



NS30-7D

Membrane Air Dryer
Series IDG



Space Saving Design
Low Dew Point Models (-76°F)
No Heat Generation
No Vibration

Membrane Air Dryer Series *IDG*



Dew point indicator confirms air drying at a glance

(except IDG1)
(optional on IDG3, IDG5, IDG3H, IDG5H)

- Compact
- Lightweight
- Space saving

Also available with fittings for purge air discharge

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

Discharged air noise reduced with built-in silencer

(Except IDG1, IDG3, IDG3H, IDG5, IDG5H, IDG30, IDG30H, IDG30L, IDG50, IDG50H, IDG50L)



Dew point indicator

Purge air discharge fitting for dew point indicator



Purge air discharge fitting for dehumidification

Environmentally friendly (non-freon)

Power supply not required

A power supply is completely unnecessary. Wiring labor is not required and there is no need to consider electrical standards, etc.

No vibration or heat discharge

There are no mechanical moving parts as in the case of refrigeration equipment.

Compatible with low dew points

Outlet air atmospheric pressure dew point -40°C (-40°F)
(IDG30L, IDG50L, IDG60L)
IDG75L, IDG100L

Outlet air atmospheric pressure dew point -60°C (-76°F)
(IDG60S, IDG75S, IDG100S)

Unit style Integrated pre-filter and regulator



M type	Mist separator + Micro mist separator + IDG
	Micro mist separator with pre-filter + IDG
V type	Mist separator + Micro mist separator + IDG + Regulator
	Micro mist separator with pre-filter + IDG + Regulator

IDG1

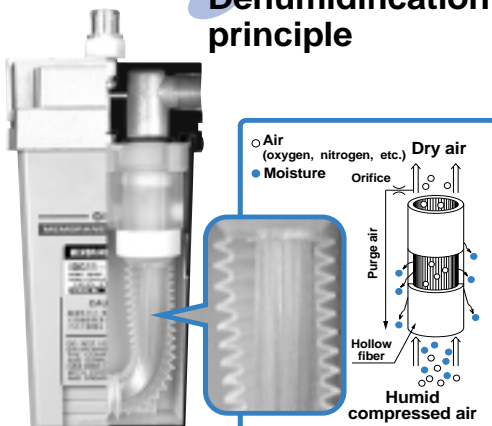
Flexible piping is possible

Low flow rate type tube configuration

Outlet air flow rate: 10 /min (0.35SCFM) (ANR)



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.

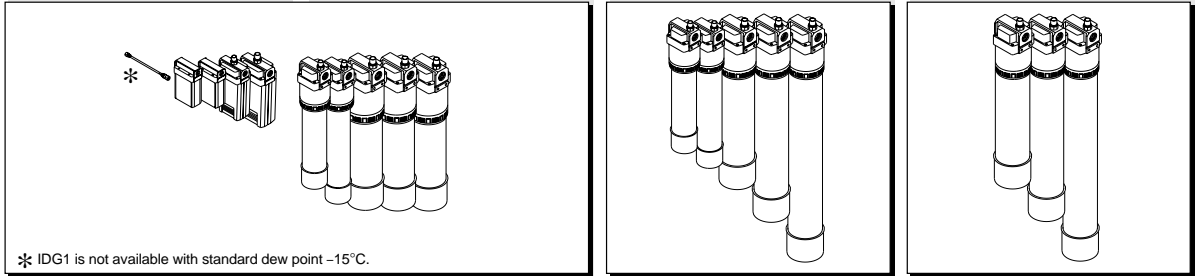
Applications

- Machine tools (air bearings, lasers, etc.)
- Precision measuring equipment (3-D measuring machines)
- Semiconductor manufacturing equipment
Semiconductor inspection equipment
- Dental equipment
- Chemical analysis equipment
- Ozonizers, Hydrogen gas generating equipment
- Packaging machines, Paper making machines, Food processing machines
- Printed circuit board IC mounting machines
- Fine particle drying, Transfer equipment
- Electrostatic and high grade coating
- Drying and cleaning of precision parts
- Condensation prevention in control panels
- General pneumatic equipment and pneumatic tools

Series Variations

Compatible with a wide range of flow rates (10 to 1000 /min (0.35 to 35.3SCFM) (ANR)) and dew point temperatures (atmospheric pressure dew point: -15°C to -60°C) (5°F to -76°F)
 IDG3, IDG3H: Outlet air flow rate 25 /min (0.88SCFM) (ANR) and IDG60S, IDG75S, IDG100S: Standard dew point -60°C (-76°F) types introduced

Standard dew point: -20°C (-4°F) <small>Note)</small> Standard purge <small>Note) Standard purge rate: 20%</small>	Standard dew point: -15°C (5°F) <small>Note)</small> Low purge <small>Note) Standard purge rate: 10%</small>	Standard dew point: -40°C (-40°F) <small>Note)</small> Low dew point <small>Note) Standard purge rate: 25%</small>	Standard dew point: -60°C (-76°F) <small>Note)</small> Low dew point <small>Note) Standard purge rate: 35%</small>
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* IDG1 is not available with standard dew point -15°C.

Single Style	Series	Outlet air flow rate /min ANR (SCFM)	Series	Outlet air flow rate /min ANR (SCFM)	Series	Outlet air flow rate /min ANR (SCFM)	Series	Outlet air flow rate /min ANR
	IDG1	10 (0.35)		IDG3H	25 (0.88)			
IDG3	25 (0.88)		IDG5H	50 (1.77)				
IDG5	50 (1.77)		IDG10H	100 (3.53)				
IDG10	100 (3.53)		IDG20H	200 (7.06)				
IDG20	200 (7.06)		IDG30H	300 (10.59)	IDG30L	75 (2.65)		
IDG30	300 (10.59)		IDG50H	500 (17.66)	IDG50L	110 (3.88)		
IDG50	500 (17.66)		IDG60H	600 (21.19)	IDG60L	170 (6.00)	IDG60S	50 (1.77)
IDG60	600 (21.19)		IDG75H	750 (26.49)	IDG75L	240 (8.48)	IDG75S	100 (3.53)
IDG75	750 (26.49)		IDG100H	1000 (35.31)	IDG100L	300 (10.59)	IDG100S	150 (5.30)
IDG100	1000 (35.31)							

M type
 A mist separator, micro mist separator, or micro mist separator with pre-filter combined with the single style

Unit Style	Series	Outlet air flow rate /min ANR (SCFM)	Series	Outlet air flow rate /min ANR (SCFM)	Series	Outlet air flow rate /min ANR (SCFM)	Series	Outlet air flow rate /min ANR
IDG3M	25 (0.88)		IDG3HM	25 (0.88)				
IDG5M	50 (1.77)		IDG5HM	50 (1.77)				
IDG10M	100 (3.53)		IDG10HM	100 (3.53)				
IDG20M	200 (7.06)		IDG20HM	200 (7.06)				
IDG30M	300 (10.59)		IDG30HM	300 (10.59)	IDG30LM	75 (2.65)		
IDG50M	500 (17.66)		IDG50HM	500 (17.66)	IDG50LM	110 (3.88)		
IDG60M	600 (21.19)		IDG60HM	600 (21.19)	IDG60LM	170 (6.00)	IDG60SM	50 (1.77)
IDG75M	750 (26.49)		IDG75HM	750 (26.49)	IDG75LM	240 (8.48)	IDG75SM	100 (3.53)
IDG100M	1000 (35.31)		IDG100HM	1000 (35.31)	IDG100LM	300 (10.59)	IDG100SM	150 (5.30)

V type
 A regulator combined with the M type

Unit Style	Series	Outlet air flow rate /min ANR (SCFM)	Series	Outlet air flow rate /min ANR (SCFM)	Series	Outlet air flow rate /min ANR (SCFM)	Series	Outlet air flow rate /min ANR
IDG3V	25 (0.88)		IDG3HV	25 (0.88)				
IDG5V	50 (1.77)		IDG5HV	50 (1.77)				
IDG10V	100 (3.53)		IDG10HV	100 (3.53)				
IDG20V	200 (7.06)		IDG20HV	200 (7.06)				
IDG30V	300 (10.59)		IDG30HV	300 (10.59)	IDG30LV	75 (2.65)		
IDG50V	500 (17.66)		IDG50HV	500 (17.66)	IDG50LV	110 (3.88)		
IDG60V	600 (21.19)		IDG60HV	600 (21.19)	IDG60LV	170 (6.00)	IDG60SV	50 (1.77)
IDG75V	750 (26.49)		IDG75HV	750 (26.49)	IDG75LV	240 (8.48)	IDG75SV	100 (3.53)
IDG100V	1000 (35.31)		IDG100HV	1000 (35.31)	IDG100LV	300 (10.59)	IDG100SV	150 (5.30)

Note) Standard dew point: Outlet air atmospheric pressure dew point under standard performance conditions
 Standard purge rate: Ratio of purge air flow rate to inlet air flow rate under standard performance conditions
 Outlet air flow rate: Value under standard performance conditions

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Series IDG

Membrane Air Dryer Unit

Single Style/Standard Dew Point -20°C (-4°F) Specifications

How to Order

1/min = 0.0353SCFM

IDG 10 — **03** —

Flow rate by size

Size	Outlet air flow rate /min (ANR) Purge air flow rate
1	10/2.5
3	25/6
5	50/12
10	100/25
20	200/50
30	300/75
50	500/125
60	600/125
75	750/150
100	1000/190

Thread type

Symbol	Thread type
Nil	Rc
N	NPT
F	G

Optional specifications

Symbol	Contents	Size									
		1	3	5	10	20	30	50	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 case of two or more options, indicate them in alphabetical order.

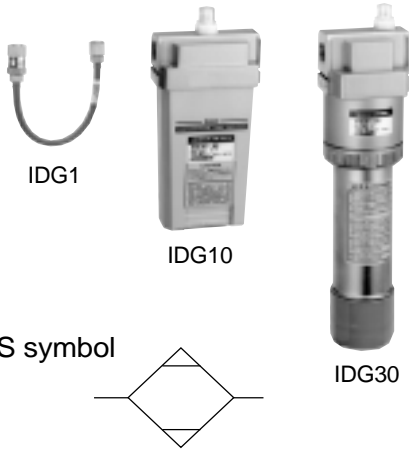
Accessories

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 below is included as an accessory.

Port size

Symbol	Bore	Size									
		1	3	5	10	20	30	50	60	75	100
01	1/8	—	●	●	—	—	—	—	—	—	—
02	1/4	●	●	●	●	●	●	—	—	—	—
03	3/8	—	—	—	●	●	●	●	—	—	—
04	1/2	—	—	—	—	—	—	—	●	●	●



Standard Specifications/Single Style (Standard Dew Point -20°C [-4°F])

Model		Standard dew point -20°C (-4°F)									
		IDG1	IDG3	IDG5	IDG10	IDG20	IDG30	IDG50	IDG60	IDG75	IDG100
Range of operating conditions	Fluid	Compressed air									
	Inlet air pressure	0.3 to 0.85MPa (43.5 to 123psi)					0.3 to 1.0MPa (43.5 to 145psi)				
	Inlet air temperature Note 1)	-5 to 55°C (23 to 131°F)					-5 to 50°C (23 to 122°F)				
	Ambient temperature	-5 to 55°C (23 to 131°F)					-5 to 50°C (23 to 122°F)				
Standard performance conditions	Outlet air atmospheric pressure dew point	-20°C (-4°F)									
	Inlet air flow rate /min (ANR) (SCFM) Note 2)	12.5 (0.44)	31 (1.09)	62 (2.19)	125 (4.14)	250 (8.82)	375 (13.24)	625 (22.07)	725 (25.60)	900 (31.78)	1190 (42.02)
	Outlet air flow rate /min (ANR) (SCFM)	10 (0.35)	25 (0.88)	50 (1.77)	100 (3.53)	200 (7.06)	300 (10.59)	500 (17.66)	600 (21.19)	750 (26.49)	1000 (35.31)
	Purge air flow rate /min (ANR) (SCFM) Note 3)	2.5 (0.09)	6 (0.21)	12 (0.42)	25 (0.88)	50 (1.77)	75 (2.65)	125 (4.41)	125 (4.41)	150 (5.30)	190 (6.70)
Standard performance conditions	Inlet air pressure	0.7MPa (101.5psi)									
	Inlet air temperature	25°C (77°F)									
	Inlet air saturation temperature	25°C (77°F)									
	Ambient temperature	25°C (77°F)									
Dew point indicator purge air flow rate		—			1/min (ANR) (inlet air pressure at 0.7MPa)						
Port size (nominal size B)		1/4	1/8, 1/4		1/4, 3/8			3/8, 1/2		1/2	
Weight (with bracket)		0.11	0.25 (0.31)	0.43 (0.51)	0.66 (0.76)	0.74 (0.87)	0.77 (0.90)	1.50 (1.65)	1.50 (1.65)	1.55 (1.70)	

Bracket assembly (accessory) part nos.

Part no.	Applicable models
BM59	IDG3, 5
BM61	IDG10
BM63	IDG20
BM64	IDG30, 50
BM65	IDG60, 75, 100

* With cap bolts and spring washers

Note 1) With no freezing.

Note 2) ANR indicates the flow rate converted to the value for 20°C (68°F) at atmospheric pressure.

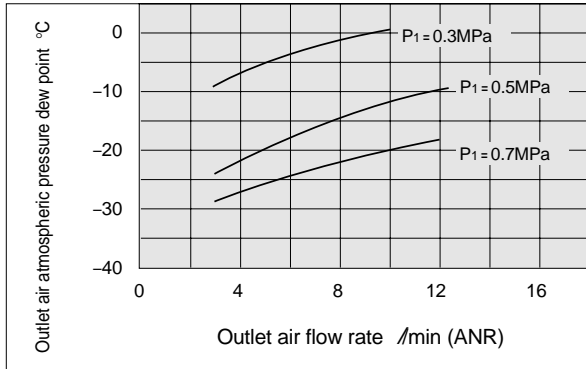
Note 3) Includes dew point indicator purge air flow rate of 1/min (ANR) (inlet air pressure at 0.7MPa) (except IDG1, IDG3 (0.035SCFM) (101.5 psi) and IDG5).

Conditions: Inlet air temperature 25°C (77°F) (saturated air), Ambient temperature 25°C (77°F), P₁: Inlet air pressure, Tubing for purge air discharge (Option: P): None

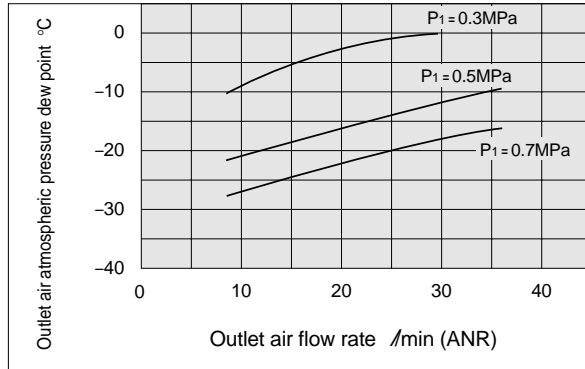
Note: Refer to page 3 when equipped with fitting for purge air discharge (Option: P).

Performance Charts

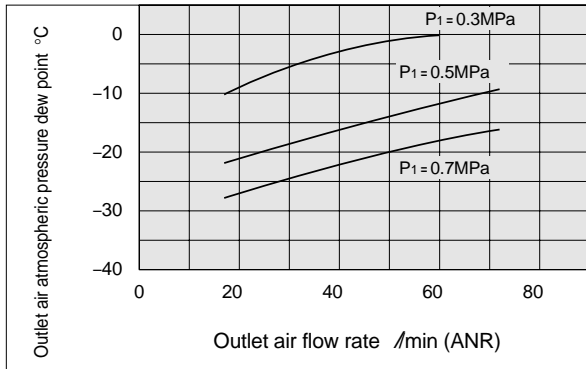
IDG1



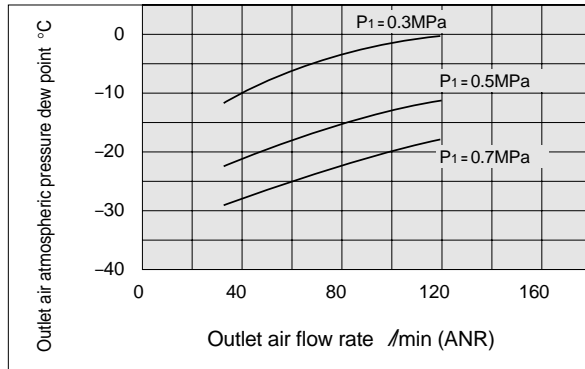
IDG3



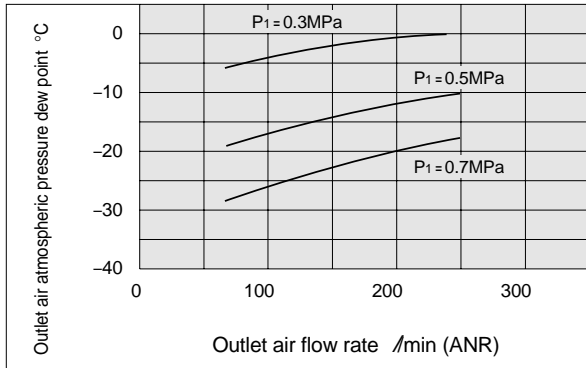
IDG5



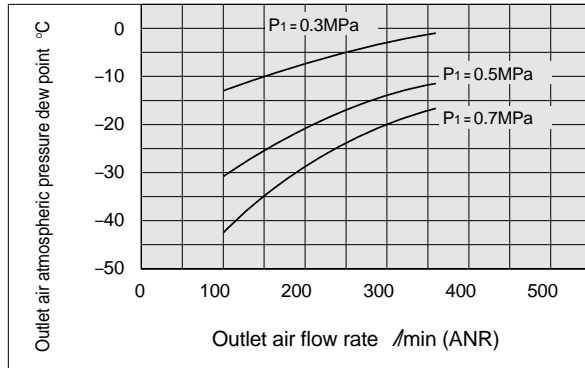
IDG10



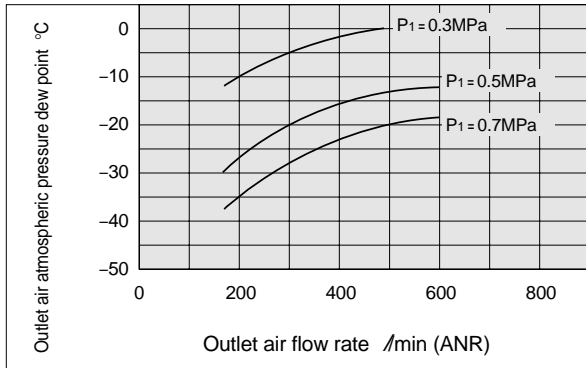
IDG20



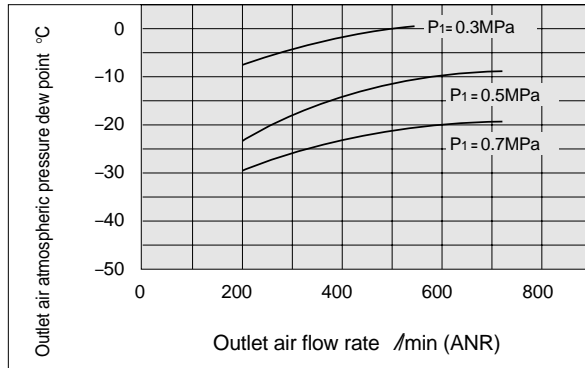
IDG30



IDG50



IDG60

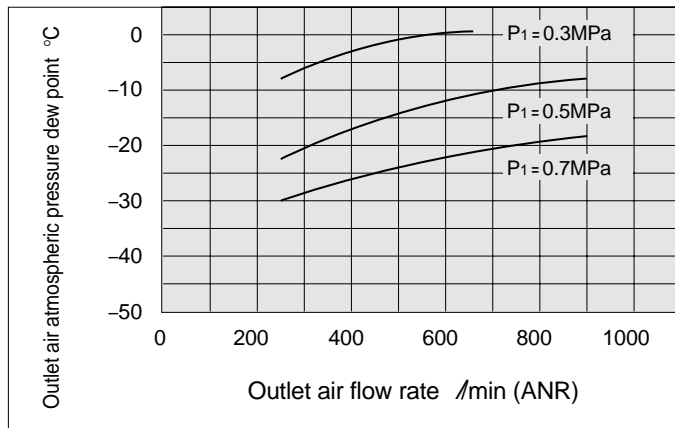


Note: °F = (1.8 × °C) + 32; 1MPa = 145psi; 1 /min = 0.0353SCFM

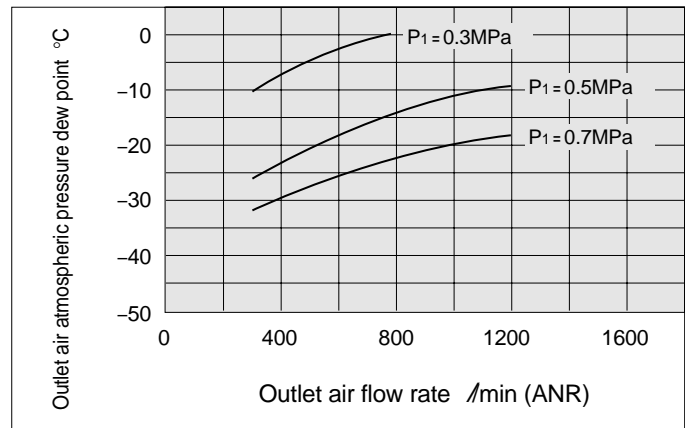
Performance Charts

Conditions: Inlet air temperature 25°C (77°F) (saturated air), Ambient temperature 25°C (77°F), P1: Inlet air pressure

IDG75



IDG100



With fitting for purge air discharge (Option: P)

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

Outlet air atmospheric pressure dew point by purge air discharge tube length °C

Tube length	Model	IDG30	IDG50
0m (0ft)		-20°C (-4°F)	
1m (3.3ft)		-19 °C (-2.2°F)	
3m (9.8ft)		-17 °C (1.4°F)	
5m (16ft)		-16 °C (3.2°F)	

Note) In case of models other than the above, the outlet air atmospheric pressure dew point will increase by 1°C (34°F) or less for tubing lengths of 5m (16ft) or less.

Note: °F = (1.8 x °C) + 32
 1MPa = 145psi
 1 l/min = 0.0353SCFM

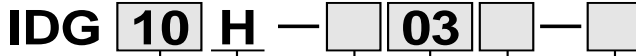
■ Conditions

- Inlet air temperature: 25°C (77°F) (saturated)
- Ambient temperature: 25°C (77°F)
- Inlet air pressure: 0.7MPa (101.5psi)
- Outlet air flow rate: Flow rate for standard performance conditions (Refer to page 1.)
- Tubing size (O.D. x I.D.) mm: ø12 x ø9

Single Style/Standard Dew Point -15°C (5°F) Specifications

How to Order

1 /min = 0.035SCFM



Flow rate by size

Size	Outlet air flow rate Purge air flow rate	/min (ANR)
3	25/3	
5	50/6	
10	100/11	
20	200/22	
30	300/35	
50	500/60	
60	600/65	
75	750/80	
100	1000/110	

Standard dew point temperature

Symbol	Standard dew point °C
H	-15

Thread type

Nil	Rc
N	NPT
F	G

Optional specifications

Symbol	Contents	Size									
		3	5	10	20	30	50	60	75	100	
Nil	None (standard)	●	●	●	●	●	●	●	●	●	
P	With fitting for purge air discharge	●	●	●	●	●	●	●	●	●	
R	Flow direction (right→left)	●	●	●	●	●	●	●	●	●	
S	With dew point indicator	●	●								

Note) In case of two or more options, indicate them in alphabetical order.

Accessories

Nil	None (standard)
B	With bracket

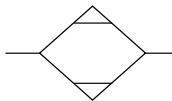
Note) When symbol B is indicated, a bracket assembly with a part number shown in the table below is included as an accessory.

Port size

Symbol	Bore	Size									
		3	5	10	20	30	50	60	75	100	
01	1/8	●	●	—	—	—	—	—	—	—	
02	1/4	●	●	●	●	—	—	—	—	—	
03	3/8	—	—	●	●	●	●	—	—	—	
04	1/2	—	—	—	—	—	—	●	●	●	



JIS symbol



Bracket assembly (accessory) part nos.

