382									
IDG60LAV3, 60SAV3	3/8, 1/2	307		162							400									
IDG75LAV3, 75SAV3											470									
IDG100LAV3, 100SAV3											535									

Made to Order

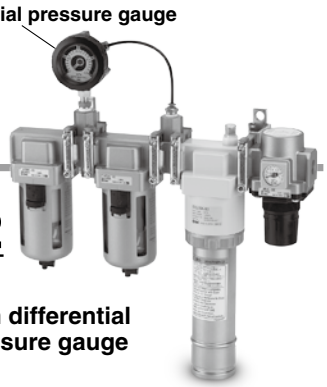
Please contact SMC for further details about dimensions, specifications and delivery.

Made to Order

3 With Differential Pressure Gauge

Symbol **-X032**

The service life of the element service indicator can be controlled with differential pressure.



How to Order

Reduced purge IDG□A Series

IDG 30 □ A V3 – □ 03 □ – □ – X032

Size

30
50
60
75
100

With differential pressure gauge

Option

Symbol	Contents
Nil	None (Standard)
R	Flow direction (Right → Left)

Standard dew point temperature and air flow rate

Symbol	Standard dew point (°C)	Flow rate by size Outlet air flow rate (L/min [ANR])				
		30	50	60	75	100
Nil	–20	300	500	—	—	—
H	–15	300	500	—	—	—
L	–40	75	110	170	240	300
S	–60	—	—	50	100	150

Drain discharge method

Symbol	Drain discharge method	Note
Nil	Manual valve	—
C	N.C. auto-drain	Auto-drains listed on page 17 are attached.
D	N.O. auto-drain	
J	Drain guide (Port size 1/4 without valve)	—

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

Port size

Symbol	Port size	30			50			60		75		100	
		Nil	H	L	Nil	H	L	L	S	L	S	L	S
02	1/4	●	●	●	●	●	●	—	—	—	—	—	—
03	3/8	●	●	●	●	●	●	●	●	●	●	●	●
04	1/2	—	—	—	—	—	—	●	●	●	●	●	●

Component equipment

Component equipment	30			50			60		75		100	
	Nil	H	L	Nil	H	L	L	S	L	S	L	S
Mist separator	AFM40											
Micro mist separator	AFD40											
Differential pressure gauge	GD40-2-01											
Regulator	AR40											

Replacement Parts (Element for mist separator, micro mist separator)

Description	AFM40	AFD40
Element assembly	AFM40P-060AS	AFD40-060AS

How to Order

IDG 10 □ V3 – □ 02 □ – □ – X032

Size

3
5
10
20

With differential pressure gauge

Option

Symbol	Contents	Size			
		3	5	10	20
Nil	None (Standard)	●	●	●	●
R	Flow direction (Right → Left)	●	●	●	●
S	With dew point indicator	●	●	Standard equipment	

Standard dew point temperature and air flow rate

Symbol	Standard dew point (°C)	Flow rate by size Outlet air flow rate (L/min [ANR])			
		3	5	10	20
Nil	–20	25	50	100	200
H	–15	25	50	100	200

Drain discharge method

Symbol	Drain discharge method	Note
Nil	Manual valve	—
C	N.C. auto-drain	Auto-drains listed on page 17 are attached.
D	N.O. auto-drain	
J	Drain guide (Port size 1/4 without valve)	—

∗ For model selection of an auto-drain, refer to the Selection Precautions on page 45.

Port size

Symbol	Port size	3		5		10		20	
		Nil	H	Nil	H	Nil	H	Nil	H
01	1/8	●	●	●	●	●	●	●	●
02	1/4	●	●	●	●	●	●	●	●

Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

Component equipment

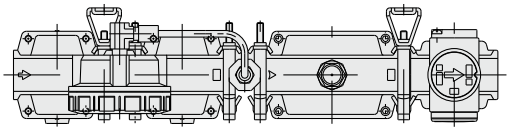
Component equipment	3		5		10		20	
	Nil	H	Nil	H	Nil	H	Nil	H
Mist separator	AFM20				AFM30			
Micro mist separator	AFD20				AFD30			
Differential pressure gauge	GD40-2-01							
Regulator	AR20				AR25			