Part no.	Applicable models
BM59	IDG3H, 5H
BM61	IDG10H
BM63	IDG20H
BM64	IDG30H, 50H
BM65	IDG60H, 75H, 100H

* With cap bolts and spring washers

Standard Specifications/Single Style (Standard Dew Point -15°C [5°F])

Model		Standard dew point -15°C (5°F)								
		IDG3H	IDG5H	IDG10H	IDG20H	IDG30H	IDG50H	IDG60H	IDG75H	IDG100H
Range of operating conditions	Fluid	Compressed air								
	Inlet air pressure	0.3 to 0.85MPa (43.5 to 145psi)				0.3 to 1.0MPa (43.5 to 145psi)				
	Inlet air temperature ^{Note 1)}	-5 to 55°C (23 to 131°F)				-5 to 50°C (23 to 131°F)				
	Ambient temperature	-5 to 55°C (23 to 131°F)				-5 to 50°C (23 to 131°F)				
Standard performance	Outlet air atmospheric pressure dew point	-15°C (5°F)								
	Inlet air flow rate /min (ANR) (SCFM) ^{Note 2)}	28 (0.99)	56 (1.98)	111 (3.92)	222 (7.84)	335 (11.83)	560 (19.77)	665 (23.48)	830 (29.31)	1110 (39.20)
Standard performance conditions	Outlet air flow rate /min (ANR) (SCFM)	25 (0.88)	50 (1.77)	100 (3.53)	200 (7.06)	300 (10.59)	500 (17.66)	600 (21.19)	750 (26.49)	1000 (35.31)
	Purge air flow rate /min (ANR) (SCFM) ^{Note 3)}	3 (0.11)	6 (0.21)	11 (0.39)	22 (0.78)	35 (1.24)	60 (2.12)	65 (2.30)	80 (2.83)	110 (3.88)
	Inlet air pressure	0.7MPa (101.5psi)								
	Inlet air temperature	25°C (77°F)								
	Inlet air saturation temperature	25°C (77°F)								
	Ambient temperature	25°C (77°F)								
	Dew point indicator purge air flow rate	—		1 /min (ANR) (inlet air pressure at 0.7MPa(0.035SCFM @ 101.5psi))						
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)		0.77 (0.87)		1.50 (1.65)	
									1.55 (1.70)	

Note 1) With no freezing.

Note 2) ANR indicates the flow rate converted to the value for 20°C (68°F) at atmospheric pressure.

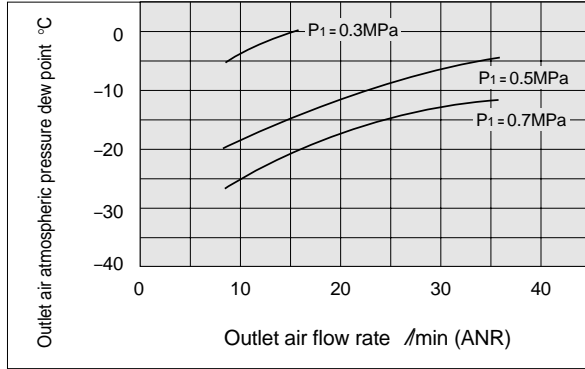
Note 3) Includes dew point indicator purge air flow rate of 1 /min (ANR) (0.035 SCFM) (inlet air pressure at 0.7MPa (101.5psi)) (except IDG3H and IDG5H).

Conditions: Inlet air temperature 25°C (saturated air), Ambient temperature 25°C, P₁: Inlet air pressure, Purge air discharge tube (Option: P): None

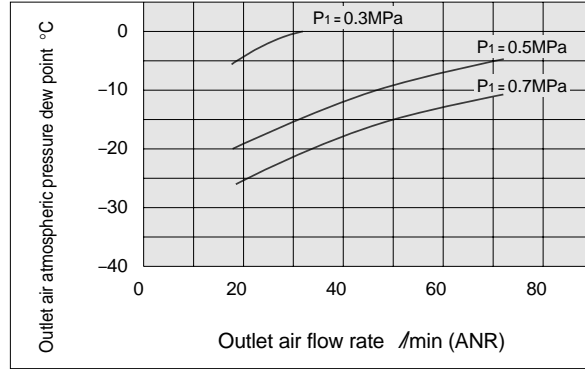
Note: When equipped with fitting for purge air discharge (Option: P), the outlet air atmospheric pressure dew point will rise by 1°C or less for tubing lengths of 5m or less.

Performance Charts

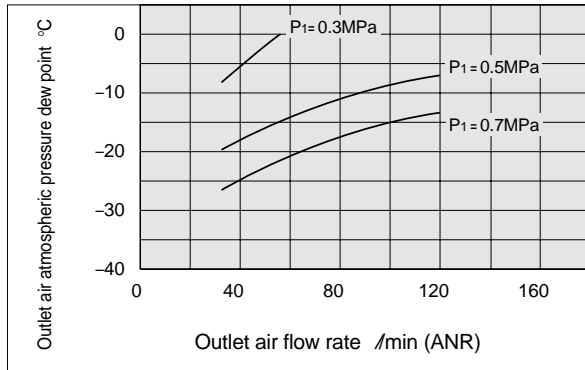
IDG3H



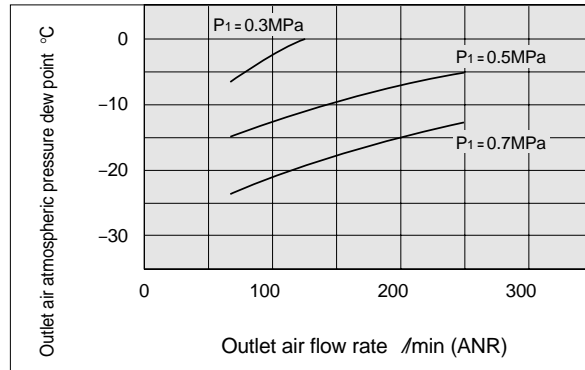
IDG5H



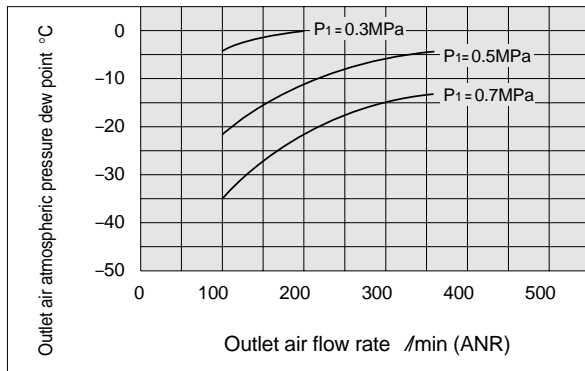
IDG10H



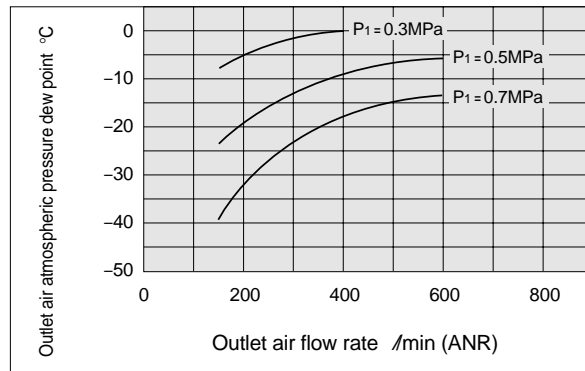
IDG20H



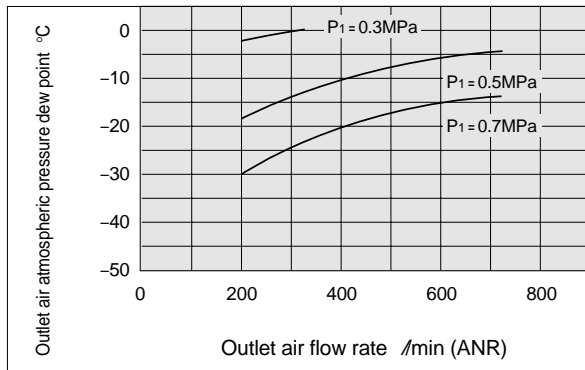
IDG30H



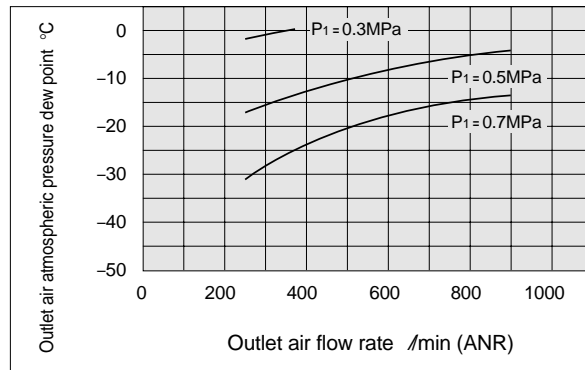
IDG50H



IDG60H



IDG75H



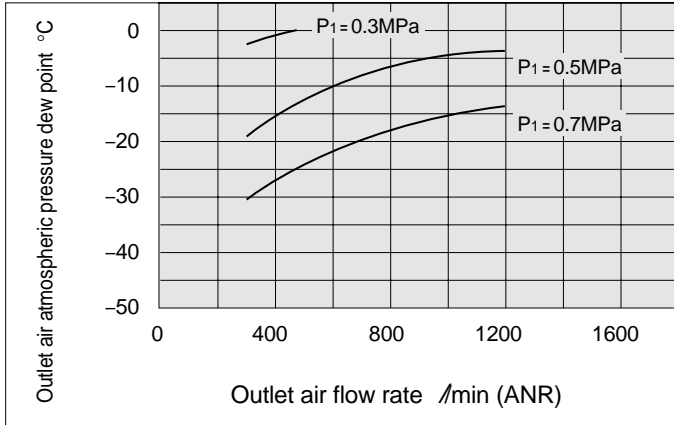
Note: °F = (1.8 x °C) + 32; 1MPa = 145psi; 1/min = 0.0353SCFM

Conditions: Inlet air temperature 25°C (saturated air), Ambient temperature 25°C, P₁: Inlet air pressure, Purge air discharge tube (Option: P): None

Note: When equipped with fitting for purge air discharge (Option: P), the outlet air atmospheric pressure dew point will rise by 1°C or less for tubing lengths of 5m or less.

Performance Charts

IDG100H



Note: °F = (1.8 x °C) + 32; 1MPa = 145psi; 1 l/min = 0.0353SCFM

Single Style/Standard Dew Point -40°C (-40°F) Specifications

How to Order

1 /min = 0.035SCFM

IDG 50 L — [] 03 [] — []

Flow rate by size

Size	Outlet air flow rate /min (ANR)	Purge air flow rate /min (ANR)
30	75/25	
50	110/40	
60	170/57	
75	240/80	
100	300/100	

Standard dew point temperature

Symbol	Standard dew point °C
L	-40

Thread type

Symbol	Thread type
Nil	Rc
N	NPT
F	G

Port size

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

Optional specifications

Symbol	Specification
Nil	None (standard)
P	With purge air discharge fitting
R	Flow direction (right→left)

Note) In case of two or more options, indicate them in alphabetical order.

Accessories

Symbol	Accessory
Nil	None (standard)
B	With bracket

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

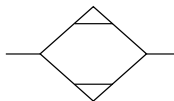


IDG30L



IDG60L

JIS symbol



Bracket assembly (accessory) part nos.

Part no.	Applicable models
BM64	IDG30L, 50L
BM65	IDG60L, 75L, 100L

* With cap bolts and spring washers

Standard Specifications/Single Style

Model		Standard dew point -40°C (-40°F)				
		IDG30L	IDG50L	IDG60L	IDG75L	IDG100L
Range of operating conditions	Fluid	Compressed air				
	Inlet air pressure	0.3 to 1.0MPa (43.5 to 145psi)				
	Inlet air temperature ^{Note 1)}	-5 to 50°C (23 to 122°F)				
	Ambient temperature	-5 to 50°C (23 to 122°F)				
Standard performance	Outlet air atmospheric pressure dew point	-40°C (-40°F)				
	Inlet air flow rate /min (ANR) [(SCFM)] ^{Note 2)}	100 (3.5)	150 (5.3)	227 (8.0)	320 (11.3)	400 (14.1)
Standard performance conditions	Outlet air flow rate /min (ANR) [(SCFM)]	75 (2.6)	110 (3.9)	170 (6.0)	240 (8.5)	300 (10.6)
	Purge air flow rate /min (ANR) [(SCFM)] ^{Note 3)}	25 (0.9)	40 (1.4)	57 (2.0)	80 (2.8)	100 (3.5)
	Inlet air pressure	0.7MPa (101.5psi)				
	Inlet air temperature	25°C (77°F)				
	Inlet air saturation temperature	25°C (77°F)				
	Ambient temperature	25°C (77°F)				
	Dew point indicator purge air flow rate	1 /min (ANR) {inlet air pressure at 0.7MPa (0.035SCFM 101.5psi)}				
Port size (nominal size B)		1/4, 3/8		3/8, 1/2		
Weight kg [lb] (with bracket)		0.74 (0.87) [1.63 (1.92)]	0.77 (0.90) [1.70 (1.98)]	1.50 (1.65) [3.31 (3.64)]	1.65 (1.80) [3.64 (3.97)]	1.80 (1.95) [3.97 (4.30)]

Note 1) With no freezing.

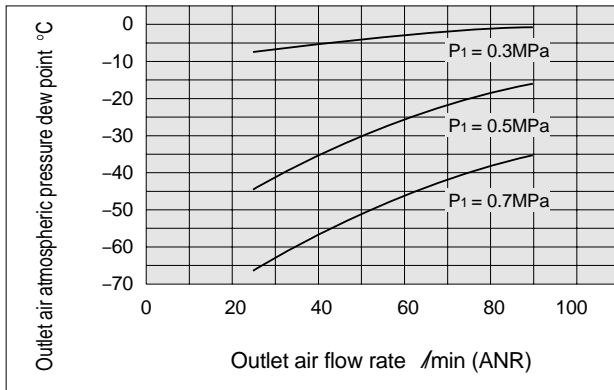
Note 2) ANR indicates the flow rate converted to the value for 20°C (68°F) at atmospheric pressure.

Note 3) Includes dew point indicator purge air flow rate of 1 /min (ANR) (0.035SCFM) (inlet air pressure at 0.7MPa) (101.5psi).

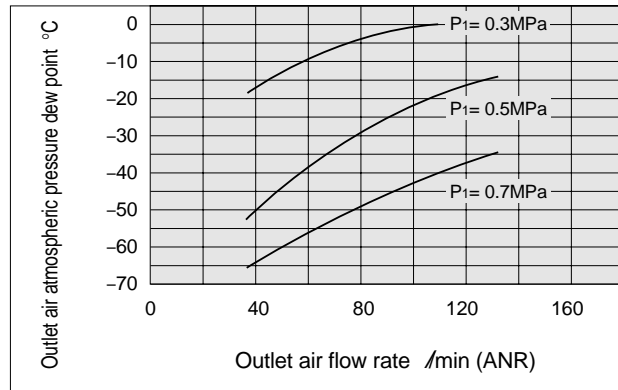
Performance Charts

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

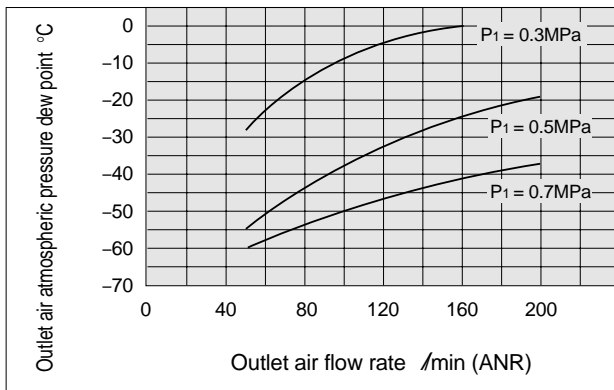
IDG30L



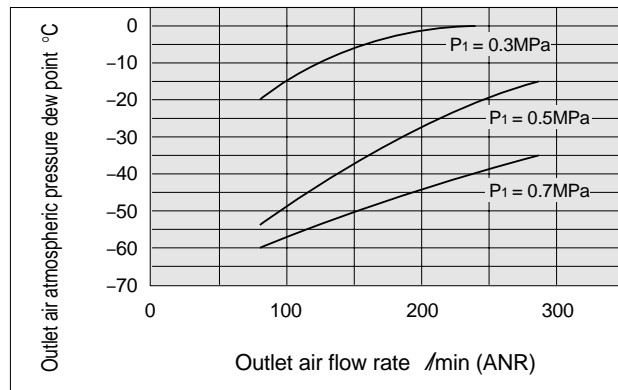
IDG50L



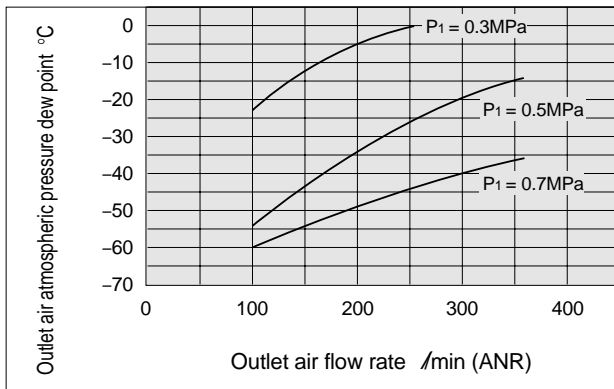
IDG60L



IDG75L



IDG100L



Note: °F = (°C x 1.8) + 32
 1MPa = 145psi
 1 l/min = 0.0353SCFM
 1m = 0.3048

With fitting for purge air discharge (Option: P)

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

Outlet air atmospheric pressure dew point by purge air discharge tube length °C

Tube length	Model	IDG30L	IDG50L
0m		-40°C (-40°F)	
1m		-39°C (-38°F)	
3m		-38°C (-36°F)	
5m			

Note) In case of models other than the above, the outlet air atmospheric pressure dew point will increase by 1°C or less for tubing lengths of 5m or less.

Conditions

- Inlet air temperature: 25°C (saturated)
- Ambient temperature: 25°C
- Inlet air pressure: 0.7MPa
- Outlet air flow rate: Flow rate for standard performance conditions (Refer to page 9.)
- Tubing size (O.D. x I.D.) mm: ø12 x ø9

Single Style/Standard Dew Point -60°C (-76°F) Specifications

How to Order

1 /min = 0.0353SCFM

IDG 60 S — 03 B —

Flow rate by size

Size	Outlet air flow rate /min (ANR) Purge air flow rate
60	50/27
75	100/54
100	150/85

Standard dew point temperature

Symbol	Standard dew point °C
S	-60 (-76°F)

Optional specifications

Nil	None (standard)
P	With purge air discharge fitting
R	Flow direction (right→left)

Note) In case of two or more options, indicate them in alphabetical order.

Accessories

Nil	None (standard)
B	With bracket

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

Thread type

Nil	Rc
N	NPT
F	G

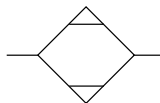
Port size

Symbol	Bore	Size		
		60	75	100
03	3/8	●	●	●
04	1/2	●	●	●



IDG60S

JIS symbol



Bracket assembly (accessory) part nos.

Part no.	Applicable models
BM65	IDG60S, 75S, 100S

* With cap bolts and spring washers

Standard Specifications/Single Style (Standard Dew Point -60°C (-76°F))

Model		Standard dew point -60°C (-76°F)		
		IDG60S	IDG75S	IDG100S
Range of operating conditions	Fluid	Compressed air		
	Inlet air pressure	0.3 to 1.0MPa (43.5 to 145psi)		
	Inlet air temperature ^{Note 1)}	-5 to 50°C (23 to 122°F)		
	Ambient temperature	-5 to 50°C (23 to 122°F)		
Standard performance conditions	Outlet air atmospheric pressure dew point	-60°C (-76°F)		
Standard performance conditions	Inlet air flow rate /min (ANR) (SCFM) ^{Note 2)}	77 (2.7)	154 (5.4)	235 (8.3)
	Outlet air flow rate /min (ANR) (SCFM)	50 (1.7)	100 (3.5)	150 (5.3)
	Purge air flow rate /min (ANR) (SCFM) ^{Note 3)}	27 (0.9)	54 (1.9)	85 (3.0)
	Inlet air pressure	0.7MPa (72psi)		
	Inlet air temperature	25°C (77°F)		
	Inlet air saturation temperature	25°C (77°F)		
	Ambient temperature	25°C (77°F)		
	Dew point indicator purge air flow rate	1 /min (ANR) {inlet air pressure at 0.7MPa} (0.0353SCFM 101.5psi)		
Port size (nominal size B)		3/8, 1/2		
Weight kg [lb]	(with bracket)	1.50 (1.65)	1.65 (1.80)	1.80 (1.95)
		[3.31 (3.64)]	[3.64 (3.97)]	[3.97 (4.30)]

Note 1) With no freezing.

Note 2) ANR indicates the flow rate converted to the value for 20°C (68°F) at atmospheric pressure.

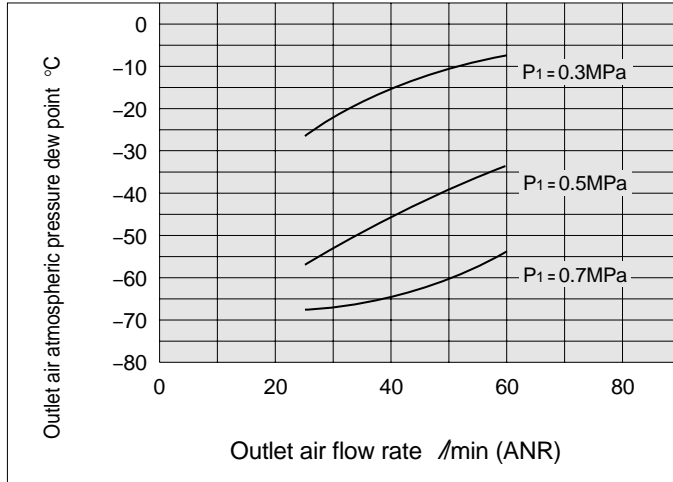
Note 3) Includes dew point indicator purge air flow rate of 1/min (ANR) (0.0353SCFM) (inlet air pressure at 0.7MPa) (101.5psi).

Conditions: Inlet air temperature 25°C (saturated air), Ambient temperature 25°C, P₁: Inlet air pressure, Purge air discharge tube (Option: P): None

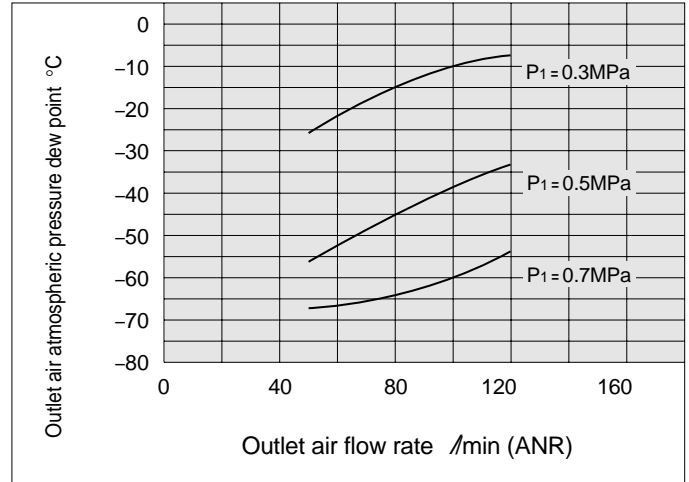
Note: When equipped with fitting for purge air discharge (Option: P), the outlet air atmospheric pressure dew point will rise by 1°C or less for tubing lengths of 5m or less.