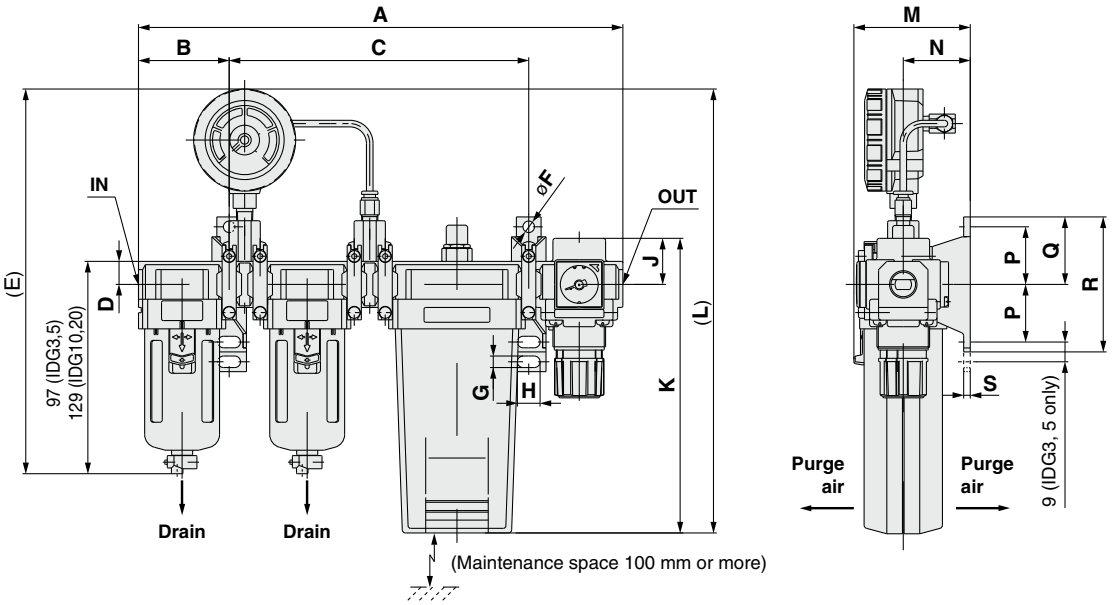
Replacement Parts (Element for mist separator, micro mist separator)

Description	AFM20	AFM30	AFD20	AFD30
Element assembly	AFM20P-060AS	AFM30P-060AS	AFD20P-060AS	AFD30P-060AS