Performance Charts

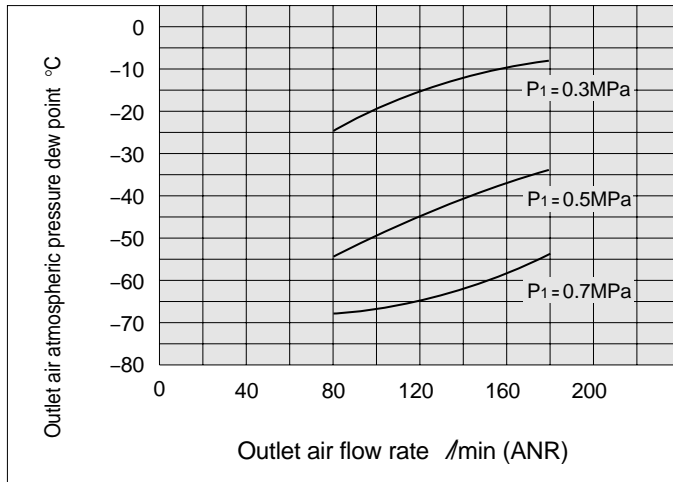
IDG60S



IDG75S



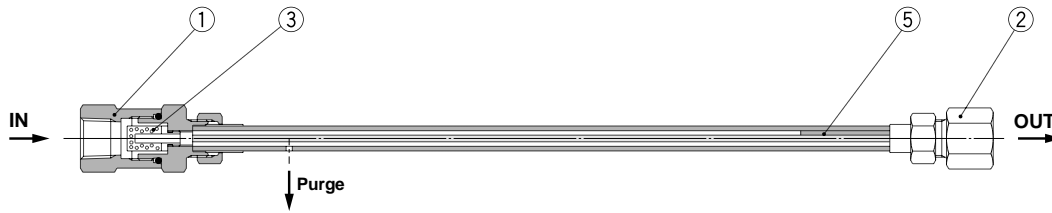
IDG100S



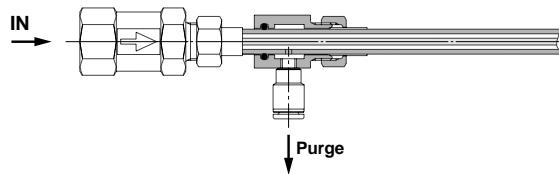
Note: °F = (°C x 1.8) + 32
 1MPa = 145psi
 1 l/min = 0.0353SCFM

Construction

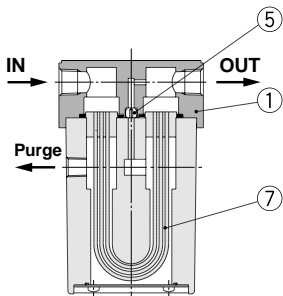
IDG1



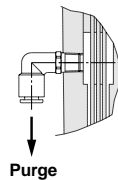
Optional specifications
With fitting for purge air discharge (Option: P)



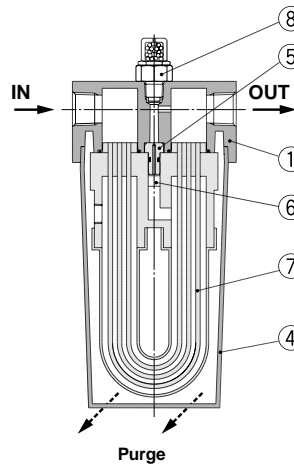
IDG3, 5 IDG3H, 5H



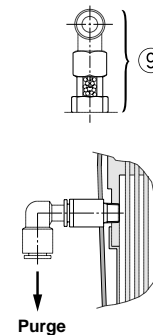
Optional specifications
With fitting for purge air discharge (Option: P)



IDG10, 20 IDG10H, 20H



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



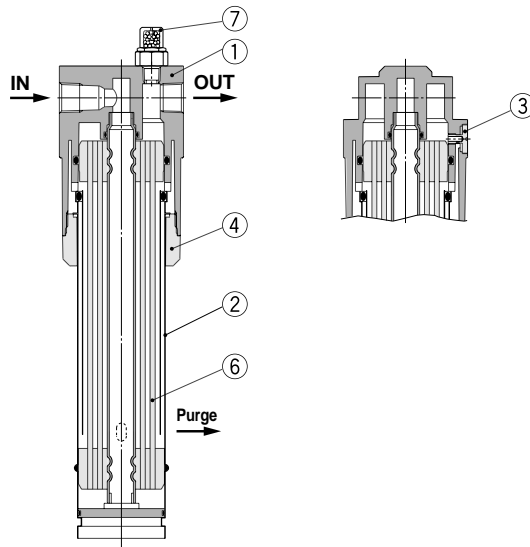
Parts list

No.	Description	Material					Note
		IDG1	IDG3, 3H	IDG5, 5H	IDG10, 10H	IDG20, 20H	
1	Body	Copper alloy	Aluminum alloy			Platinum silver coating (IDG1 is electroless nickel plated)	
2	Female connector	Copper alloy	—			Electroless nickel plated	
3	Strainer	Copper alloy	—				
4	Case	—	—	Resin			
5	Orifice	Resin	Stainless steel			IDG3H is resin	
6	Silencer	—	—	Copper alloy			

Replacement parts

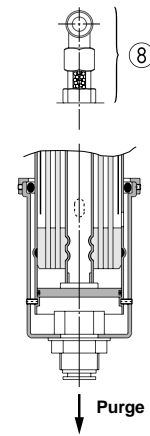
No.	Description	Part number					Note
		IDG1	IDG3, 3H	IDG5, 5H	IDG10, 10H	IDG20, 20H	
7	Membrane module kit	—	IDG-EL3 IDG-EL3H	IDG-EL5 IDG-EL5H	IDG-EL10 IDG-EL10H	IDG-EL20 IDG-EL20H	
8	Dew point indicator kit	—			IDG-DP01		
9		—			IDG-DP01-X001		Option: P

IDG30, 50,
IDG30H, 50H
IDG30L, 50L

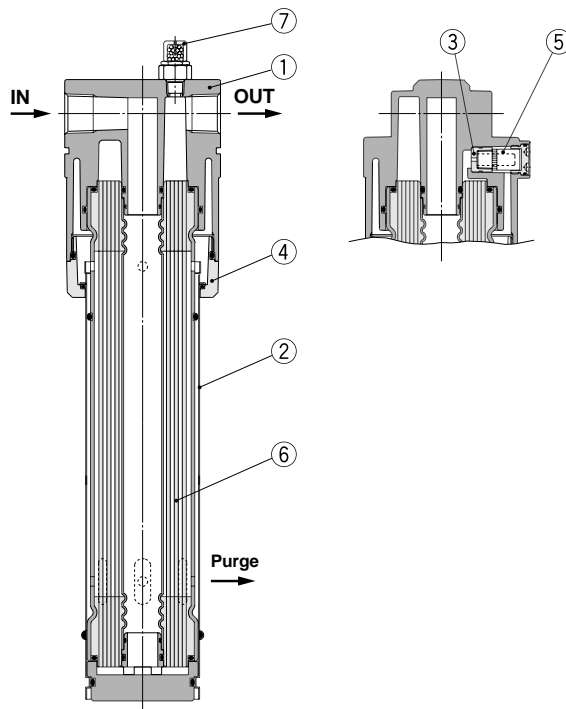


Optional specifications

With fitting for purge air discharge (Option: P)

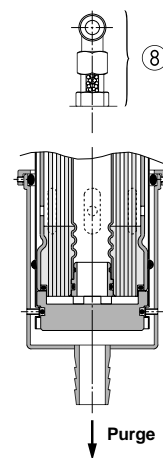


IDG60, 75, 100
IDG60H, 75H, 100H
IDG60L, 75L, 100L
IDG60S, 75S, 100S



Optional specifications

With fitting for purge air discharge (Option: P)



Parts list

No.	Description	Material				Note
		IDG30, 30H, 30L	IDG5, 50H, 50L	IDG60, 60H, 60L, 60S	IDG75, 75H, 75L, 75S	
1	Body	Aluminum alloy				Platinum silver coating
2	Case	Stainless steel				
3	Orifice	Stainless steel				
4	Holder	Aluminum alloy		Aluminum		
5	Silencer	—		Resin + Copper alloy		

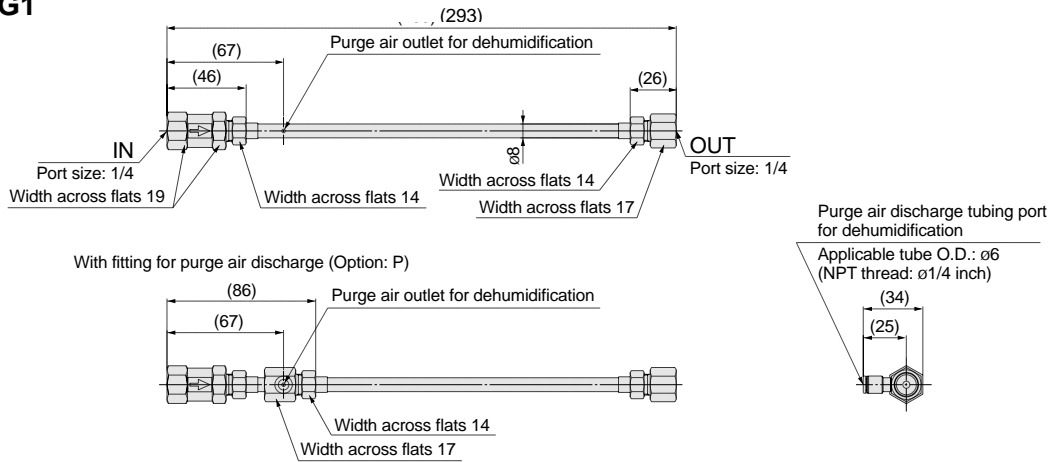
Replacement parts

No.	Description	Part number				Note
		IDG30, 30H, 30L	IDG50, 50H, 50L	IDG60, 60H, 60L, 60S	IDG75, 75H, 75L, 75S	
6	Membrane module kit	IDG-EL30	IDG-EL50	IDG-EL60 IDG-EL60L	IDG-EL75 IDG-EL75L	IDG-EL100 IDG-EL100L
7	Dew point indicator kit	IDG-DP01				
8		IDG-DP01-X001				Option: P

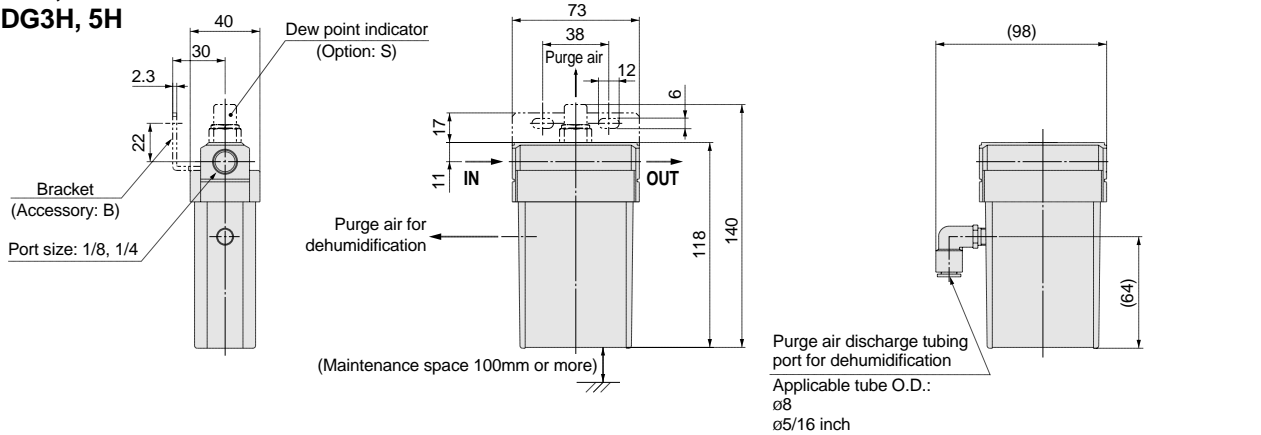
Dimensions (mm)

IDG1

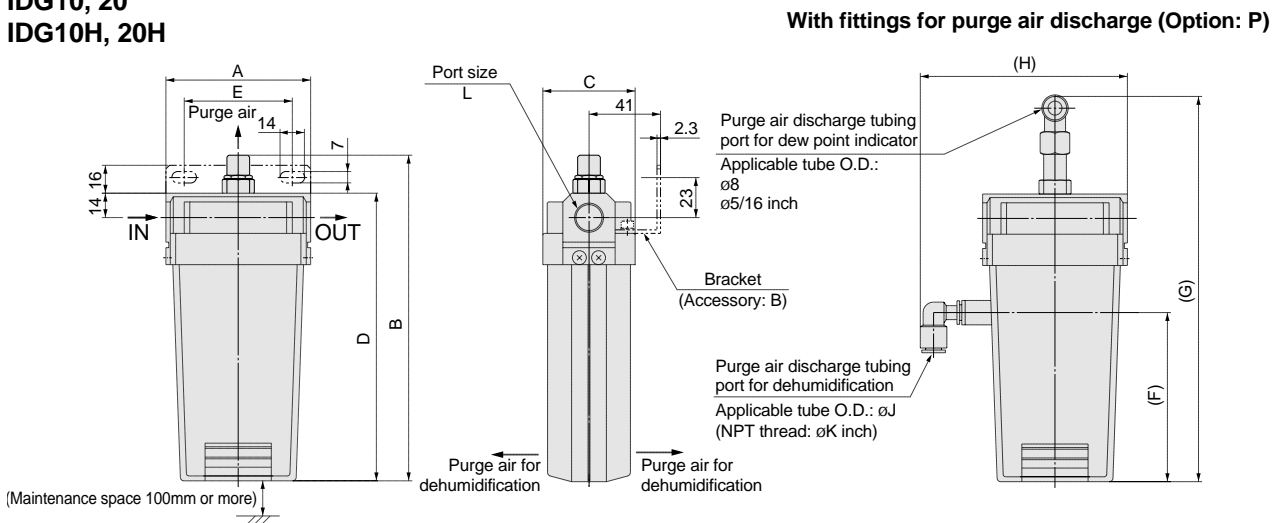
1 in = 25.4mm



IDG3, 5 IDG3H, 5H



IDG10, 20 IDG10H, 20H



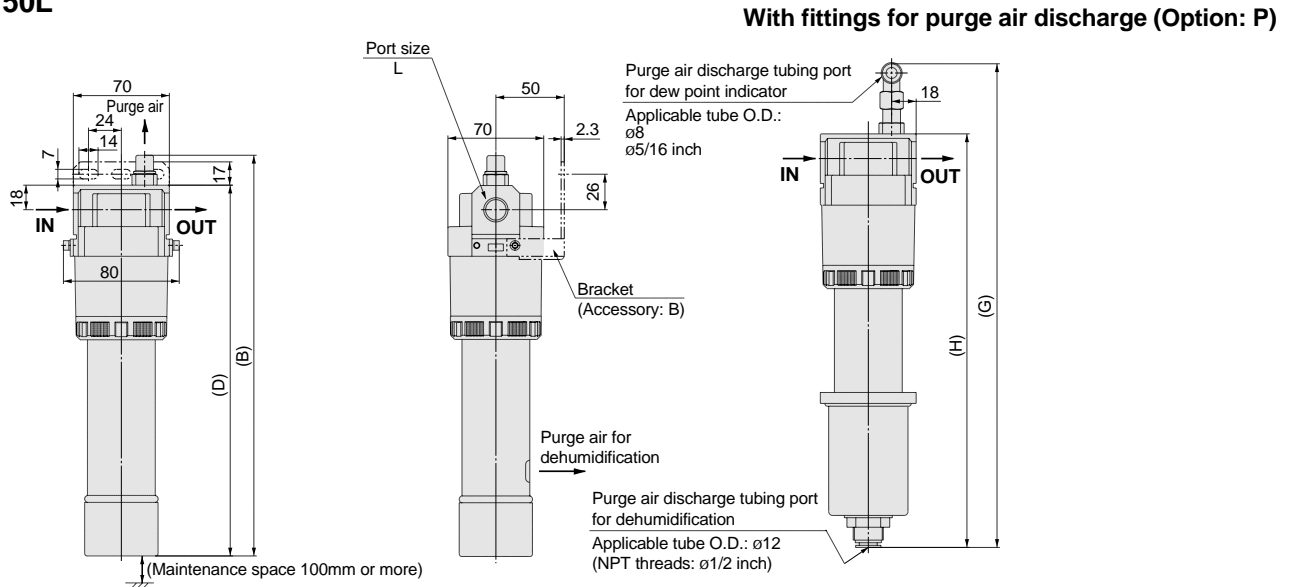
Model	Port size L	A	B	C	D	E	Option: P				
							F	G	H	J	K
IDG10, IDG10H	1/4, 3/8	83	187	53	165	62	97	224	119 [126]	8	5/16
IDG20, IDG20H		113	212	54	190	82	114	249	147 [154]	10	3/8

Values inside [] are for NPT threads

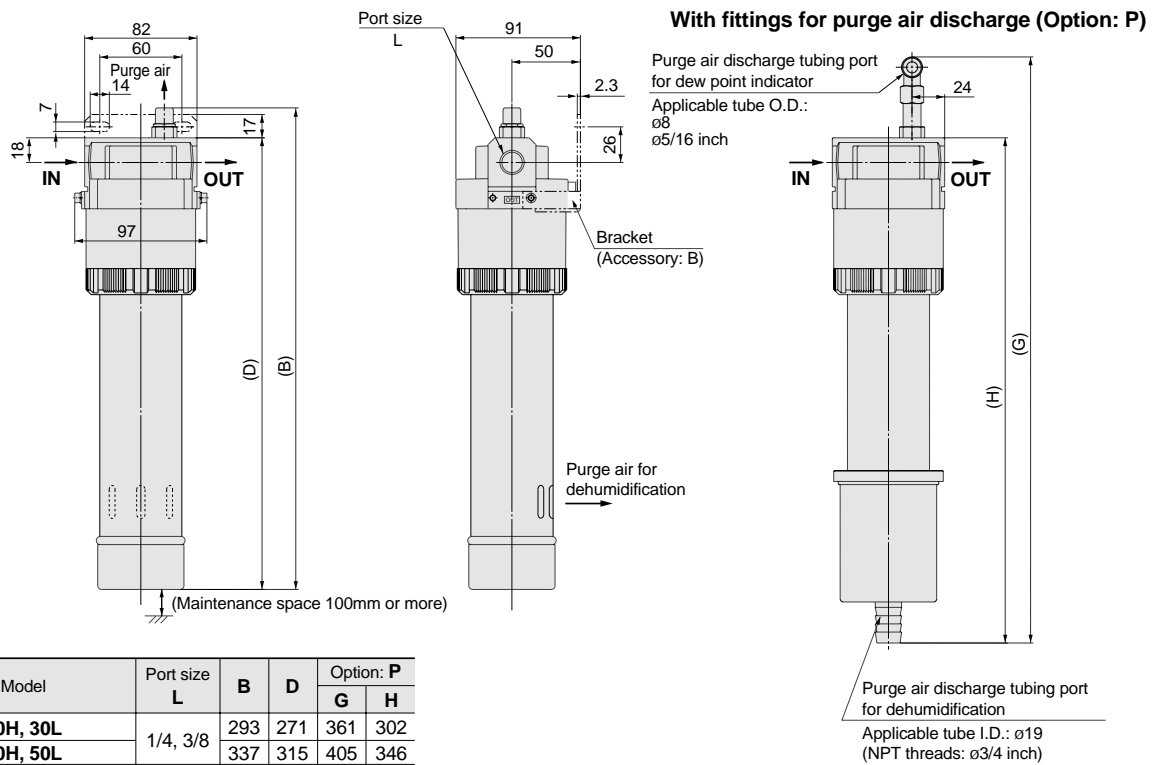
Dimensions (mm)

IDG30, 50
IDG30H, 50H
IDG30L, 50L

1in = 25.4mm



IDG60, 75, 100
IDG60H, 75H, 100H
IDG60L, 75L, 100L
IDG60S, 75S, 100S



Model	Port size L	B	D	Option: P	
				G	H
IDG30, 30H, 30L	1/4, 3/8	293	271	361	302
IDG50, 50H, 50L		337	315	405	346
IDG60, 60H	3/8, 1/2	352	330	428	369
IDG75, 75H, 100, 100H	1/2				
IDG60L, 60S		392	370	468	409
IDG75L, 75S	3/8, 1/2	472	450	548	489
IDG100L, 100S		542	520	618	559

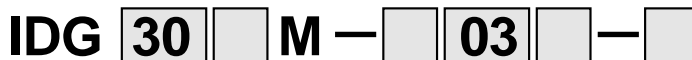
Series IDG

Membrane Air Dryer Unit

Units (M Type, V Type)

How to Order

$^{\circ}\text{F} = (^{\circ}\text{C} \times 1.8) + 32$
 $1/\text{min} = 0.0353\text{SCFM}$



Size

3
5
10
20
30
50
60
75
100

Optional specifications*

Symbol	Contents	Size									
		3	5	10	20	30	50	60	75	100	
Nil	Standard	●	●	●	●	●	●	●	●	●	
P <small>Note 1)</small>	With fitting for purge air discharge	●	●	●	●	●	●	●	●	●	
R	Flow direction (right→left)	●	●	●	●	●	●	●	●	●	
S	With dew point indicator	●	●	Standard equipment							

* In case of two or more options, indicate them in an alphabetical order.
 Note 1) Symbol P is for M type only. This is not applicable to the V type since it is equipped with a relief type regulator.
 Note 2) This is not applicable in case of thread type symbols N and F, because barrel nipples are used for equipment connections.

Standard dew point temperature and air flow rate

Symbol	Standard dew point $^{\circ}\text{C}$	Flow rate by size									
		3	5	10	20	30	50	60	75	100	
Nil	-20	25/6	50/12	100/25	200/50	300/75	500/125	600/125	750/150	1000/190	
H	-15	25/3	50/6	100/11	200/22	300/35	500/60	600/65	750/80	1000/110	
L	-40	—	—	—	—	75/25	110/40	170/57	240/80	300/100	
S	-60	—	—	—	—	—	—	50/27	100/54	150/85	

Drain discharge method *

(Mist separator, Micro mist separator, Micro mist separator with pre-filter)

Symbol	Drain discharge method	Size and standard dew point				
		3, 3H 5, 5H	10, 10H 20, 20H	30, 30H, 30L 50, 50H, 50L	60, 60H 75, 75H 100, 100H	60L, 60S 75L, 75S 100L, 100S
Nil	Manual valve	●	●	●	●	●
C <small>Note 2)</small>	N.C. auto drain	—	●	●	—	●
D <small>Note 2)</small>	N.O. auto drain	● <small>Note 1)</small>	—	●	●	●
J	Drain guide bore 1/4 without valve	—	●	●	●	●

* Refer to "Specific Product Precautions/Selection" on page 46 regarding auto drain selection.

Note 1) Body sizes 3 and 5 have a differential pressure type auto drain.

Note 2) When symbols C or D are specified, an auto drain with a part number shown on page 18 is mounted.

Component equipment

Symbol	Contents	Description Model	Mist separator	Micro mist separator	Micro mist separator with pre-filter	Membrane air dryer	Regulator
M	With separator	IDG3 to IDG50	●	●	—	●	—
		IDG3H to IDG50H	●	●	—	●	—
		IDG30L/ IDG50L	●	●	—	●	—
		IDG60 to IDG100	—	—	●	●	—
		IDG60H to IDG100H	—	—	●	●	—
		IDG60L to IDG100L	●	●	—	●	—
V	With separator regulator	IDG3 to IDG50	●	●	—	●	●
		IDG3H to IDG50H	●	●	—	●	●
		IDG30L/ IDG50L	●	●	—	●	●
		IDG60 to IDG100	—	—	●	●	●
		IDG60H to IDG100H	—	—	●	●	●
		IDG60L to IDG100L	●	●	—	●	●
IDG60S to IDG100S	●	●	—	●	●		

Note 1) Specifications with element service indicator are also available. See the order made section on page 33.

Note 2) Specifications with micro mist separator regulator are also available. See the order made section on page 35.

Port size

Symbol	Bore	Size								
		3	5	10	20	30	50	60	75	100
01	1/8	●	●	—	—	—	—	—	—	—
02	1/4	●	●	●	●	●	—	—	—	—
03	3/8	—	—	●	●	●	●	●	● <small>Note)</small>	● <small>Note)</small>
04	1/2	—	—	—	—	—	—	●	●	●

Note) Not applicable in case of standard dew points -20°C (Nil) and -15°C (symbol H).

Thread type

Nil	Rc
N	NPT
F	G

Standard Specifications/Units (M Type, V Type) [Standard Dew Point -20°C (-4°F)]

Model		Standard dew point -20°C (-4°F)								
		IDG3M	IDG5M	IDG10M	IDG20M	IDG30M	IDG50M	IDG60M	IDG75M	IDG100M
Component equipment	Mist separator	AFM2000		AFM3000		AFM4000				
	Micro mist separator	AFD2000		AFD3000		AFD4000				
	Micro mist separator with pre-filter			—					AMH350	AMH450
	Regulator (V type only)	AR2001		AR2501					AR4001	
Range of operating conditions	Fluid	Compressed air								
	Inlet air pressure	0.3 to 0.85MPa (43 to 123psi)				0.3 to 1.0MPa (43 to 145psi)				
	Inlet air temperature	-5 to 55°C (23 to 131°F) ^{Note 1)}				-5 to 55°C (23 to 131°F) ^{Note 1)}		5 to 50°C (23 to 122°F)		
	Ambient temperature	-5 to 55°C (23 to 131°F)				-5 to 50°C (23 to 131°F)		5 to 50°C (23 to 122°F)		
Standard performance	Outlet air atmospheric pressure dew point	25°C (68°F)								
	Inlet air flow rate /min (ANR) (SCFM) ^{Note 2)}	31 (1.1)	62 (2.2)	125 (4.4)	250 (8.8)	375 (13.2)	625 (22.1)	725 (25.6)	900 (31.8)	1190 (42.0)
Standard performance conditions	Outlet air flow rate /min (ANR) (SCFM)	25 (0.9)	50 (1.8)	100 (3.5)	200 (70.6)	300 (10.6)	500 (17.7)	600 (21.2)	750 (26.5)	1000 (35.3)
	Purge air flow rate /min (ANR) (SCFM) ^{Note 3)}	6 (0.2)	12 (0.4)	25 (0.9)	50 (1.8)	75 (2.6)	125 (4.4)	125 (4.4)	150 (5.3)	190 (6.7)
	Inlet air pressure	0.7 (101.5)								
	Inlet air temperature	25°C (68°F)								
	Inlet air saturation temperature	25°C (68°F)								
	Ambient temperature	25°C (68°F)								
	Dew point indicator purge air flow rate	1 /min (ANR) (0.0353SCFM) (inlet air pressure at 0.7MPa) (101.5psi)								
Regulator construction (V type only)	Relief type									
Port size (nominal size B)	1/8, 1/4		1/4, 3/8			3/8, 1/2		1/2		
Weight kg [lb] (with auto drain)	M type	0.83 (0.90) [1.83 (1.98)]	1.21 (1.30) [2.67 (2.87)]	1.44 (1.53) [3.17 (3.37)]	2.23 (2.33) [4.92 (5.14)]	2.26 (2.36) [4.98 (5.20)]	2.55 (2.65) [5.62 (5.84)]	3.10 (3.20) [6.83 (7.05)]	3.15 (3.25) [6.94 (7.16)]	
	V type	1.28 (1.35) [2.82 (2.98)]	1.67 (1.76) [3.68 (3.88)]	1.90 (1.99) [4.19 (4.39)]	3.34 (3.45) [7.36 (7.61)]	3.37 (3.48) [7.43 (7.67)]	3.74 (3.84) [8.25 (8.47)]	4.29 (4.39) [9.46 (9.68)]	4.34 (4.44) [9.57 (9.79)]	

Note 1) With no freezing.
 Note 2) ANR indicates the flow rate converted to the value for 20°C (68°F) at atmospheric pressure.
 Note 3) Includes dew point indicator purge air flow rate 1 /min (ANR) (0.0353SCFM) (inlet air pressure at 0.7MPa) (101.5psi) (except IDG3M, IDG3V, IDG5M and IDG5V).
 Note 4) Refer to "Best Pneumatics No. 4" page 1.5-16 for regulator flow rate characteristics and pressure characteristics.
 Note 5) When very clean air is required, refer to page 46 "Precautions on Design", item 2.