Dimensions

IDG3V3, 5V3, 10V3, 20V3
IDG3HV3, 5HV3, 10HV3, 20HV3

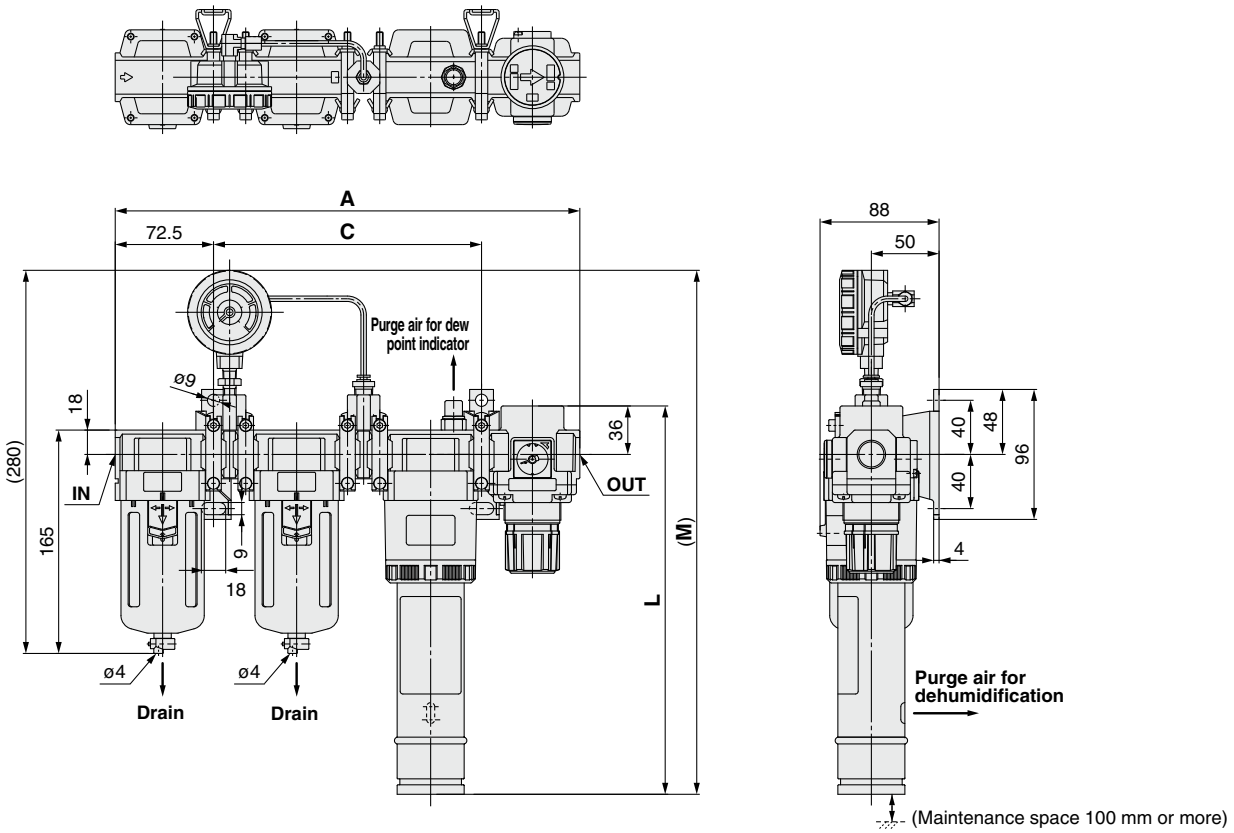




Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
IDG3V3, 3HV3 IDG5V3, 5HV3	238	41.5	155	10	199	5.5	5.5	12	26.5	133.5	219	53	30	24	29	67	3.2	115	—
IDG10V3, 10HV3	292	55	182	14	234	7	7	14	28	179	270	72	41	35	41	82	4	170	136
IDG20V3, 20HV3	322		212							204	295								

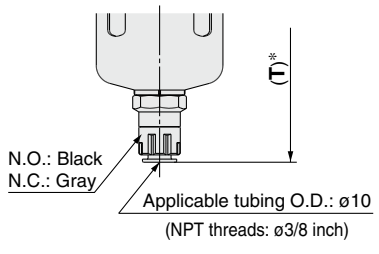
Dimensions

IDG30AV3, 50AV3
IDG30HAV3, 50HAV3
IDG30LAV3, 50LAV3, 60LAV3, 75LAV3, 100LAV3
IDG60SAV3, 75SAV3, 100SAV3

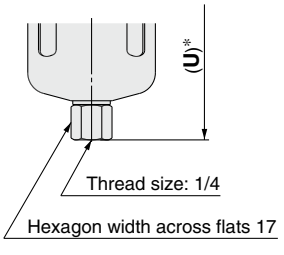


Drain Discharge

With float type auto-drain



With drain guide



∗ Total length of the separator

Model	A	C	L	M	T	U
IDG30AV3, 30HAV3, 30LAV3	343	198	287	384	278	246
IDG50AV3, 50HAV3, 50LAV3			326	423		
IDG60LAV3, 60SAV3	355	210	344	441		
IDG75LAV3, 75SAV3			414	511		
IDG100LAV3, 100SAV3			479	576		

Series IDG□A/IDG
Specific Product Precautions 1

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for Air Preparation Equipment Precautions.

Design

⚠ Warning

1. Depending on the model and operating conditions, the oxygen ratio of the outlet air may drop below the prescribed standard.

Do not use standard dew point –40°C (symbol L) type, standard dew point –60°C (symbol S) type and IDG30A, 50A, 30HA, 50HA for dehumidifying breathing air. Do not use only outlet air (dry air) in a closed room.