IDG10V

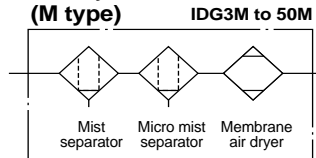


IDG30V

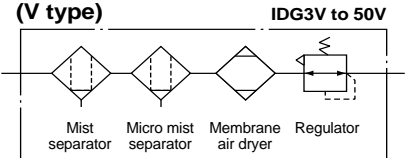


IDG60M

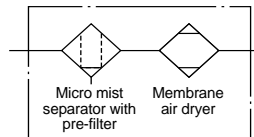
JIS symbol (M type)



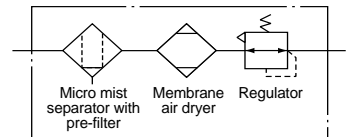
(V type)



IDG60M to 100M



IDG60V to 100V



Part numbers/Auto drain, Case assembly, Pressure gauge

Description	Applicable model								
	IDG3M IDG3V	IDG5M IDG5V	IDG10M IDG10V	IDG20M IDG20V	IDG30M IDG30V	IDG50M IDG50V	IDG60M IDG60V	IDG75M IDG75V	IDG100M IDG100V
Differential pressure type auto drain	AD62		—		—		—		—
Float type auto drain	N.C.	—		AD53		AD54		—	
	N.O.	—		—		AD44		—	
Case assembly (N.O.)	—		—		—		AMH-CA350-D	AMH-CA450-D	
Pressure gauge (V type only)	GC30-10								

Replacement parts (Mist separator, Micro mist separator, Element for micro mist separator with pre-filter)

Description	Model		AFM2000	AFD2000	AFM3000	AFD3000	AFM4000	AFD4000	AMH350	AMH450
Element assembly			630611	63092	630617	63093	630623	63094	AMH-EL350	AMH-EL450

Refer to pages 13 and 14 for membrane air dryer replacement parts.

Standard Specifications/Units (M Type, V Type) [Standard Dew Point -15°C (5°F)]

Model		Standard dew point -15°C (5°F)								
		IDG3HM	IDG5HM	IDG10HM	IDG20HM	IDG30HM	IDG50HM	IDG60HM	IDG75HM	IDG100HM
Component equipment	Mist separator	AFM2000		AFM3000		AFM4000				
	Micro mist separator	AFD2000		AFD3000		AFD4000				
	Micro mist separator with pre-filter			—					AMH350	AMH450
	Regulator (V type only)	AR2001		AR2501					AR4001	
Range of operating conditions	Fluid	Compressed air								
	Inlet air pressure	0.3 to 0.85MPa (43 to 123psi)				0.3 to 1.0MPa (43 to 145psi)				
	Inlet air temperature	-5 to 55°C (23 to 131°F) <small>Note 1)</small>				-5 to 50°C (23 to 131°F) <small>Note 1)</small>		5 to 50°C (23 to 122°F)		
Standard performance	Ambient temperature	-5 to 55°C (23 to 131°F)		-5 to 50°C (23 to 131°F) <small>Note 1)</small>		5 to 50°C (23 to 122°F)				
	Outlet air atmospheric pressure dew point	-15°C (-5°F)								
Standard performance conditions	Inlet air flow rate /min (ANR) (SCFM) <small>Note 2)</small>	28 (1.0)	56 (2.0)	111 (3.9)	222 (7.8)	335 (11.8)	560 (19.8)	665 (23.5)	830 (29.3)	1110 (39.2)
	Outlet air flow rate /min (ANR) (SCFM)	25 (0.9)	50 (1.8)	100 (3.5)	200 (7.1)	300 (10.6)	500 (17.7)	600 (21.2)	750 (26.5)	1000 (35.3)
	Purge air flow rate /min (ANR) (SCFM) <small>Note 3)</small>	3 (0.1)	6 (0.2)	11 (0.4)	22 (0.8)	35 (1.2)	60 (2.1)	65 (2.3)	80 (2.8)	110 (3.9)
	Inlet air pressure	0.7MPa (101.5psi)								
	Inlet air temperature	25°C (77°F)								
	Ambient temperature	25°C (77°F)								
Dew point indicator purge air flow rate		1 /min (ANR) (0.0353SCFM) (inlet air pressure at 0.7MPa) (101.5psi)								
Regulator construction (V type only)		Relief type								
Port size (nominal size B)		1/8, 1/4		1/4, 3/8			3/8, 1/2		1/2	
Weight kg [lb] (with auto drain)	M type	0.83 (0.90) [1.83 (1.98)]		1.21 (1.30) [2.67 (2.87)]	1.44 (1.53) [(3.17 (3.37)]	2.23 (2.33) [4.92 (5.14)]	2.26 (2.36) [4.98 (5.20)]	2.55 (2.65) [5.62 (5.84)]	3.10 (3.20) [6.83 (7.05)]	3.15 (3.25) [6.94 (7.16)]
	V type	1.28 (1.35) [2.82 (2.98)]		1.67 (1.76) [3.68 (3.88)]	1.90 (1.99) [4.19 (4.39)]	3.34 (3.45) [7.36 (7.61)]	3.37 (3.48) [7.43 (7.67)]	3.74 (3.84) [8.25 (8.47)]	4.29 (4.39) [9.46 (9.68)]	4.34 (4.44) [9.57 (9.79)]

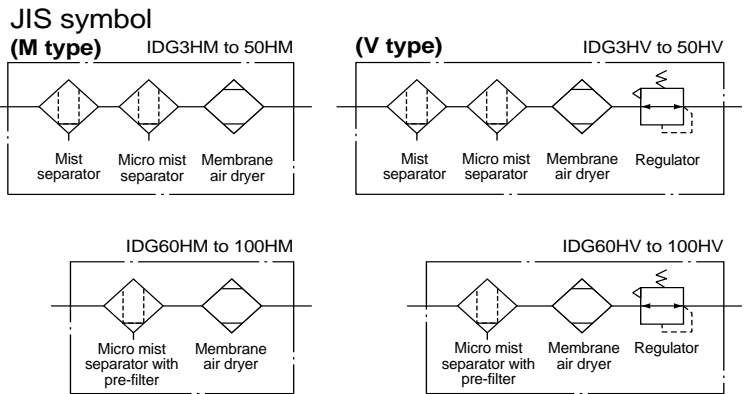
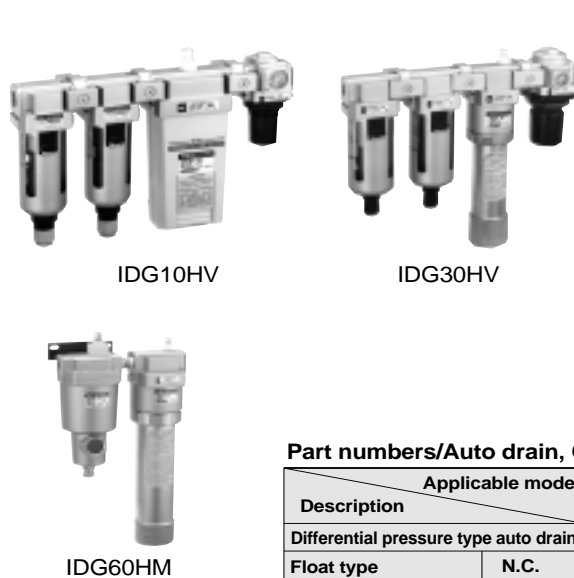
Note 1) With no freezing.

Note 2) ANR indicates the flow rate converted to the value for 20°C (68°F) at atmospheric pressure.

Note 3) Includes dew point indicator purge air flow rate 1 /min (ANR) (0.0353SCFM) (inlet air pressure at 0.7MPa) (101.5psi) (except IDG5HM and 5HV).

Note 4) Refer to "Best Pneumatics No. 4" page 1.5-16 for regulator flow rate characteristics and pressure characteristics.

Note 5) When very clean air is required, refer to page 46 "Precautions on Design", item 2.



Part numbers/Auto drain, Case assembly, Pressure gauge

Applicable model		IDG3HM	IDG5HM	IDG10HM	IDG20HM	IDG30HM	IDG50HM	IDG60HM	IDG75HM	IDG100HM
Description		IDG3HV	IDG5HV	IDG10HV	IDG20HV	IDG30HV	IDG50HV	IDG60HV	IDG75HV	IDG100HV
Differential pressure type auto drain		AD62		—	—	—	—	—	—	—
Float type auto drain	N.C.	—	—	AD53		AD54		—	—	—
	N.O.	—	—	—	—	AD44		—	—	—
Case assembly		—	—	—	—	—	—	AMH-CA350-D	AMH-CA450-D	
Pressure gauge (V type only)		GC30-10								

Replacement parts (Mist separator, Micro mist separator, Element for micro mist separator with pre-filter)

Description	Model	AFM2000	AFD2000	AFM3000	AFD3000	AFM4000	AFD4000	AMH350	AMH450
Element assembly		630611	63092	630617	63093	630623	63094	AMH-EL350	AMH-EL450

Refer to pages 13 and 14 for membrane air dryer replacement parts.

Standard Specifications/Units (M Type, V Type) [Standard Dew Point -40°C (-40°F)]

Model		Standard dew point -40°C (-40°F)				
		IDG30LM IDG30LV	IDG50LM IDG50LV	IDG60LM IDG60LV	IDG75LM IDG75LV	IDG100LM IDG100LV
Component equipment	Mist separator	AFM4000				
	Micro mist separator	AFD4000				
	Regulator (V type only)	AR4001				
Range of operating conditions	Fluid	Compressed air				
	Inlet air pressure	0.3 to 1.0MPa (43 to 145psi)				
	Inlet air temperature ^{Note 1)}	-5 to 50°C (23 to 122°F)				
	Ambient temperature	-5 to 50°C (23 to 122°F)				
Standard performance	Outlet air atmospheric pressure dew point	-40°C (-40°F)				
Standard performance conditions	Inlet air flow rate /min (ANR) (SCFM) ^{Note 2)}	100 (3.5)	150 (5.3)	227 (8.0)	320 (11.3)	400 (14.1)
	Outlet air flow rate /min (ANR) (SCFM)	75 (2.6)	110 (3.9)	170 (6.0)	240 (8.5)	300 (10.6)
	Purge air flow rate /min (ANR) (SCFM) ^{Note 3)}	25 (0.9)	40 (1.4)	57 (2.0)	80 (2.8)	100 (3.5)
	Inlet air pressure	0.7MPa (101.5psi)				
	Inlet air temperature	25°C (77°F)				
	Inlet air saturation temperature	25°C (77°F)				
	Ambient temperature	25°C (77°F)				
Dew point indicator purge air flow rate		1 /min (ANR) (0.0353SCFM) {inlet air pressure at 0.7MPa (101.5psi)}				
Regulator construction (V type only)		Relief type				
Port size (nominal size B)		1/4, 3/8		3/8, 1/2		
Weight kg [lb] (with auto drain)	M type	2.23 (2.33) [4.92 (5.14)]	2.26 (2.36) [4.98 (5.20)]	2.99 (3.09) [6.59 (6.81)]	3.14 (3.24) [6.92 (7.14)]	3.29 (3.39) [7.25 (7.47)]
	V type	3.34 (3.45) [7.36 (7.61)]	3.37 (3.48) [7.43 (7.67)]	4.10 (4.20) [9.04 (9.26)]	4.25 (4.35) [9.37 (9.59)]	4.40 (4.50) [9.70 (9.92)]

Note 1) With no freezing.

Note 2) ANR indicates the flow rate converted to the value for 20°C (68°F) at atmospheric pressure.

Note 3) Includes dew point indicator purge air flow rate 1 /min (ANR) (0.0353SCFM) (inlet air pressure at 0.7MPa) (101.5psi).

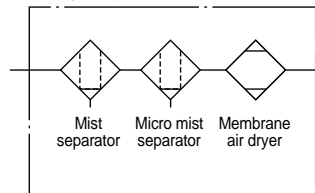
Note 4) Refer to "Best Pneumatics No. 4" page 1.5-16 for regulator flow rate characteristics and pressure characteristics.

Note 5) When very clean air is required, refer to page 46 "Precautions on Design", item 2.

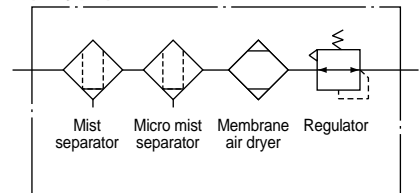


IDG30LV

JIS symbol (M type)



(V type)



IDG60LV



IDG60LM

Part numbers/Auto drain, Pressure gauge

Applicable model		IDG30LM	IDG50LM	IDG60LM	IDG75LM	IDG100LM
		IDG30LV	IDG50LV	IDG60LV	IDG75LV	IDG100LV
Float type auto drain	N.C.	AD54				
	N.O.	AD44				
Pressure gauge		GC30-10				

Replacement parts (Mist separator, Element for micro mist separator)

Description	Model	AFM4000	AFD4000
Element assembly		630623	63094

Refer to pages 13 and 14 for membrane air dryer replacement parts.

Standard Specifications/Units (M Type, V Type) [Standard Dew Point -60°C (-76°F)]

Model		Standard dew point -60°C (-76°F)		
		IDG60SM	IDG75SM	IDG100SM
		IDG60SV	IDG75SV	IDG100SV
Component equipment	Mist separator	AFM4000		
	Micro mist separator	AFD4000		
	Regulator (V type only)	AR4001		
Range of operating conditions	Fluid	Compressed air		
	Inlet air pressure	0.3 to 1.0MPa (43 to 145psi)		
	Inlet air temperature <small>Note 1)</small>	-5 to 50°C (23 to 122°F)		
	Ambient temperature	-5 to 50°C (23 to 122°F)		
Standard performance	Outlet air atmospheric pressure dew point	-60°C (-76°F)		
Standard performance conditions	Inlet air flow rate /min (ANR) (SCFM) <small>Note 2)</small>	77 (2.7)	154 (5.4)	235 (8.3)
	Outlet air flow rate /min (ANR) (SCFM)	50 (1.8)	100 (3.5)	150 (5.3)
	Purge air flow rate /min (ANR) (SCFM) <small>Note 3)</small>	27 (1.0)	54 (1.9)	85 (3.0)
	Inlet air pressure	0.7MPa (101.5psi)		
	Inlet air temperature	25°C (77°F)		
	Inlet air saturation temperature	25°C (77°F)		
	Ambient temperature	25°C (77°F)		
Dew point indicator purge air flow rate		1 /min (ANR) (0.0353SCFM) {inlet air pressure at 0.7MPa} (101.5psi)}		
Regulator construction (V type only)		Relief type		
Port size (nominal size B)		3/8, 1/2		
Weight kg [lb] (with auto drain)	M type	2.99 (3.09) [6.59 (6.81)]	3.14 (3.24) [6.92 (7.14)]	3.29 (3.39) [7.25 (7.47)]
	V type	4.10 (4.20) [9.04 (9.26)]	4.25 (4.35) [9.37 (9.59)]	4.40 (4.50) [9.70 (9.92)]

Note 1) With no freezing.

Note 2) ANR indicates the flow rate converted to the value for 20°C (68°F) at atmospheric pressure.

Note 3) Includes dew point indicator purge air flow rate 1/min (ANR) (0.0353SCFM) (inlet air pressure at 0.7MPa) (101.5psi).

Note 4) Refer to "Best Pneumatics No. 4" page 1.5-16 for regulator flow rate characteristics and pressure characteristics.

Note 5) When very clean air is required, refer to page 46 "Precautions on Design", item 2.

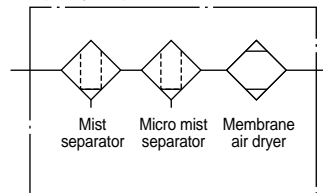


IDG60SV

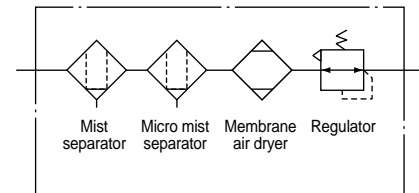


IDG60SM

JIS symbol (M type)



(V type)



Part numbers/Auto drain, Pressure gauge

Applicable model		IDG60SM	IDG75SM	IDG100SM
		IDG60SV	IDG75SV	IDG100SV
Description	Float type auto drain	N.C.	AD54	
		N.O.	AD44	
Pressure gauge		GC30-10		

Replacement parts (Mist separator, Element for micro mist separator)

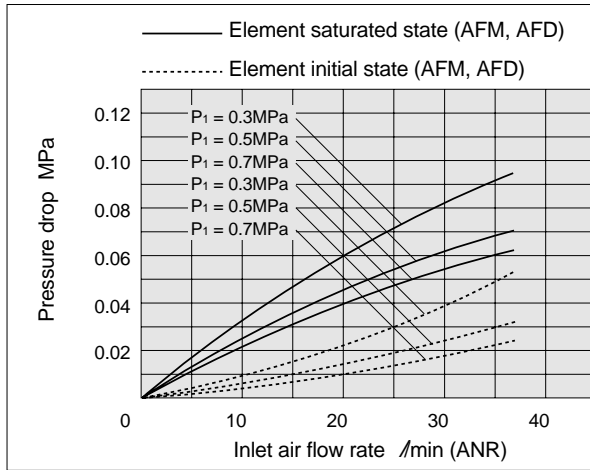
Description	Model	AFM4000	AFD4000
Element assembly		630623	63094

Refer to pages 13 and 14 for membrane air dryer replacement parts.

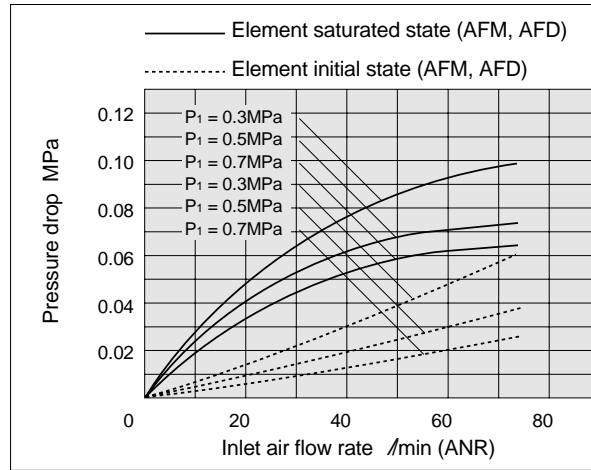
Flow Rate Characteristics

Conditions: Inlet air temperature 25°C (77°F), P₁: Inlet air pressure

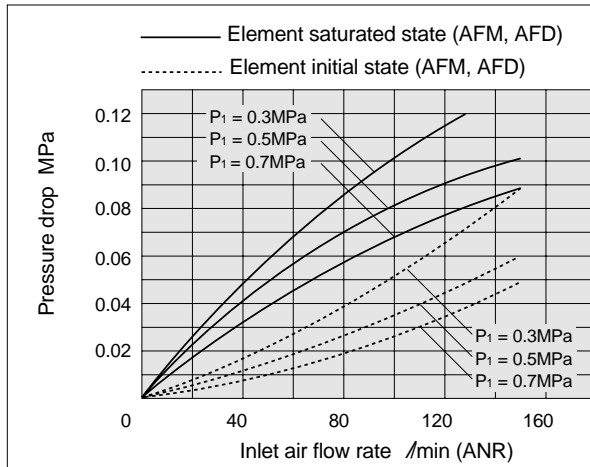
IDG3M, 3V (standard dew point -20°C (-4°F))
IDG3HM, 3HV (standard dew point -15°C (5°F))



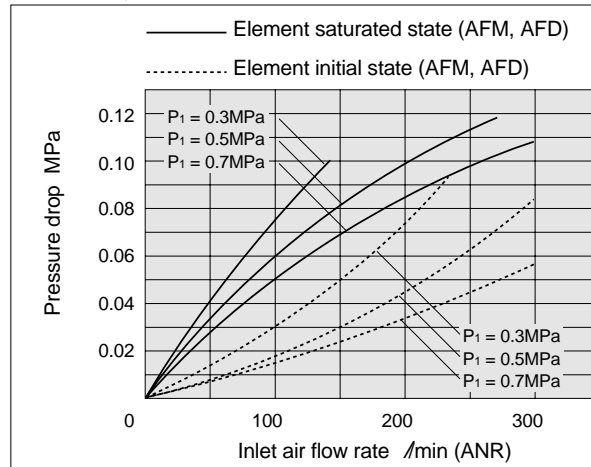
IDG5M, 5V (standard dew point -20°C (-4°F))
IDG5HM, 5HV (standard dew point -15°C (5°F))



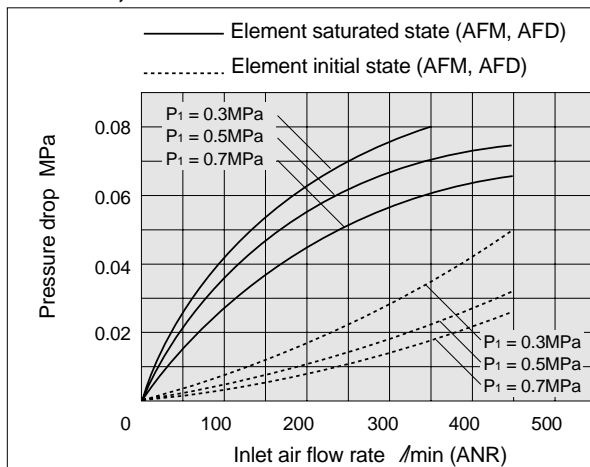
IDG10M, 10V (standard dew point -20°C (-4°F))
IDG10HM, 10HV (standard dew point -15°C (5°F))



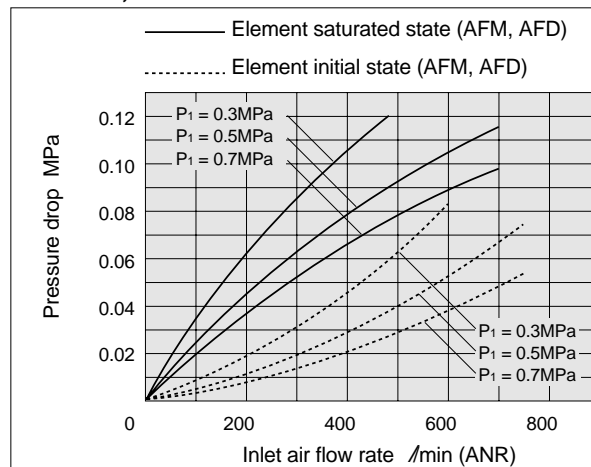
IDG20M, 20V (standard dew point -20°C (-4°F))
IDG20HM, 20HV (standard dew point -15°C (5°F))



IDG30M, 30V (standard dew point -20°C (-4°F))
IDG30HM, 30HV (standard dew point -15°C (5°F))
IDG30LM, 30LV (standard dew point -40°C (-40°F))



IDG50M, 50V (standard dew point -20°C (-4°F))
IDG50HM, 50HV (standard dew point -15°C (5°F))
IDG50LM, 50LV (standard dew point -40°C (-40°F))