2. Do not exert intermittent pressure on this product.

(Example: Frequently operating solenoid valves installed on the primary side) Intermittent pressure damages the product.

⚠ Caution

1. Install a regulator on the outlet side of the membrane air dryer.

If it is installed on the inlet side, dehumidification performance will be reduced.

2. Devise a layout which considers the position of purge air discharge ports.

Purge air is humid air. Devise a layout in which purge air will not cause trouble such as corrosion or malfunction of peripheral equipment.

3. When highly purified air is required

(Supply to air bearings, blowing of semiconductor parts, etc.)
Install a micro mist separator or super mist separator on the outlet side (end terminal) of the membrane air dryer (unit).
Grease is applied inside a regulator used in the unit (Type V).
When highly purified air is required, please either mount the above separator on the outlet side or use a made-to-order product (refer to pages 37 and 38), which is provided with a micro mist separator (Series AWD) instead of a regulator.

4. Time to reach the rated dew point

A certain amount of time is required to achieve the rated dew point after the air begins flowing into the membrane air dryer. Using the times below as a guide, begin operating outlet side equipment after the rated dew point is achieved.

Standard dew point –20°C, –15°C: about 10 min.
Standard dew point –40°C : about 30 min. *
Standard dew point –60°C : about 60 min. *

* This time can be shortened as described below.

1) Provide a valve on the outlet side of the membrane air dryer.
2) Supply air with the valve closed. Only purge air flows into the membrane air dryer.
3) After 15 minutes or more, open the valve and let air flow to the outlet side equipment.

5. Dehumidification performance when inlet air temperature changes

Performance chart shows the case at an inlet air temperature of 25°C. In other cases, refer to "Model Selection" (page 31) for proper selection.

Selection

⚠ Caution

1. Consider the purge air flow rate.

Find the purge air flow rate from the charts and calculate the "required outlet air flow rate + purge air flow rate". The air supply capacity must be at least equal to the calculated flow or the required outlet air flow rate cannot be obtained.

2. Selection for a compressed air line in which a mist separator or micro mist separator is already installed

Verify the operating air flow rate and air pressure, and select a membrane air dryer in accordance with "Model Selection" (page 31). If a membrane air dryer is selected using the port size of the equipment that is already installed as a reference, it could result in the selection of a model that is too small and has an insufficient dehumidification capacity.

3. With fitting for purge air discharge (Option: P)

The dehumidification capacity decreases in proportion to the length of the tube for discharging purge air. Use a tube of the specified size and keep its length within 5 m. For the outlet air atmospheric pressure dew point in relation to the length of the tube for discharging purge air, refer to the table "regarding the outlet air atmospheric dew point in relation to the tube length for purge air discharge" on page 8.

4. Auto-drain selection for the unit type

When the compressor in use is for 2.2 kW {300 L/min [ANR]} or less, use an N.C. auto-drain (symbol: C). If an N.O. auto-drain (symbol: D) is used when the compressor is for 2.2 kW or less, pressure inside the mist separator may not increase and remain in the state of blowing off. Auto-drain with differential pressure type can be used in 2.2 kW or less.

Mounting

⚠ Caution

1. Do not obstruct the purge air discharge ports.

The product may be damaged. And if purge air back pressure becomes too high or purge air stops flowing, dehumidification performance will decrease or may become impossible.

2. Be sure to install a mist separator and micro mist separator or a micro mist separator with pre-filter on the inlet side of the membrane air dryer.

If the inlet air contains oil, performance will be reduced. (A mist separator and micro mist separator or a micro mist separator with pre-filter are already installed on the unit types.)

3. Remove water droplets from the inlet air.

Water droplets in the air can lower performance and cause malfunction.

4. Large quantities of dust (solid foreign matter) are contained in the supply air.

When there are large quantities of dust (solid foreign matter), install an air filter or main line filter to the inlet side of the mist separator in addition to 2 above.

5. Take sufficient care in handling.

There is a danger of damage if dropped.

Specific Product Precautions 2

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for Air Preparation Equipment Precautions.

Piping

⚠ Warning

1. Confirm locking of case and body.

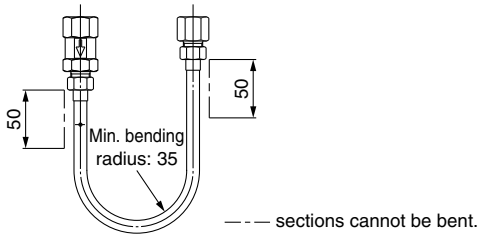
When using in a unit, be sure to set the air pressure to zero before using a mist separator or micro mist separator with modular connections. Also, confirm that the body and case are locked together with a click before starting the flow of compressed air.

2. Confirm tightening of the holder.
(for IDG30A to IDG100, IDG30HA to IDG100H, IDG30LA to IDG100LA, IDG60SA to IDG100SA)

Before starting the flow of compressed air, turn the membrane air dryer's holder in its tightening direction, confirming that it is completely tightened and that the case will not come off.

3. Minimum bending radius (for IDG1)

When installing piping for the membrane air dryer, maintain a minimum bending radius of 35 mm or more. Furthermore, do not bend the sections that are within 50 mm of the ends of the membrane module.



4. With fitting for purge air discharge (Option: P)

The piping of purge air for dehumidification and for the dew point indicator can be combined, but do not combine it with compressed air lines or drain piping or merge the purge air with exhaust air from other equipment. As this can cause damage.

⚠ Caution

1. Use of tools

Hold the upper portion of the body (aluminum die-casted section) with a spanner or adjustable angle wrench. Do not turn it while holding the case section.

2. Drain piping for separators

When installing drain piping for mist separators or micro mist separators, use a tube of the prescribed size and keep the length within 5 meters. Also, be sure that the tube does not rise up or become folded over.

3. Piping materials for low dew point air

If air of a low dew point (–40°C or less) is required, do not use a nylon tube piping and resin fittings (except fluoropolymer) for the outlet side of the membrane air dryer. Due to the nature of the nylon tube, it could be affected by the ambient air, and it might not be possible to achieve the prescribed low dew point at the end of the tube. Therefore, for low dew point air, use a stainless steel or fluoropolymer piping.

⚠ Caution

4. With fitting for purge air discharge (Option: P)
(for IDG60 to IDG100, IDG60H to IDG100H, IDG60LA to IDG100LA, IDG60SA to IDG100SA)

To install piping for dehumidification purge air discharge, attach tubing of the prescribed size to the hose nipple section and then secure it with tubing bands.

Air Supply

⚠ Caution

1. Compressed air supply capacity

An air source that has a supply capacity that is larger than the "required outlet air flow rate (dry air flow rate) + purge air flow rate" is required. Verify the purge air flow rate in "Purge Air Flow-rate Characteristics." (page 9)

2. Chemicals with a negative effect on this product

Chemicals listed in the table below in the compressed air can lower performance and damage the element. Do not use the product in environments including these chemicals.

Category	Chemicals not to be included
Solvents	Acetone, benzene, phenol, toluene, trichloroethylene, xylene, cresol, thinner, aniline, chloroform, chlorobenzene, trichloroethane, ethylbenzene, ethyl alcohol, methyl alcohol, isopropyl alcohol, dioxin, tetrahydrofuran, methylene chloride, cyclohexane, carbon tetrachloride, methyl ketone, ethyl ketone, and others
Acids	Sulfuric acid, nitric acid, hydrochloric acid, acetic acid, lactic acid, chromic acid, and others
Gases	Chlorine gas, sulfurous acid gas, hydrogen chloride, bromine, ozone, ammonia, and others
Oils	Phosphoric-ester hydraulic oil, fuel oil, water soluble cutting oil (alkaline), kerosene, and others
Strong bases	Lithium hydroxide, sodium hydroxide, potassium hydroxide, calcium hydroxide, and others
Others	Anaerobic adhesive, anaerobic sealant, and others

Operating Environment

⚠ Caution

1. Do not use at temperatures (fluid or ambient temperatures) higher than the prescribed operating conditions.

Resin is used in the membrane module, and it can be damaged by operation at high temperatures. Especially when installed immediately after a reciprocating type air compressor, confirm that the fluid temperature does not exceed the range of operating conditions during use.