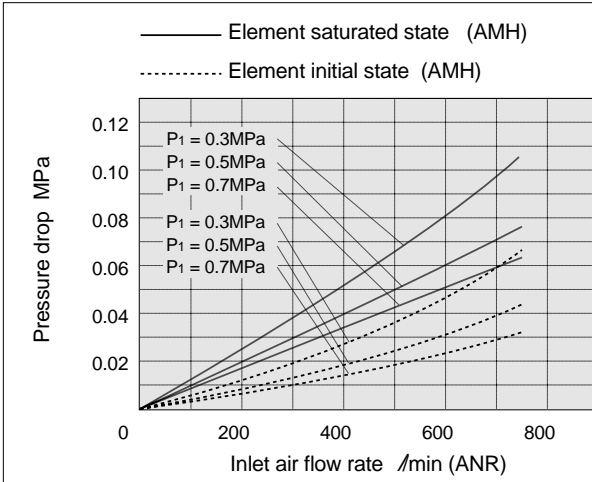


Note: 1MPa = 145psi
 1/min = 0.0353SCFM

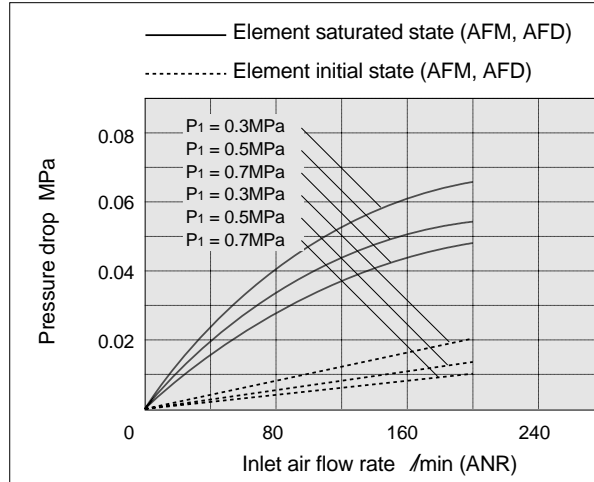
Flow Rate Characteristics

Conditions: Inlet air temperature 25°C (77°F), P₁: Inlet air pressure

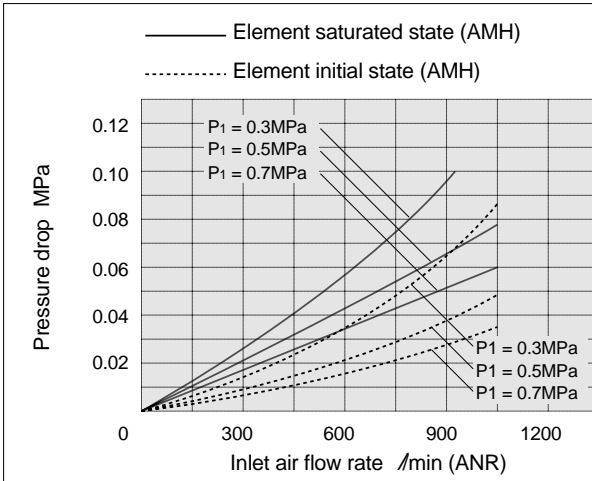
IDG60M, 60V (standard dew point -20°C (-4°F))
IDG60HM, 60HV (standard dew point -15°C (5°F))



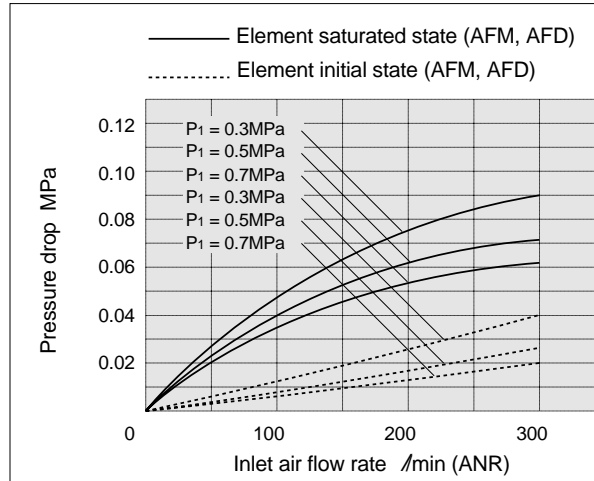
IDG60LM, 60LV (standard dew point -40°C (-40°F))
IDG60SM, 60SV (standard dew point -60°C (-76°F))



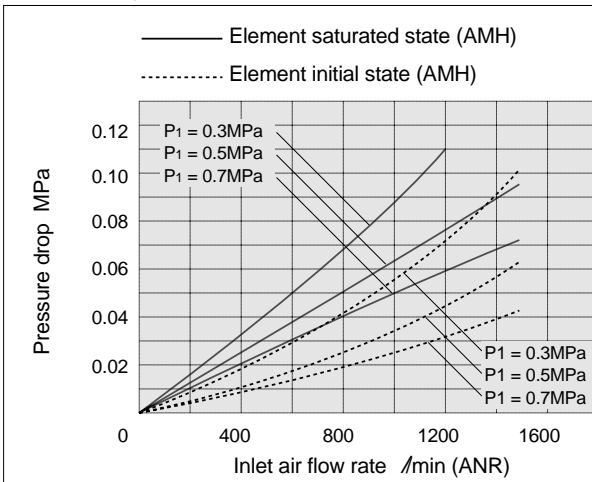
IDG75M, 75V (standard dew point -20°C (-4°F))
IDG75HM, 75HV (standard dew point -15°C (5°F))



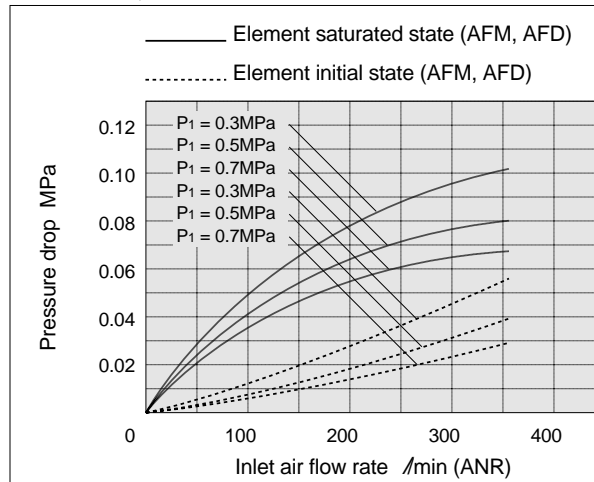
IDG75LM, 75LV (standard dew point -40°C (-40°F))
IDG75SM, 75SV (standard dew point -60°C (-76°F))



IDG100M, 100V (standard dew point -20°C (-4°F))
IDG100HM, 100HV (standard dew point -15°C (5°F))



IDG100LM, 100LV (standard dew point -40°C (-40°F))
IDG100SM, 100SV (standard dew point -60°C (-76°F))

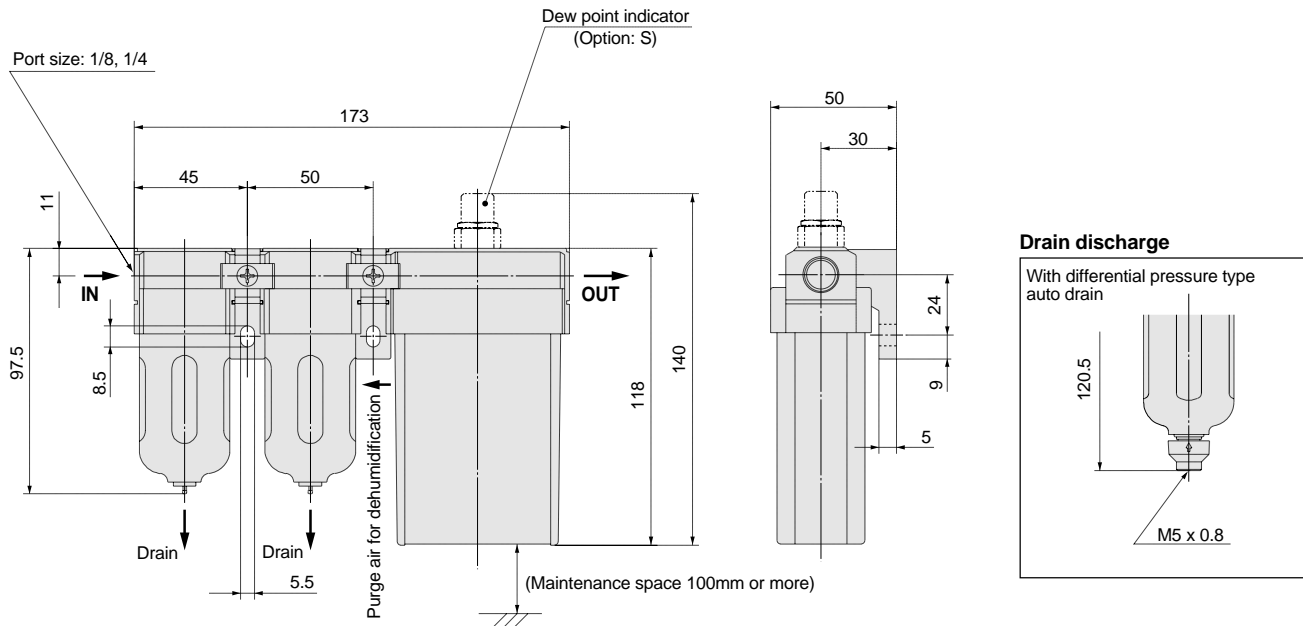


Note: 1MPa = 145psi
 1/min = 0.0353SCFM

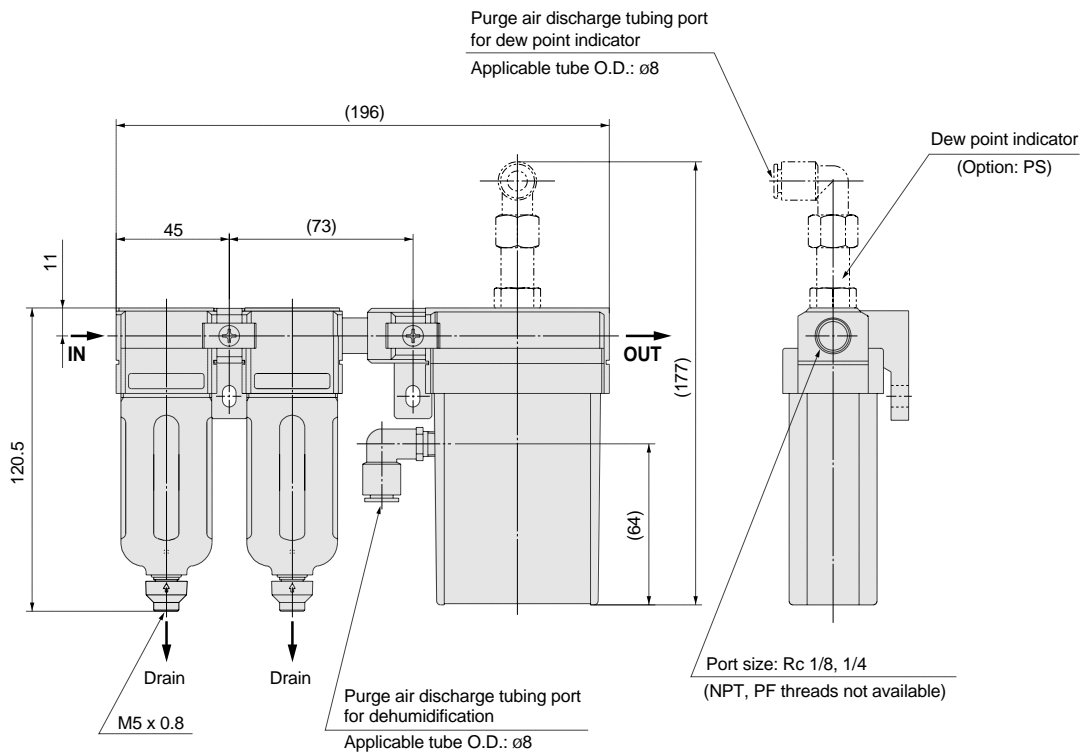
Dimensions (mm) (M Type)

IDG3M, 5M
IDG3HM, 5HM

1in = 25.4mm



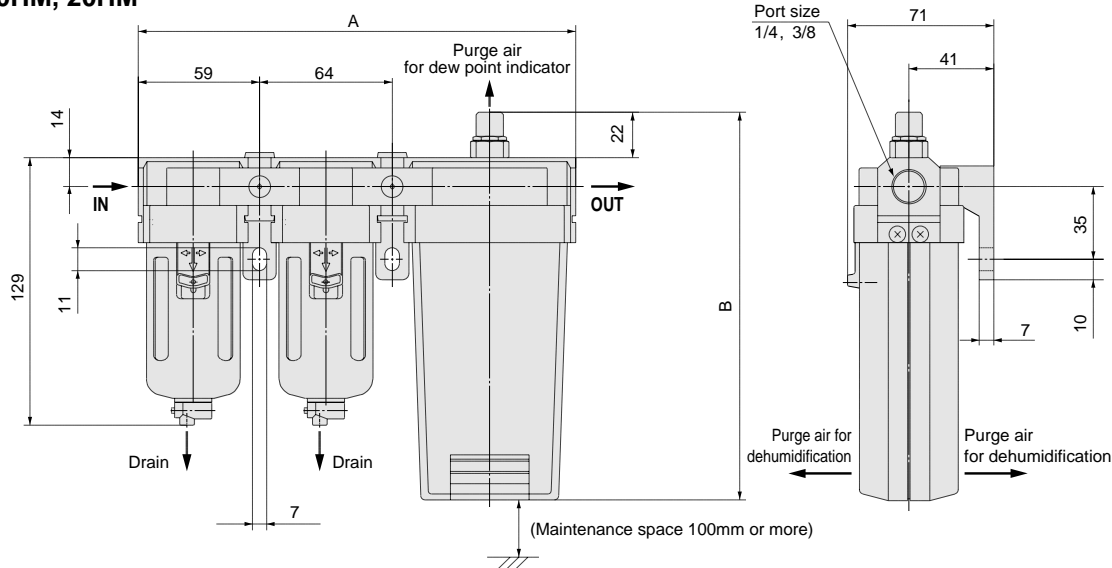
With fittings for purge air discharge (Option: P)



Dimensions (mm) (M Type)

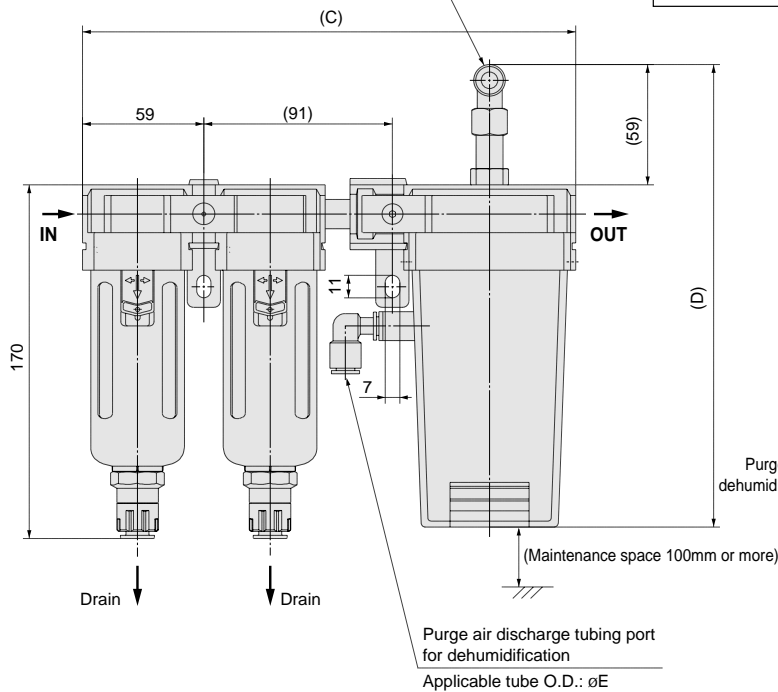
IDG10M, 20M
IDG10HM, 20HM

1in = 25.4mm

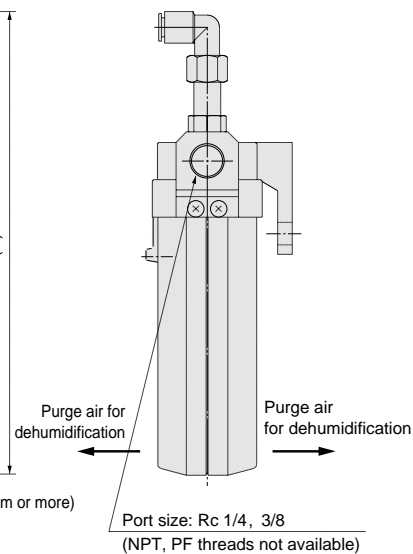
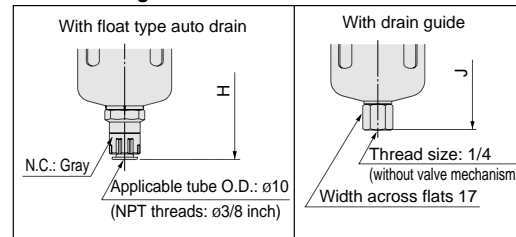


With fittings for purge air discharge (Option: P)

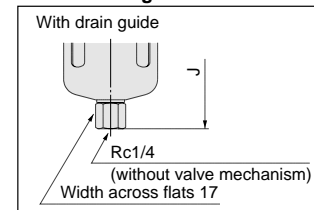
Purge air discharge tubing port
for dew point indicator
Applicable tube O.D.: $\phi 8$



Drain discharge



Drain discharge

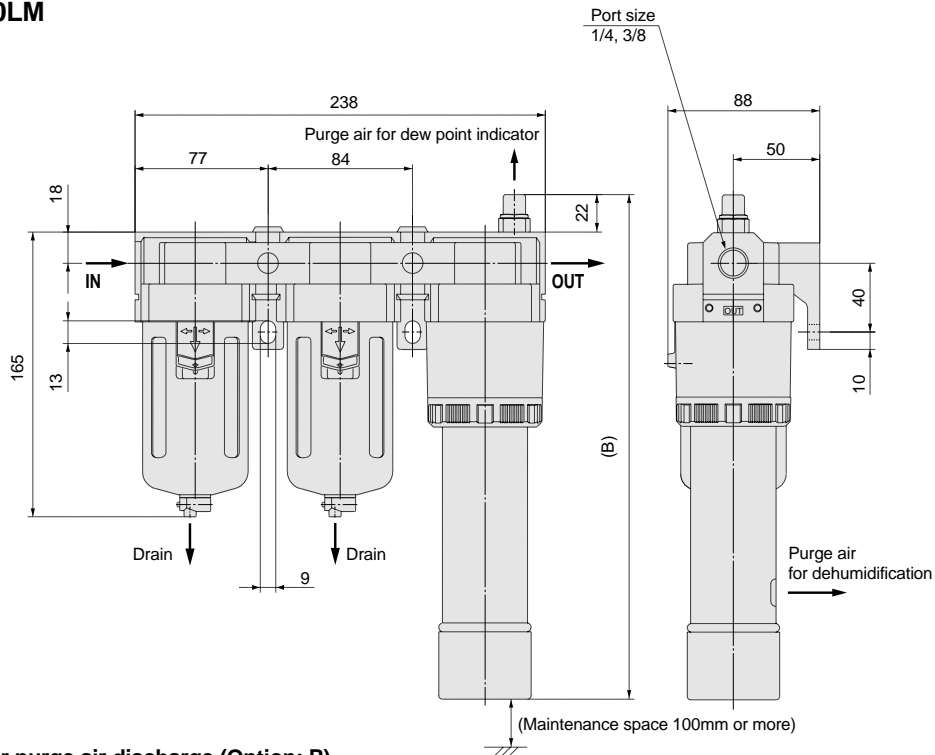


Model	A	B	Option: P			With float type auto drain	With drain guide
			C	D	E	H	J
IDG10M, 10HM	211	187	238	224	8	170	135
IDG20M, 20HM	241	212	268	249	10		

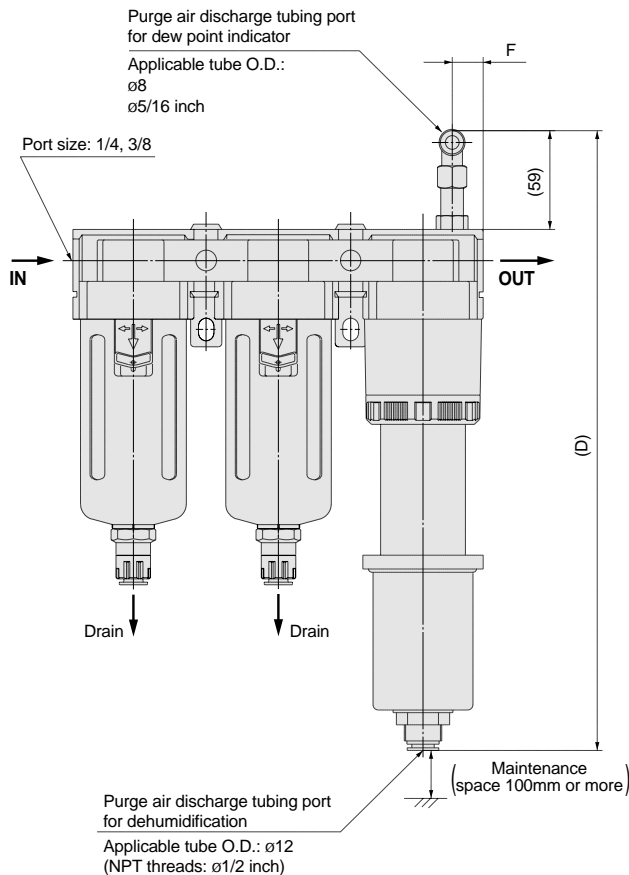
Dimensions (mm)

IDG30M, 50M
IDG30HM, 50HM
IDG30LM, 50LM

1in = 25.4mm

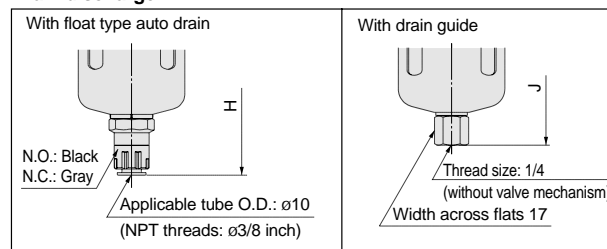


With fittings for purge air discharge (Option: P)



Model	B	Option: P		With float type auto drain	With drain guide
		D	F	H	J
IDG30M, 30HM, 30LM	293	361	18	206	171
IDG50M, 50HM, 50LM	337	405			

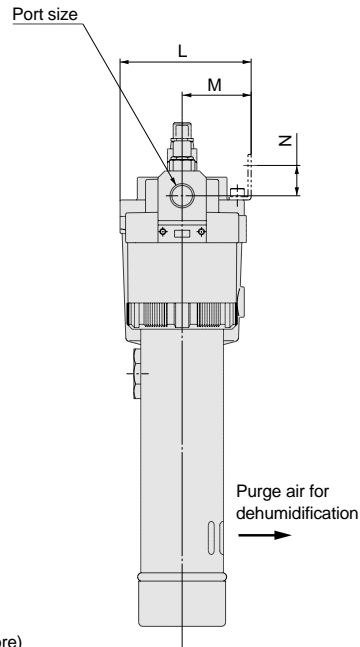
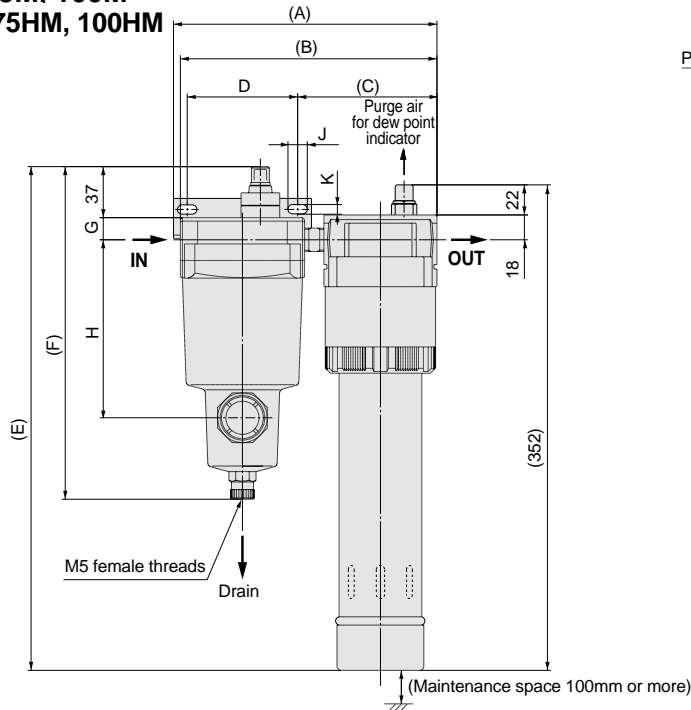
Drain discharge



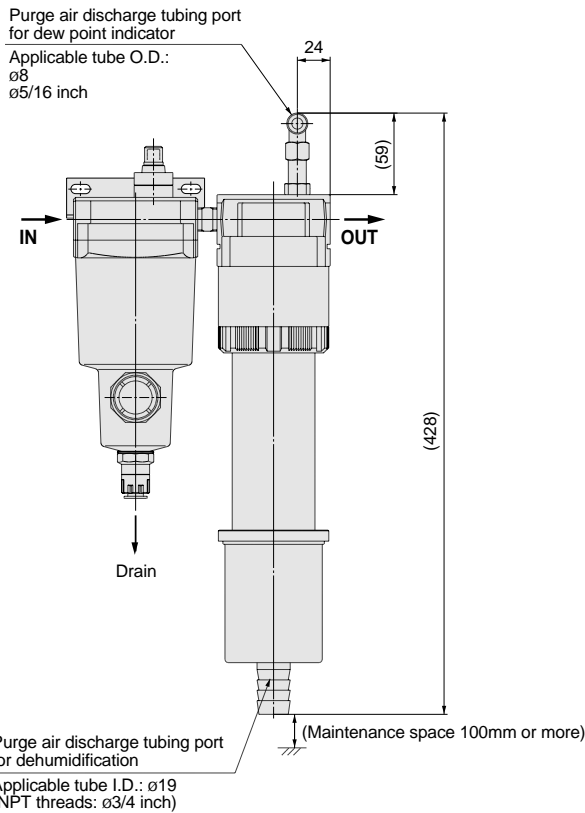
Dimensions (mm) (M Type)