2. Keep the inlet air temperature lower than the ambient temperature.

If the membrane air dryer body is cooled by the surrounding air, water drops may accumulate inside and reduce its dehumidification capacity.

Series IDG□A/IDG
Specific Product Precautions 3

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for Air Preparation Equipment Precautions.

Maintenance

⚠ Warning

1. Do not remove the orifice (plug) when in a pressurized state.

Never remove the orifice (plug) while under pressure, as it can fly out causing a hazard.

⚠ Caution

1. Check the dehumidification function with the dew point indicator.

Observe the color of the dew point indicator to confirm whether the membrane air dryer is functioning normally.
[When dew point indicator color is blue: Functioning normally]
[When dew point indicator color is pink: Dew point temperature is high. (Outlet air is humid.) Note: Atmospheric pressure dew point approximately –10°C minimum]

Performance state	Color of the dew point indicator	Note
Initial state	White, Pink	There are both white and pink grains.
Normal operating	Blue	
Decrease in performance	White, Pink	Air flow, etc, rate can be outside of the specification.
	Brown, Black	Contained oils can lower the performance.

If humid air flowing in turns the color pink, and then if dry air enters, the color turns back to blue.
It takes about 1 hour from the start of air flow for the dew point indicator color to change.

2. Dew point indicator replacement period

The absorbent is used in the dew point indicator. It absorbs the gasified oil in the compressed air and/or the gaseous elements other than the air, and then may turn brown.
When it turned brown, replace the dew point indicator. Besides, in the event of replacing them periodically, carry out after two-year operation as a guideline. (For the part number of the dew point indicator, refer to pages 10 and 11.)

3. Element replacement period

Refer to the following guide when replacing the elements in the mist separator and in the micro mist separator, or micro mist separator with prefilter that are installed on the inlet side of the membrane air dryer.

1) When two years have passed since installation.
2) When the unit's pressure drop reaches 0.2 MPa, even before the two year period is reached.
3) When the red portion of the element service indicator reaches the upper limit. (With micro mist separator with pre-filter)
[IDG60M to IDG100M, IDG60HM to IDG100HM, IDG60V to IDG100V, IDG60HV to IDG100HV] Note)

Note) For other models as well, they are available with the element service indicator under made-to-order. Refer to pages 33 and 34.

4. Membrane module replacement period

Replace the membrane module when the color of the dew point indicator turns white or pink.
As a guideline, unit should be replaced after approximately 10 years of use (10 hours/day operation). Replace it when the color of the dew point indicator turns white or pink, even if it is within the period.

⚠ Caution

5. Tightening torque for installing the membrane module and the case
(for IDG5, 10, 20, 5H, 10H, 20H)

Use caution not to tighten excessively.
It may result in a breakdown of membrane module, case and mounting screws or insufficient sealing.
(Verify the tightening torque range in the operation manual.)

6. Installing a pressure gauge

A pressure gauge should be installed on the inlet and outlet sides of the membrane air dryer (unit) for the maintenance and inspection purposes.

⚠ 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 catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
2. **Only personnel with appropriate training should operate machinery and equipment.**
   The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
3. **Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
   1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
   2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
   3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
4. **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 catalog.
   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 catalog 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.

Revision history

Edition B
- Added Product Liability Act Precautions.
- Added for 50, 200, 300, 500 L/min [ANR].
- Added Unit Type (Type V).
- Number of pages from 6 to 32.

Edition C
- Added for 10, 600, 750, 1000 L/min [ANR].
- Number of pages from 32 to 40. DT

Edition D
- Added IDG3, 3H for 25 L/min [ANR].
- Added standard dew point -60°C (IDG60S, 70S, 100S).
- Added models with Element Service Indicator, with Micro Mist Separator Regulator (Series AWD) to Made to Order.
- Number of pages from 40 to 52. EO

Edition E
- Added IDG□A.
- Number of pages from 52 to 56. QW

⚠ Safety Instructions Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using.

SMC Corporation
Akihabara UDX 15F,
4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: 03-5207-8249 Fax: 03-5298-5362
http://www.smcworld.com

Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.
D-DN 1st printing DT printing QW 8150SZ Printed in Japan.