IDG60M, 75M, 100M
IDG60HM, 75HM, 100HM

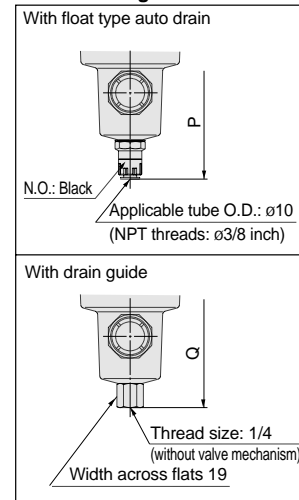
1 in = 25.4mm



With fittings for purge air discharge (Option: P)



Drain discharge

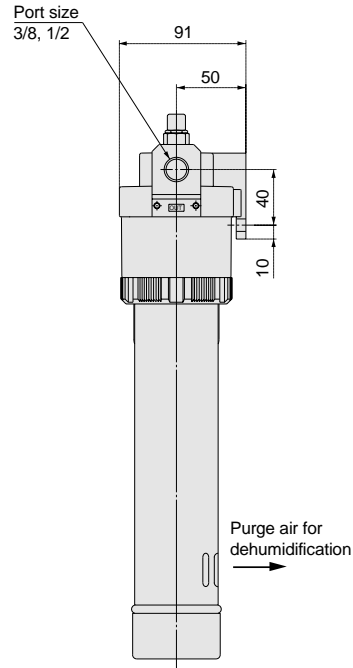
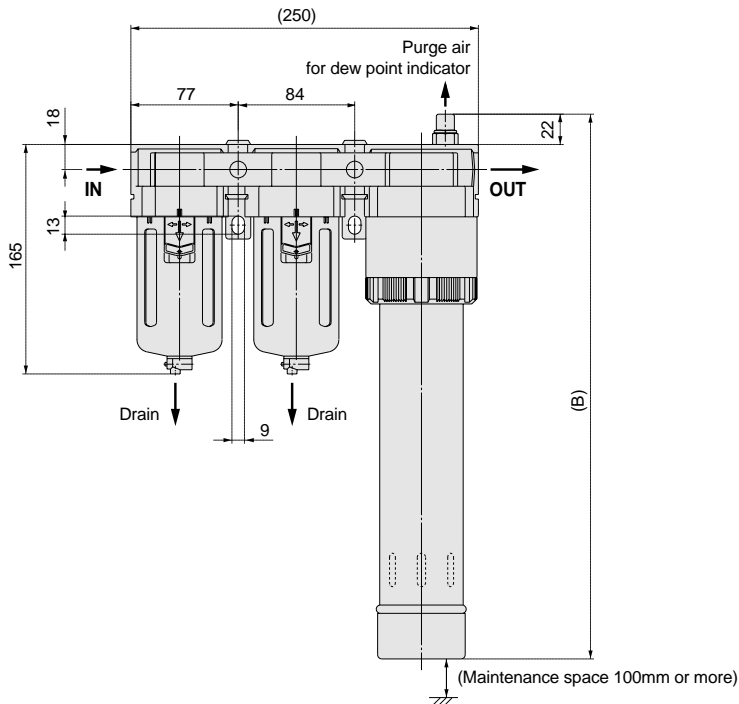


Model	Port size	A	B	C	D	E	F	G	H	K	L	M	N	With float type auto drain	With drain guide
														P	Q
IDG60M, 60HM	3/8, 1/2	191	186	101	80	365	241	16	129	7	95	50	22	255	241
IDG75M, 75HM, 100M, 100HM	1/2	204	202	104	90	368	262	19	147	9	108	55	25	276	262

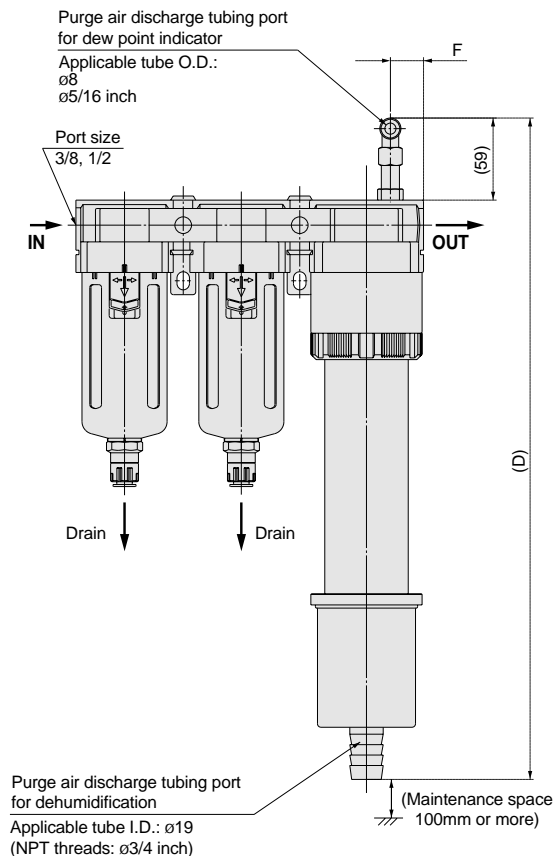
Dimensions (mm)

IDG60LM, 75LM, 100LM
IDG60SM, 75SM, 100SM

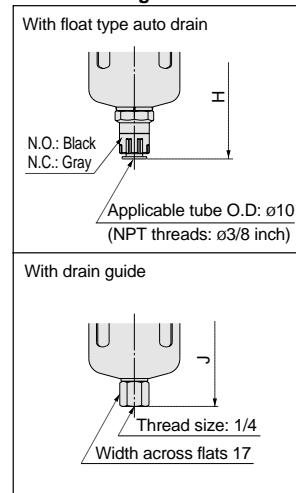
1in = 25.4mm



With fittings for purge air discharge (Option: P)



Drain discharge

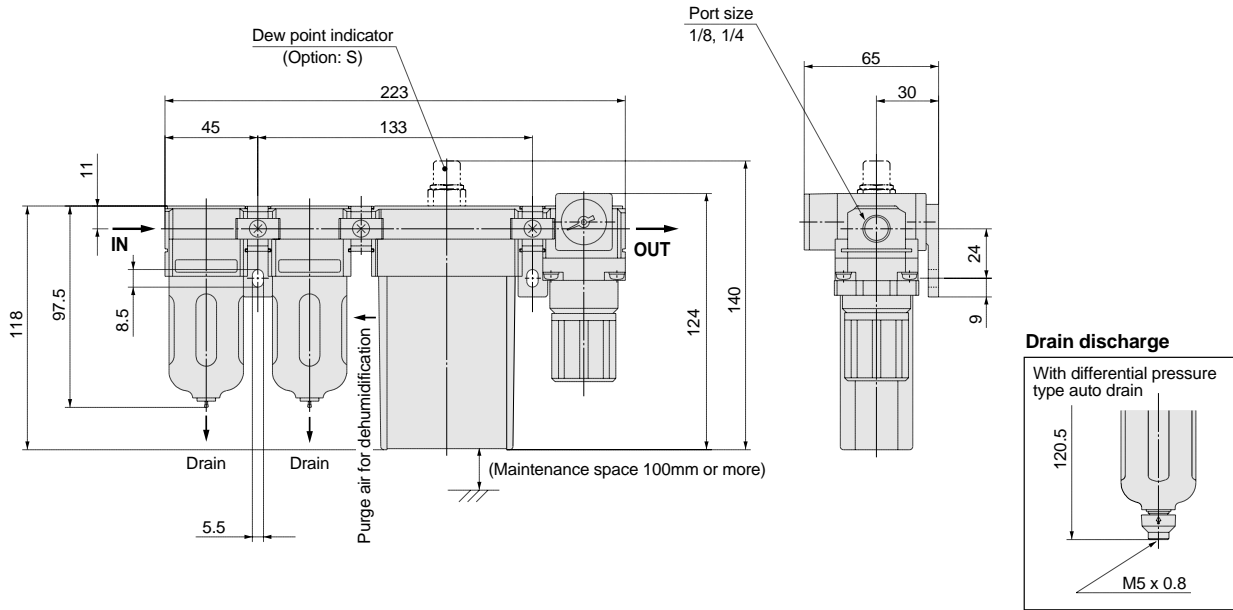


Model	B	Option: P		With float type auto drain	With drain guide
		D	F	H	J
IDG60LM, 60SM	392	468			
IDG75LM, 75SM	472	548	24	206	171
IDG100LM, 100SM	542	618			

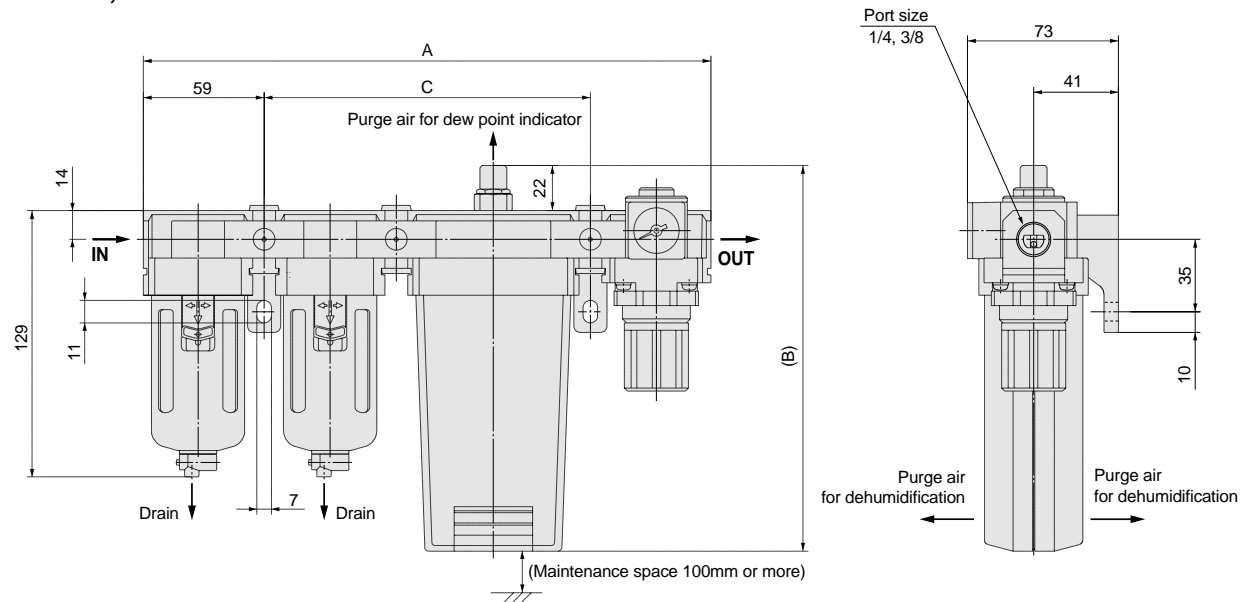
Dimensions (mm) (V Type)

IDG3V, 5V
IDG3HV, 5HV

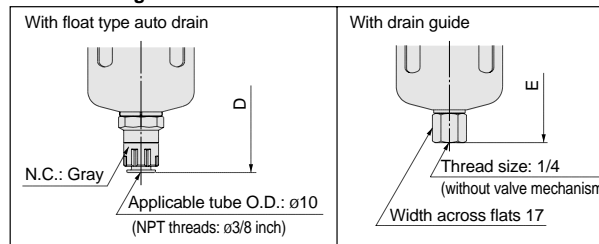
1 in = 25.4mm



IDG10V, 20V
IDG10HV, 20HV



Drain discharge

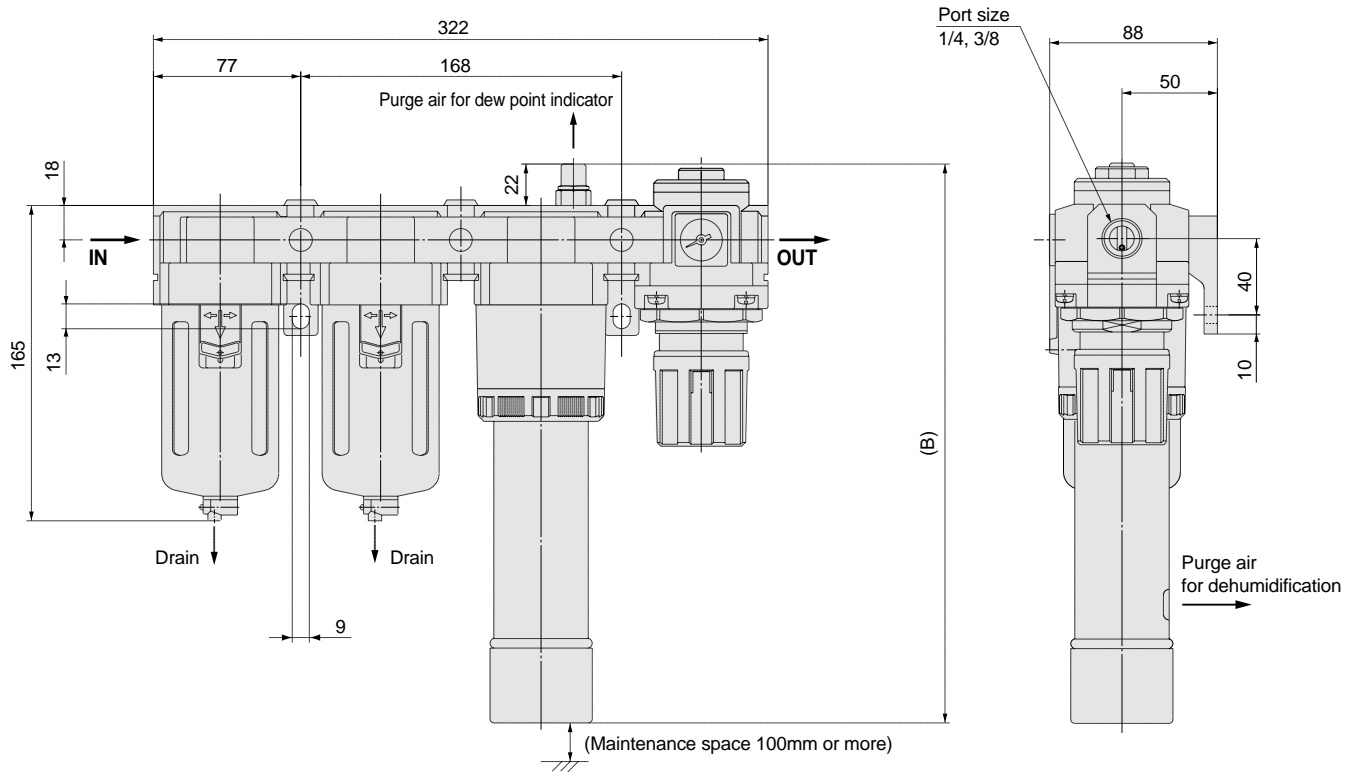


Model	A	B	C	With float type auto drain	With drain guide
				D	E
IDG10V, 10HV	275	187	158	170	135
IDG20V, 20HV	305	212	188		

Dimensions (mm)

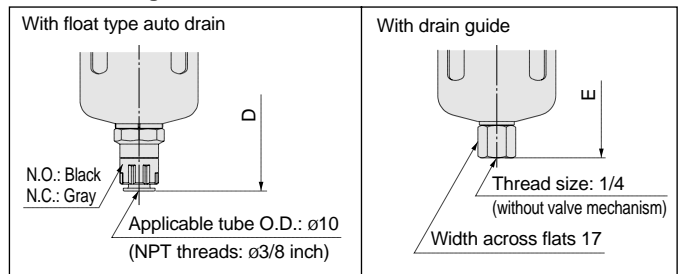
DG30V, 50V
 IDG30HV, 50HV
 IDG30LV, 50LV

1in = 25.4mm



Model	B	With float type auto drain	With drain guide
		D	E
IDG30V, 30HV, 30LV	293	206	171
IDG50V, 50HV, 50LV	337		

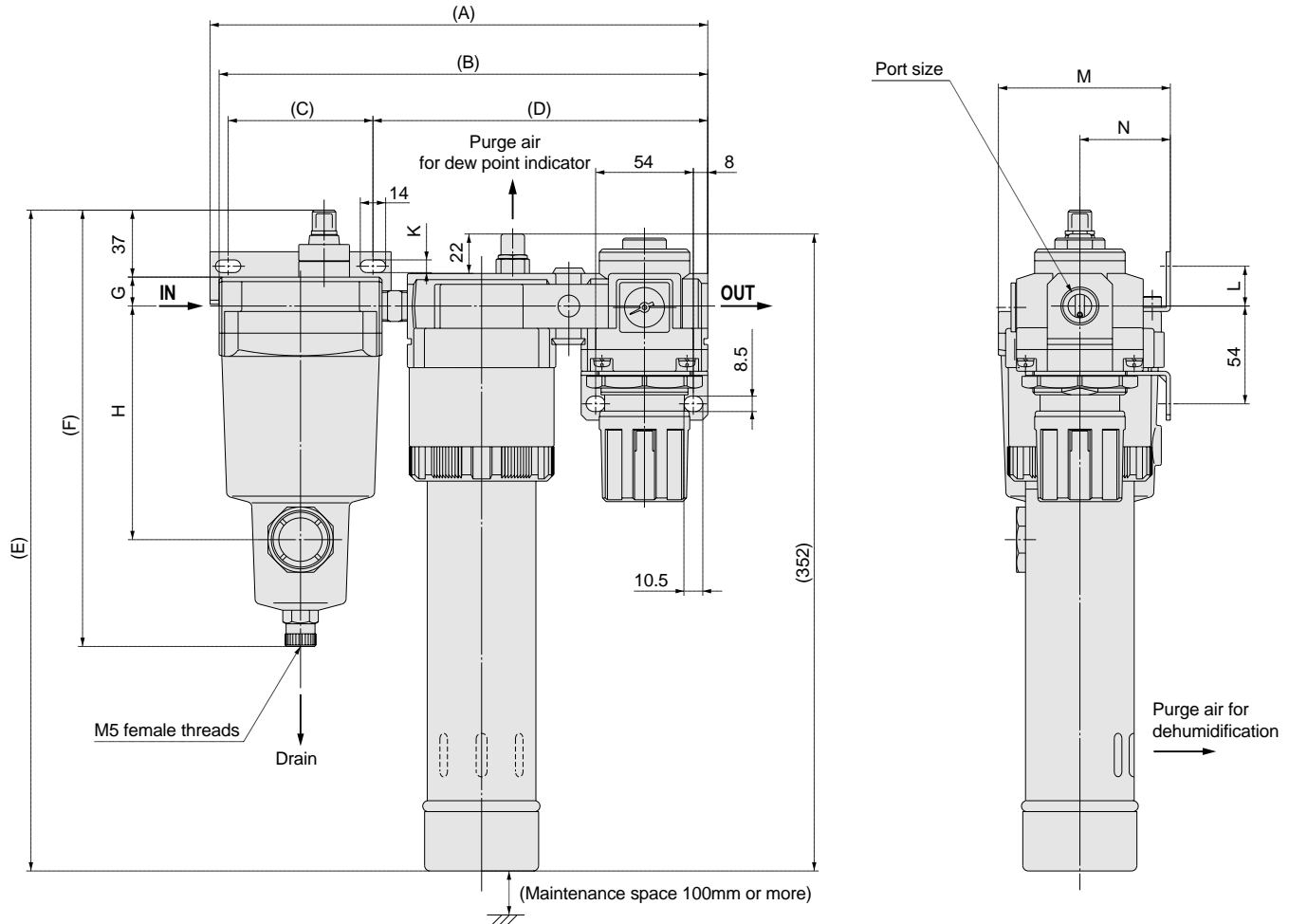
Drain discharge



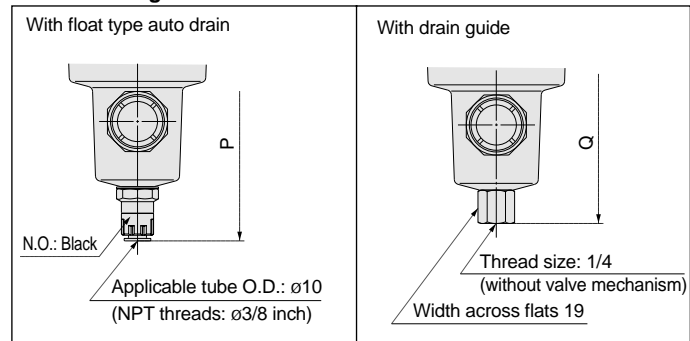
Dimensions (mm) (V Type)

IDG60V, 75V, 100V
IDG60HV, 75HV, 100HV

1in = 25.4mm



Drain discharge

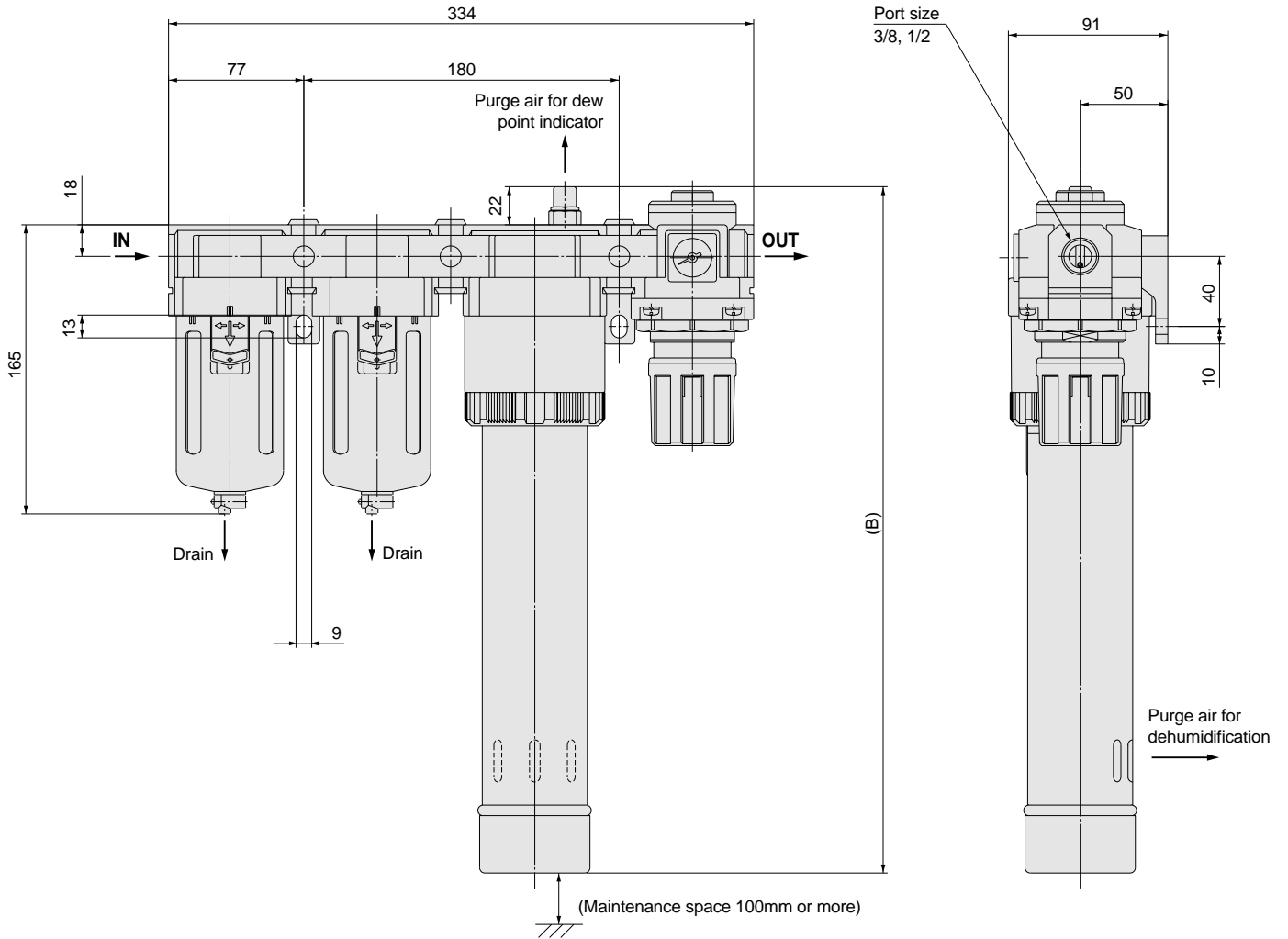


Model	Port size	A	B	C	D	E	F	G	H	K	L	M	N	With float type auto drain	With drain guide
														P	Q
IDG60V, 60HV	3/8, 1/2	275	270	80	185	365	241	16	129	7	22	95	50	255	241
IDG75V, 75HV, 100V, 100HV	1/2	288	286	90	188	368	262	19	147	9	25	108	55	276	262

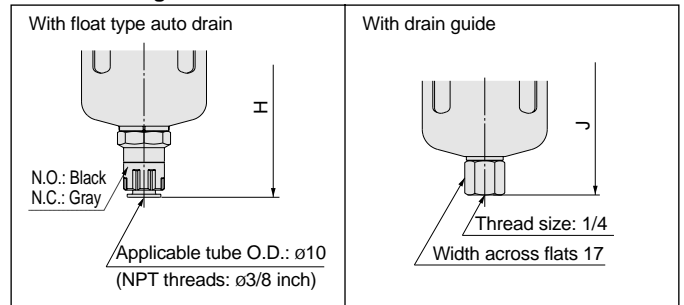
Dimensions (mm)

1in = 25.4mm

IDG60LV, 75LV, 100LV
IDG60SV, 75SV, 100SV



Drain discharge



Model	B	With float type auto drain	With drain guide
		H	J
IDG60LV, 60SV	392	206	171
IDG75LV, 75SV	472		
IDG100LV, 100SV	542		



Made To Order Specifications
Consult SMC regarding detailed dimensions, specifications, and delivery times

1 Element Service Indicator

A 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.

Applicable Models

Applicable model	IDG3M to IDG50M (standard dew point -20°C (-4°F)) IDG3HM to IDG50HM (standard dew point -15°C (5°F)) IDG30LM to IDG50LM (standard dew point -40°C (-40°F))
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How to Order *Refer to ordering procedures for standard specifications on page 17.

IDG 10 M - 03 - X016

Size

3
5
10
20
30
50

Standard dew point*

Optional specifications*

Symbol	Contents	Size					
		3	5	10	20	30	50
Nil	Standard	●	●	●	●	●	●
R	Flow direction (right→left)	●	●	●	●	●	●
S	With dew point indicator	●	●	Standard equipment			

Drain discharge symbol

Drain discharge method		Size					
		3	5	10	20	30	50
Nil	Manual valve	●	●	●	●	●	●
C	N.C. auto drain	●	●	●	●	●	●
D	N.O. auto drain	●	●	●	●	●	●
J	Drain guide (aperture 1/4, without valve)	●	●	●	●	●	●

Port size*
Note) IDG50M and 50HM are 03 only.

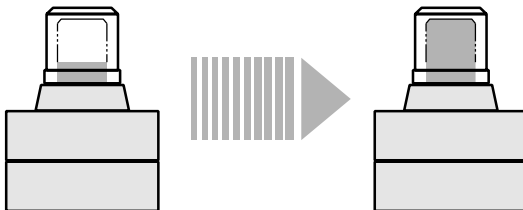
Thread type*

Component equipment

Micro mist separator with pre-filter
Membrane air dryer

Component equipment	Size and standard dew point							
	3, 3H	5, 5H	10, 10H	20, 20H	30, 30H	30L	50, 50H	50L
Micro mist separator with pre-filter	AMH150		AMH250		AMH150	AMH350	AMH150	

Clogging indication



With differential pressure of 0.05MPa (7psi) or less (The tip of the indicator is just visible.)
 With differential pressure of 0.1MPa (14.5psi) or more (The indicator is completely up to the top.)

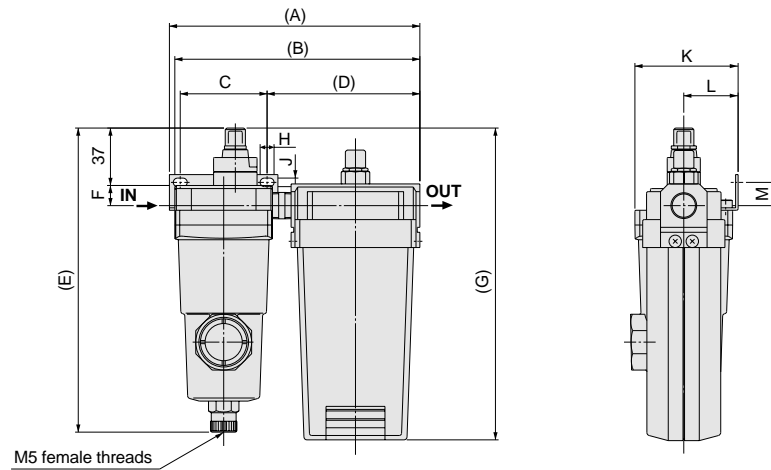
Replace the element when the element service indicator's red indication reaches completely to the top. The top of the indication window indicates differential pressure of approximately 0.1MPa (14.5psi). Furthermore, replace the element after two years of use even if the element service indicator's red 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 with the single style.

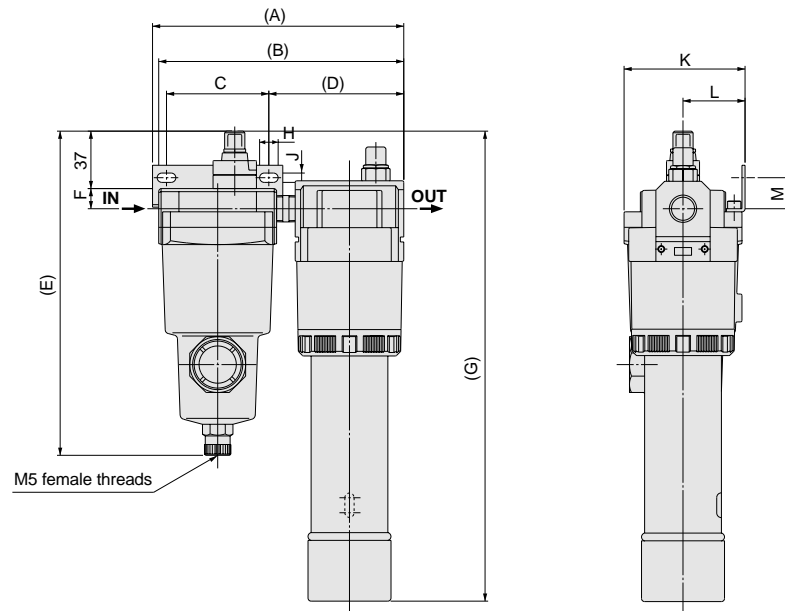
Dimensions/With Element Service Indicator (mm)

1 in = 25.4mm

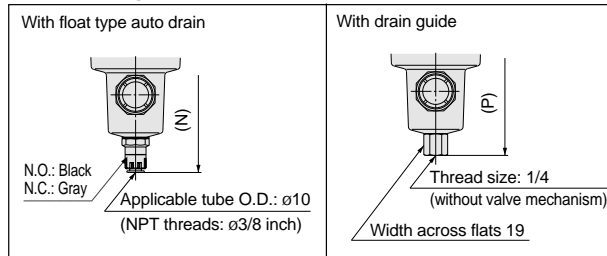
IDG3M, 5M, 10M, 20M
IDG3HM, 5HM, 10HM, 20HM



IDG30M, 50M
IDG30HM, 50HM
IDG30LM, 50LM



Drain discharge



Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	With float type auto drain	With drain guide
														N	P
IDG3M, 3HM, 5M, 5HM	1/8, 1/4	150	146	56	87	196	13	157	9	5.5	66.5	35	15	210	196
IDG10M, 10HM		162	158		99			201							
IDG20M, 20HM		205	201	66	130	226									
IDG30M, 30HM		162	158		87	209		303							
IDG30LM	3/8	149	145	56	86	196	16	350	14	7	95	50	22	255	241
IDG50M, 50HM		177	172	80	87	241	13	347	9	5.5	70	35	15	210	196
IDG50LM	1/4, 3/8	149	145	56	86	196	13	347	9	5.5	70	35	15	210	196



Made To Order Specifications
Consult SMC regarding detailed dimensions, specifications, and delivery times

2 With Micro Mist Separator Regulator (Series AWD)

This can be used when very clean air is required (supply for air bearings, semiconductor parts blow, etc.).
The V type regulator (AR) is modified to produce the micro mist separator regulator (AWD).

Specifications

Outlet air filtration degree	0.01μm (95% filtered particle diameter)
Outlet air oil mist concentration	Max. 0.1mg/m ³ (ANR) (0.08ppm) ^{Note 1)} (prior to oil saturation 0.01mg/m ³ (ANR) or less (0.008ppm or less)

Note 1) With inlet air oil mist concentration of 30mg/m³ (ANR) (24ppm)

Applicable models

Applicable model	IDG3V to IDG50V (standard dew point -20°C (-4°F)) IDG3HV to IDG50HV (standard dew point -15°C (5°F)) IDG30LV to IDG100LV (standard dew point -40°C (-40°F)) IDG60SV to IDG100SV (standard dew point -60°C (-76°F))
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How to Order * Refer to order procedures for standard specifications on page 17.

IDG 10 [] V - [] 03 [] - [] X017

Size

3
5
10
20
30
50
60
75
100

Standard dew point*

Optional specifications*

Symbol	Contents	Size									
		3	5	10	20	30	50	60	75	100	
Nil	Standard	●	●	●	●	●	●	●	●	●	
R	Flow direction (right→left)	●	●	●	●	●	●	●	●	●	
S	With dew point indicator	●	●	Standard equipment							

• Drain discharge symbol*

• Port size*

• Thread type*

• Component equipment

- Mist separator
- Micro mist separator
- Membrane air dryer
- Micro mist separator regulator

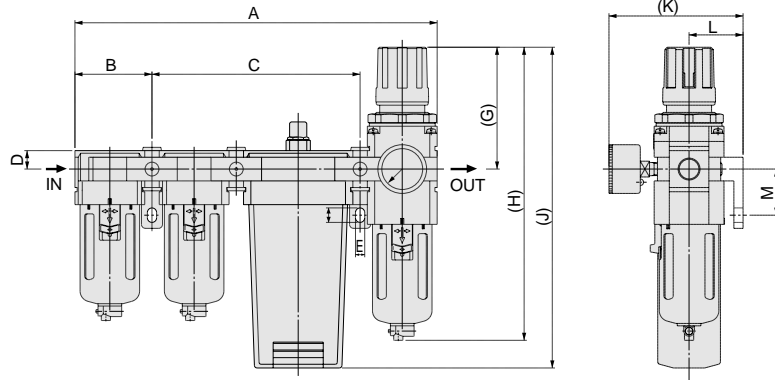
Component equipment	Size									
	3	5	10	20	30	50	60 ^{Note)}	75 ^{Note)}	100 ^{Note)}	
Mist separator	AFM2000		AFM3000		AFM4000					
Micro mist separator	AFD2000		AFD3000		AFD4000					
Micro mist separator regulator	AWD2000		AWD3000		AWD4000					

Note) Standard dew point symbols L (-40°C (-40°F)) and S (-60°C (-76°F)) only

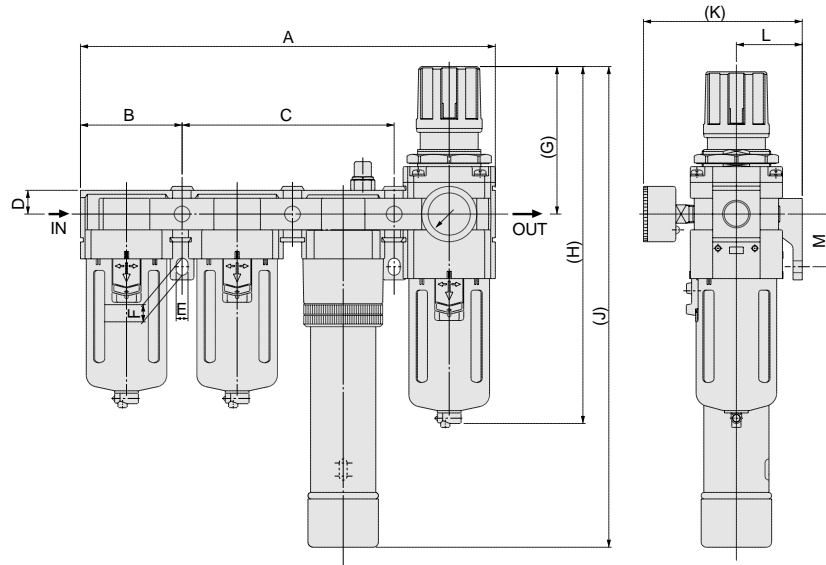
Dimensions/With Micro Mist Separator Regulator (mm)

IDG3V, 5V, 10V, 20V
IDG3HV, 5HV, 10HV, 20HV

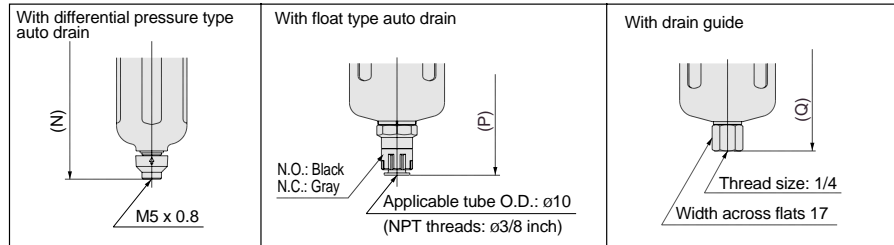
1 in = 25.4mm



IDG30V, 50V
IDG30HV, 50HV
IDG30LV, 50LV, 60LV, 75LV, 100LV
IDG60SV, 75SV, 100SV



Drain discharge



Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	With auto drain		With drain guide
														Differential pressure type	Float type	
														N	P	Q
IDG3V, 3HV, 5V, 5HV	1/8, 1/4	224	45	133	11	5.5	8.5	78	179.5	185	87	30	24	201.5	—	—
IDG10V, 10HV	1/4, 3/8	275	59	158	14	7	11	92.5	222.5	244	102	41	35	—	263.5	228.5
IDG20V, 20HV		305		188										—		
IDG30V, 30HV		315		161							365					
IDG50V, 50HV											409					
IDG60LV, 60SV	3/8, 1/2	327	77	173	18	9	13	112	274	464	121	50	40	—	315	280
IDG75LV, 75SV										544						
IDG100LV, 100SV										614						

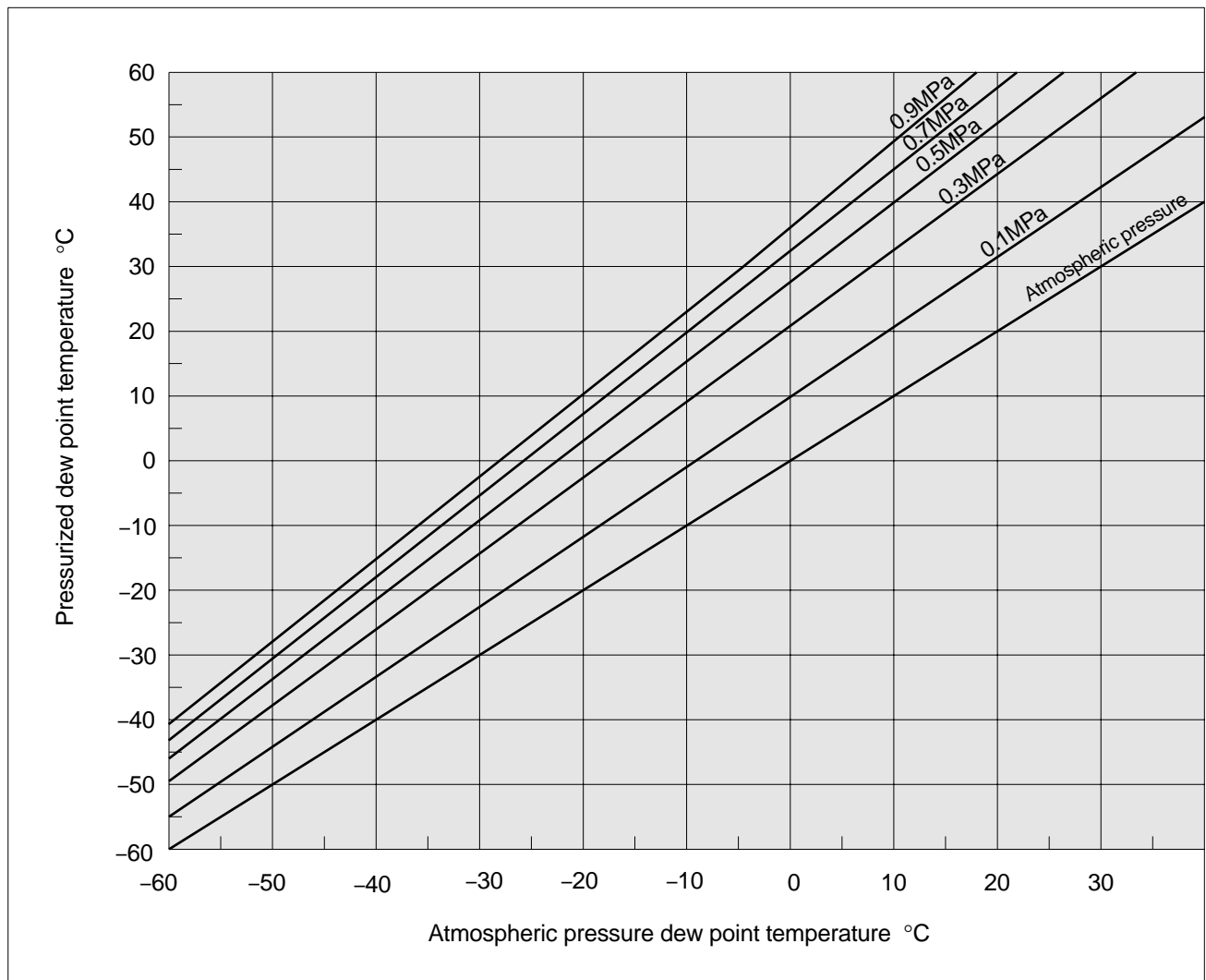
Model Selection

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 dew point under pressure, refer to the dew point temperature conversion chart below.)
 Inlet air pressure [MPa]
 Inlet air temperature [°C]
 Allowable pressure drop ΔP [MPa]
 Compressed air supply capacity Q [l/min (ANR)]

Note: °F = (°C x 1.8) + 32
 1MPa = 145psi
 1 l/min = 0.0353SCFM

Dew point temperature conversion chart



Step 2 Tentative determination of membrane air dryer model

Tentative determination of model from performance charts (refer to pages 2, 3, 6, 7, 10 and 12)

Note: When the inlet air temperature is not 25°C, make a tentative model determination from the performance charts referring to the information below. For each increase of 1°C in the inlet air temperature, the outlet air atmospheric pressure dew point increases by approximately 0.8°C.

(Inlet air pressure: 0.7MPa
Outlet air flow rate: At rated flow rate)

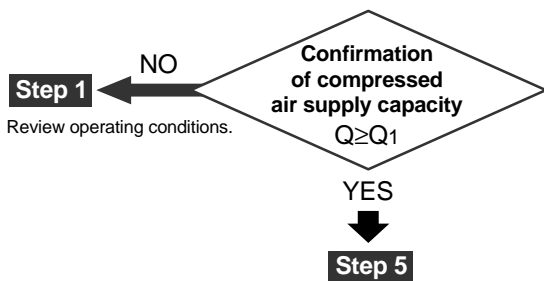
Step 3 Confirmation of purge air flow rate

Read from purge air flow rate charts (refer to page 41)

Conditions: Membrane air dryer model
Inlet air pressure [MPa]

Step 4 Calculation of inlet air flow rate Q₁, and confirmation of compressed air supply capacity

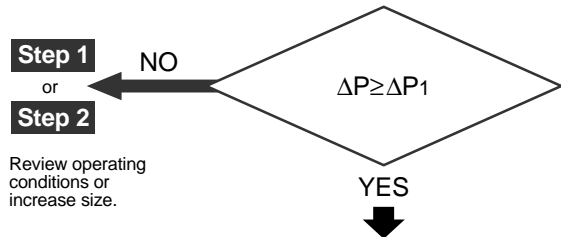
Inlet air flow rate Q₁ [/min (ANR)] =
Outlet air flow rate [/min (ANR)] + Purge air flow rate [/min (ANR)]



Step 5 Confirmation of pressure drop ΔP₁ [MPa]

Single style (refer to pages 39 and 40)
Unit style (refer to pages 22 and 23)

Conditions: Membrane air dryer model
Inlet air flow rate Q₁ [/min (ANR)]
Inlet air pressure [MPa]



Step 6 Examine drain discharge method (for units), accessories and optional specifications

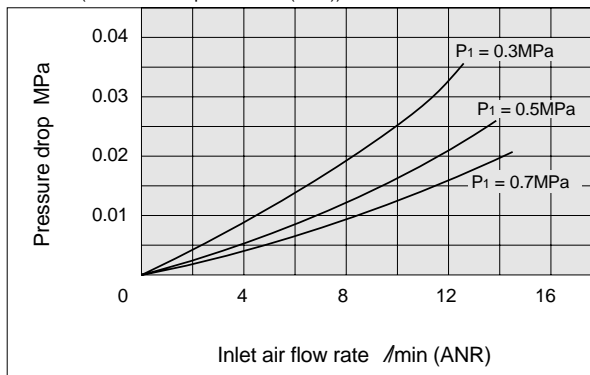
Single style (refer to pages 1, 5, 9 and 11)
Unit style (refer to page 17)

Refer to "Selection" under specific product precautions on page 46.

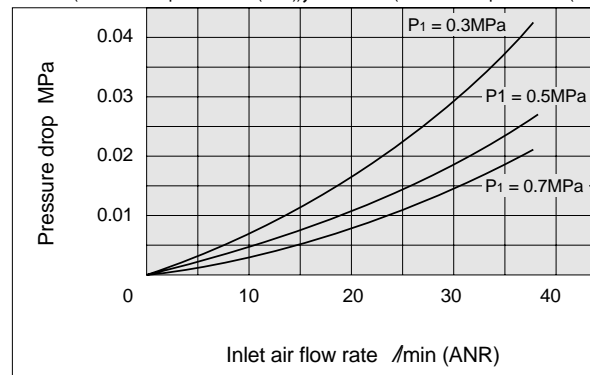
Model Determination

Flow Rate Characteristics

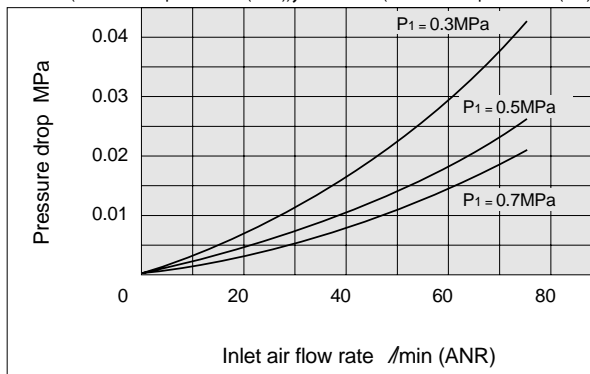
IDG1 (standard dew point -20°C (-4°F))



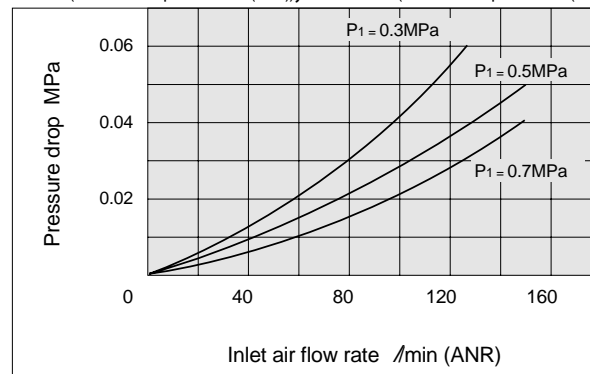
IDG3 (standard dew point -20°C (-4°F)), **IDG3H** (standard dew point -15°C (5°F))



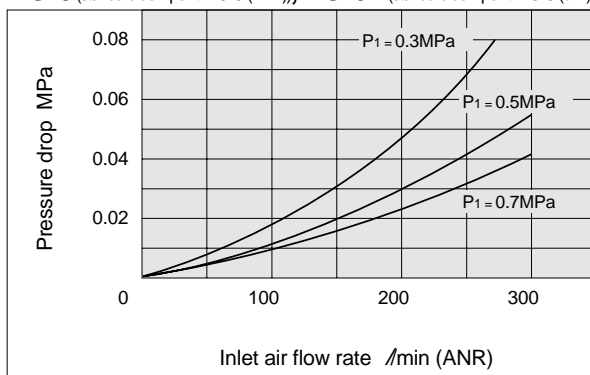
IDG5 (standard dew point -20°C (-4°F)), **IDG5H** (standard dew point -15°C (5°F))



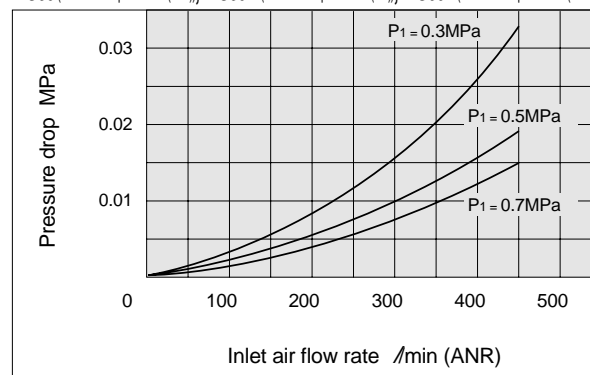
IDG3 (standard dew point -20°C (-4°F)), **IDG10H** (standard dew point -15°C (5°F))



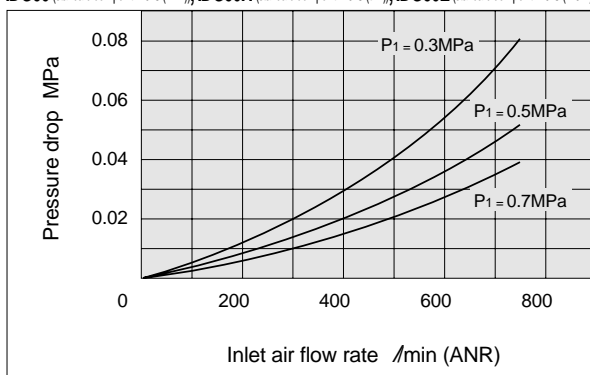
IDG20 (standard dew point -20°C (-4°F)), **IDG20H** (standard dew point -15°C (5°F))



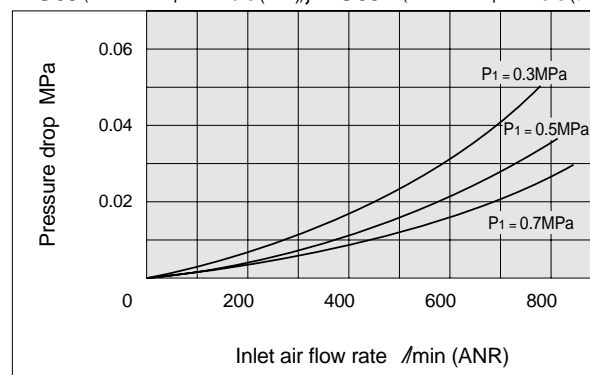
IDG30 (standard dew point -20°C (-4°F)), **IDG30H** (standard dew point -15°C (5°F)), **IDG30L** (standard dew point -40°C (-40°F))



IDG50 (standard dew point -20°C (-4°F)), **IDG50H** (standard dew point -15°C (5°F)), **IDG50L** (standard dew point -40°C (-40°F))



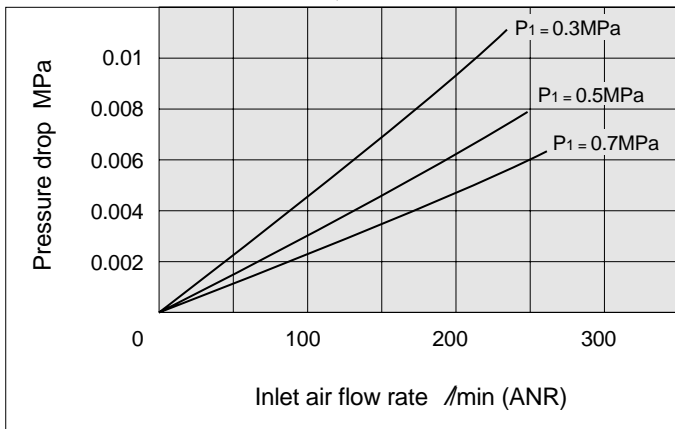
IDG60 (standard dew point -20°C (-4°F)), **IDG60H** (standard dew point -15°C (5°F))



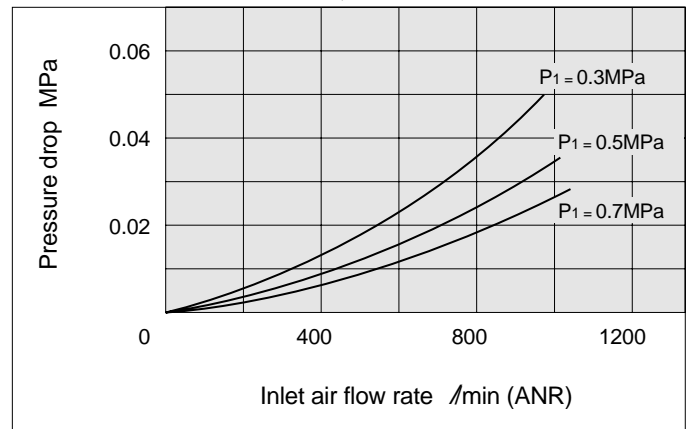
Note: 1 /min = 0.0350SCFM
1MPa = 145psi

Conditions: Inlet air temperature 25°C (77°F), P_i: Inlet air pressure

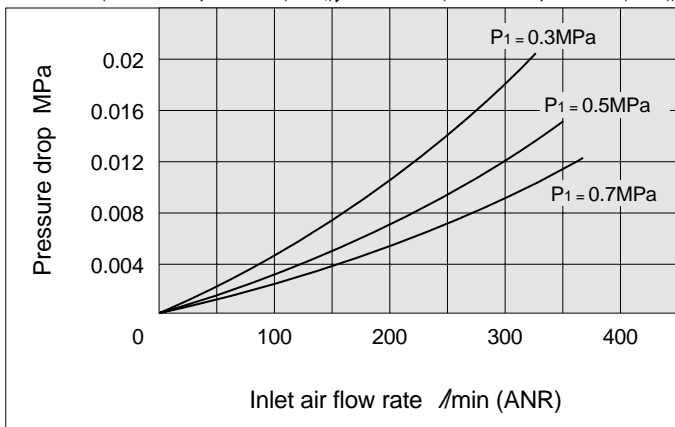
IDG60L (standard dew point -40°C (-40°F)), **IDG60S** (standard dew point -60°C (-76°F))



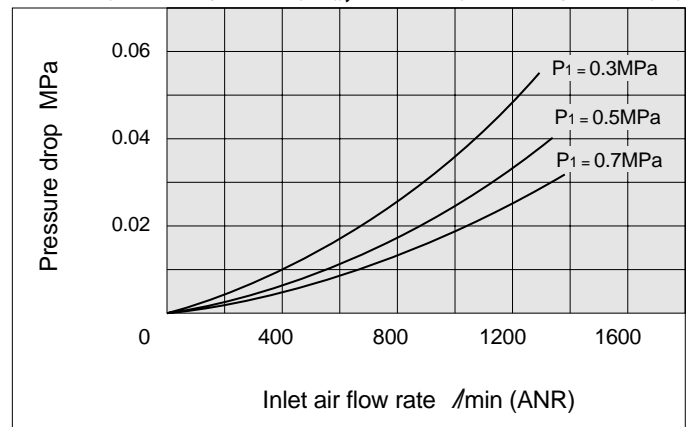
IDG75 (standard dew point -20°C (-4°F)), **IDG75H** (standard dew point -15°C (5°F))



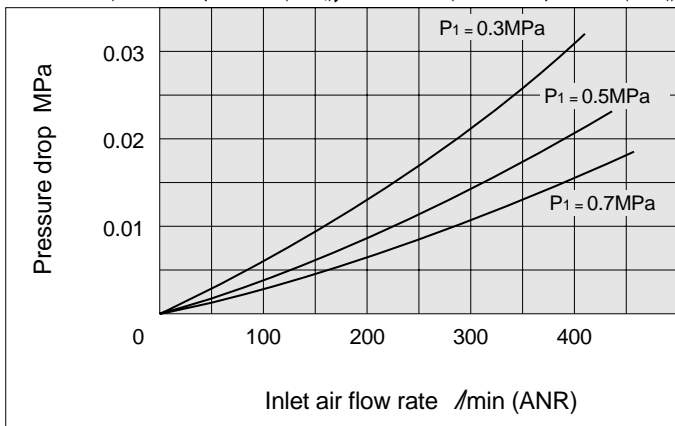
IDG75L (standard dew point -40°C (-40°F)), **IDG75S** (standard dew point -60°C (-76°F))



IDG100 (standard dew point -20°C (-4°F)), **IDG75H** (standard dew point -15°C (5°F))



IDG100L (standard dew point -40°C (-40°F)), **IDG100S** (standard dew point -60°C (-76°F))

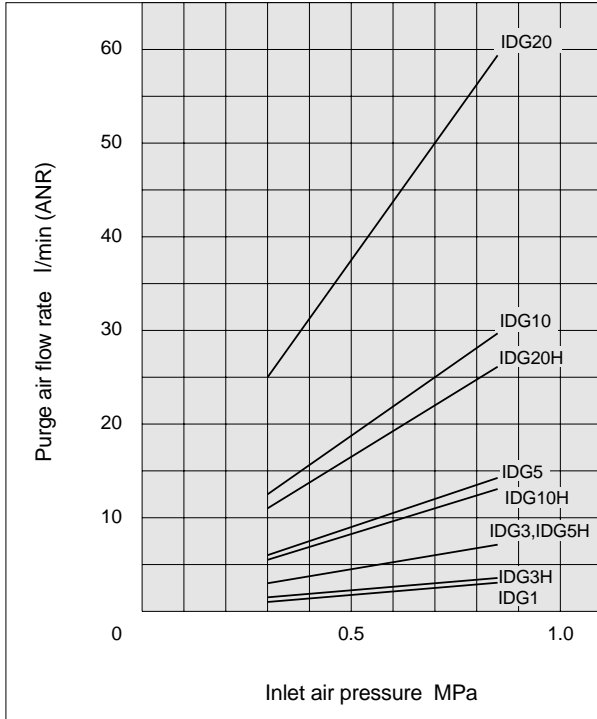


Note: 1 l/min = 0.0350SCFM
1MPa = 145psi

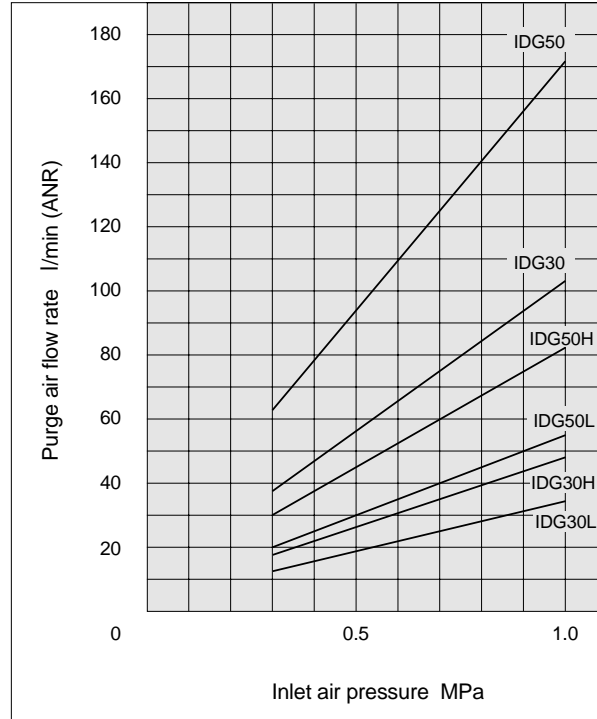
Purge Air Flow Rate Charts

Condition: Inlet air temperature 25°C (77°F)

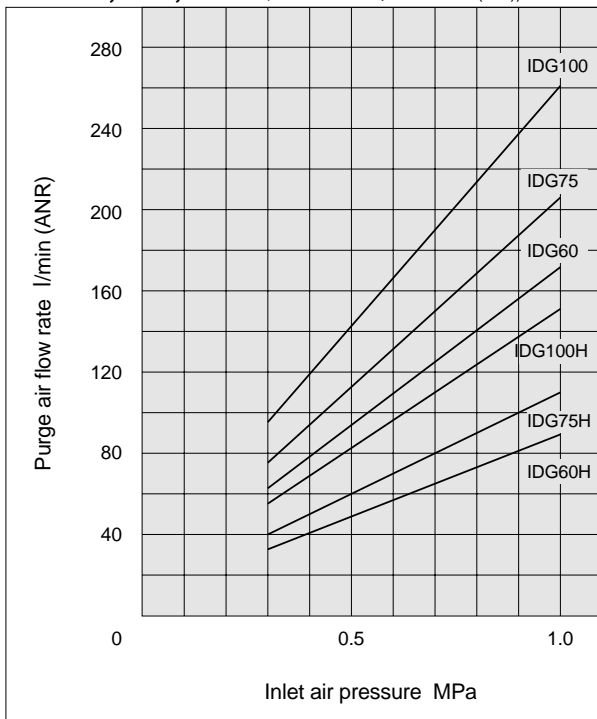
IDG1, 3, 5, 10, 20 (standard dew point -20°C (-4°F))
IDG3H, 5H, 10H, 20H (standard dew point -15°C (5°F))



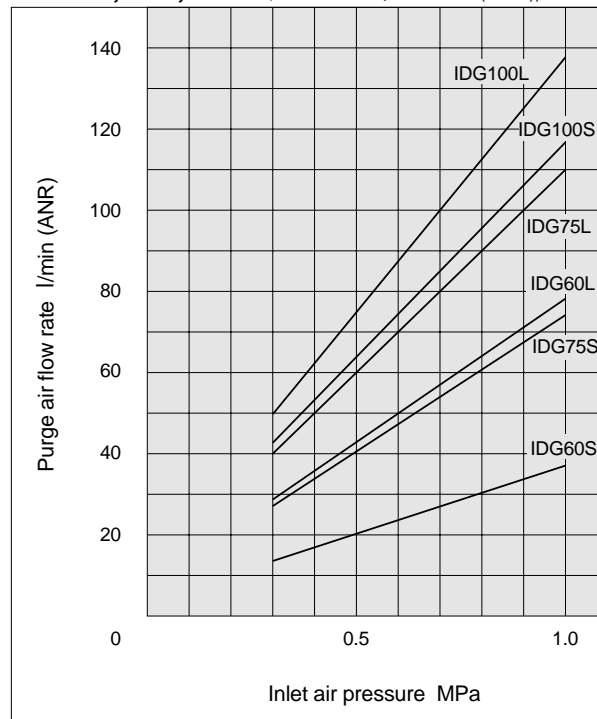
IDG30, 50 (standard dew point -20°C (-4°F))
IDG30H, 50H (standard dew point -15°C (5°F))
IDG30L, 50L (standard dew point -40°C (-40°F))



IDG60, 75, 100 (standard dew point -20°C (-4°F))
IDG60H, 75H, 100H (standard dew point -15°C (5°F))





IDG60L, 75L, 100L (standard dew point -40°C (-40°F))
IDG60S, 75S, 100S (standard dew point -60°C (-76°F))




Note: 1/min = 0.0350SCFM
 1MPa = 145psi

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by a label of "**Caution**", "**Warning**" or "**Danger**". To ensure safety, be sure to observe ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

 **Caution** : Operator error could result in injury or equipment damage.

 **Warning** : Operator error could result in serious injury or loss of life.

 **Danger** : In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414: Pneumatic fluid power – Recommendations for the application of equipment to transmission and control systems

Note 2) JIS B 8370: General Rules for Pneumatic Equipment

Warning

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

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

Compressed air can be dangerous if handled incorrectly. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

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

1. Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
2. When equipment is to be removed, first confirm the safety process as mentioned above.
3. Before machinery/equipment is restarted, first confirm that safety measures are implemented, and proceed with caution.

4. Contact SMC if the product is to be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

Air Cleaning Equipment Precautions 1
Be sure to read before handling

Precautions on Design

Employ a safe design so that the following type of unexpected conditions will not occur.

⚠ Warning

1. Design so that high temperature compressed air does not flow downstream.

In case of cooling equipment failure (stoppage of cooling water in water cooled type after cooler, stoppage of fan motor in air cooled type after cooler, etc.) on the air supply side, high temperature compressed air can flow downstream and cause damage or malfunction of downstream equipment (separators, air dryers, etc.).

2. Use a design that allows for stoppage of the compressed air supply.

Compressed air flow may be stopped by clogging of separators, etc.

⚠ Caution

1. Use a design that prevents reverse pressure and back flow.

Reverse pressure and back flow can cause equipment damage or malfunction, etc.

Give attention to safety measures, including handling procedures.

Selection

⚠ Warning

1. When selecting equipment, first adequately confirm the purpose for which it will be used, the required specifications and the operating conditions (pressure, flow rate, temperature, environment), etc. Then select equipment from the latest catalogs without exceeding the specification ranges. Contact SMC in advance regarding any questions.

2. Do not use for caisson shields, breathing, medical treatment or for blowing of medicine or food products which will enter the human body.

This cleaning equipment is exclusively for use with industrial compressed air, and should not be used for other applications. If other application is unavoidable, give attention to safety measures and contact SMC in advance.

3. This product cannot be used on board vehicles or vessels.

This product cannot be used on board vehicles, vessels or other transportation devices, because vibration will cause damage. If this type of use is unavoidable, contact SMC in advance.

Selection

⚠ Caution

1. Do not allow flow greater than the rated flow rate.

If the flow exceeds the rated flow rate even momentarily, this can cause drainage and oil to be sprayed downstream or cause damage, etc.

2. The product cannot be used with low pressure air (blowers).

Cleaning equipment is exclusively for use with compressed air at a minimum operating pressure determined according to the equipment. Using below the minimum operating pressure can cause reduced performance and malfunction. If this type of use is unavoidable, contact SMC in advance.

Mounting

⚠ Caution

1. Confirm the mounting position.

Since the mounting position is different for each piece of equipment, this should be confirmed either in this catalog or in the instruction manual. Mounting in a tilted position can cause faulty drainage discharge, auto drain malfunction and damage in some types of equipment.

2. Ensure sufficient maintenance space.

When installing and mounting, be sure to allow the space required for maintenance and inspections. Confirm the necessary maintenance space in the instruction manual for each piece of equipment.

Piping

⚠ Caution

1. Preparation before piping

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe.

2. Wrapping of pipe tape

When screwing together pipes and fittings, etc., be certain that chips from the pipe threads and sealing material do not get inside the piping.

Furthermore, when pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.

3. Implement measures to prevent drainage from collecting inside piping.

Drains should be installed in the lower sections of piping that rises, or piping should be designed with a slight taper provided along the direction of flow so that drainage will not accumulate.

4. Confirm IN and Out ports.

When piping is being installed, take care to prevent incorrect connection of the water and air sides, or the IN and OUT ports.

Air Supply**⚠ Warning****1. Do not use with fluids other than compressed air.**

Cleaning equipment is designed exclusively for use with compressed air. Contact SMC in advance if a fluid other than compressed air is to be used.

2. Do not use compressed air which contains chemicals, organic solvents or corrosive gases.

Do not use compressed air containing chemicals, organic solvents, salt or corrosive gases, as this can cause damage and/or malfunction, etc.

3. Use within the operating pressure range.

The operating pressure range is determined by the equipment being used. Operation beyond this range can cause damage, failure or malfunction.

Operating Environment**⚠ Warning****1. Do not use in the following environments, as this can cause failure.**

1. Locations with an atmosphere of corrosive gases, organic solvents or chemical solutions, or where there may be contact with these.
2. Locations where there is contact with sea spray, water or steam.
3. Locations which receive direct sunlight. (Sunlight should be blocked to prevent deterioration of resin from ultra violet rays, and over heating, etc.)
4. Locations near heat sources with poor ventilation. (Heat sources should be blocked off, because radiated heat may cause damage due to softening of materials.)
5. Locations with impacts or vibration. (Check the specifications for each series.)
6. Locations with high moisture and dust. (Contact SMC in advance.)

2. Adhere to the fluid and ambient temperature ranges.

The fluid and ambient temperatures are determined by the equipment being used. Operation outside of the prescribed range can cause damage, failure or malfunction, etc.

Maintenance**⚠ Warning****1. If an abnormality occurs, stop the compressed air.**

If abnormalities such as smoke, unusual odor or unusual noise occur, stop the inflow of compressed air, as this may indicate a fire.

2. When performing inspections, set the compressed air pressure at zero.

When the compressed air side is to be disassembled for auto drain inspection, separator element replacement or film module replacement, etc., confirm that the pressure is at zero before proceeding.

⚠ Caution**1. Do not place heavy objects on the unit or use it as a step.**

The equipment may be deformed or damaged, and if balance is lost, falling may cause injury.

2. Discharge drainage regularly.

Accumulation of drainage in equipment, piping or other areas can cause malfunction of the equipment or unexpected trouble due to splash over into the downstream side, etc. Therefore, the amount of drainage and the operation of auto drains should be checked every day.

Specific Product Precautions 1

Be sure to read before handling

Refer to pages 43 through 45 for safety instructions and air cleaning equipment precautions

Precautions on Design

Warning

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

Consult SMC in advance, as some models are not suitable for dehumidification of air for breathing.

Caution

1. 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.

2. When very clean air is required

(supply to air bearings, blowing of semiconductor parts, etc.)

Install a micro mist separator or super mist separator on the downstream side (end terminal) of the membrane air dryer (unit).

Furthermore, grease is used inside the regulator that is used for units (V type). When very clean air is required, install a separator as mentioned above on the downstream side, or instead of a regulator, use the order made specification (refer to page 35) fitted with a micro mist separator regulator (series AWD).

3. Time to reach the rated dew point

A certain amount of time is required to reach the rated dew point after beginning the flow of air into the membrane air dryer. Using the times below as a guide, begin operating downstream equipment after reaching the rated dew point.

Standard dew point -20°C , -15°C : Approx. 10min.

Standard dew point -40°C : Approx. 30 min.*

Standard dew point -60°C : Approx. 120 min.*

*This time can be shortened as described below.

- 1) Provide a valve on the downstream 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 downstream equipment.

4. Dehumidification performance when inlet air temperature changes

The performance charts indicate an inlet air temperature of 25°C . See below for other temperatures.

For each increase of 1°C in the inlet air temperature, the outlet air atmospheric pressure dew point increases by approximately 0.8°C .

(Inlet air pressure: 0.7MPa , Outlet air flow rate: At rated flow rate)

Selection

Caution

1. Consider the purge air flow rate.

Read 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

Confirm the operating air flow rate and pressure, and select a membrane air dryer in accordance with the model selection method (page 37). If a membrane air dryer is selected based on the port sizes of previously installed equipment, a model may be selected which is too small and the dehumidification capacity may be insufficient.

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

As the length of the tubing for purge air discharge increases, dehumidification performance decreases. Use the specified tubing size and keep the length within 5 meters or less. Refer to "Outlet air atmospheric pressure dew point by purge air discharge tube length" on pages 3 and 10 for information on this subject.

4. Auto drain selection for the unit style

When the compressor being used is 2.2kW ($300/\text{min}$ (ANR)) or less, use a N.C. auto drain (Symbol: C). If a N.O. auto drain (Symbol: D) is used at 2.2kW or less, the unit may blow continuously without pressure rising inside the mist separator. However, a differential pressure type auto drain can be used even at 2.2kW or less.

Mounting

Caution

1. Do not obstruct the purge air discharge ports.

If purge air back pressure becomes too high or purge air stops flowing, dehumidification performance will decrease or become impossible.

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

If the inlet air contains oil or water drops, etc., 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. Install a regulator on the downstream side of the membrane air dryer.

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

4. Use adequate care in handling.

There is a danger of damage if dropped.

Refer to pages 43 through 45 for safety instructions and air cleaning 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.

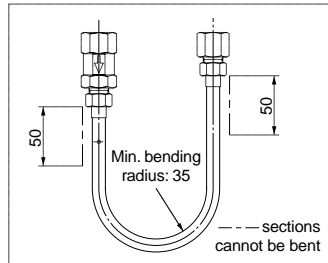
(for IDG30 to IDG100, IDG30H to IDG100H, IDG30L to IDG100L and IDG60S to IDG100S)

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 35mm or more. Furthermore, do not bend the sections that are within 50mm of the ends of the membrane module.

**4. With fittings for purge air discharge**

(Option: P)

The piping of purge air for dehumidification and for the dew point checker can be combined, but do not merge these with compressed air lines or drain piping, etc., as this can cause damage.

Piping

⚠ Caution**1. Use of tools**

Hold the upper portion of the body (die-cast aluminum 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 the prescribed tubing size and keep the length within 5 meters or less.

Also, be sure that the tubing does not stand up or become folded over.

3. Piping materials for low dew point air

When air with a low dew point (-40°C or less) is required, do not use nylon tubing for the membrane air dryer's downstream piping. A characteristic of nylon tubing is that it is affected by the ambient air, and it may not be possible to obtain the specified low dew point at the end of the tube. For low dew point air, use stainless steel or fluororesin piping.

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

(for IDG60 to IDG100, IDG60H to IDG100H, IDG60L to IDG100L and IDG60S to IDG100S)

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 supply is necessary which has a supply capacity at least equal to the "required outlet air flow rate (dry air flow rate) + purge air flow rate". Confirm the purge air flow rate with the purge air flow rate charts (page 41).

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's body is cooled by the surrounding air, water drops may accumulate inside and reduce its dehumidification capacity.

Specific Product Precautions 3

Be sure to read before handling

Refer to pages 43 through 45 for safety instructions and air cleaning 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. Confirming 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 moist) Note: Atmospheric pressure dew point is approx. -10°C or more]

It takes about 1 hour from the start of air flow for the dew point indicator color to change.

2. Confirmation of oil contamination with the dew point indicator

When the dew point indicator color turns brown, a large amount of oil has contaminated the membrane air dryer. In this case, replace the dew point indicator and membrane module.

3. Element replacement period

The elements of the mist separator and micro mist separator or micro mist separator with pre-filter, which are installed on the inlet side of the membrane air dryer, should be replaced after about two years of use.

Even within this period, replace the element if the drop in the unit's pressure reaches 0.2MPa. When equipped with a micro mist separator with pre-filter, replace the element when the red portion of the element service indicator reaches completely to the top.

Refer to the order made specifications on page 33 regarding the element service indicator for confirmation of pressure drop.

4. Membrane module replacement period

Replace the membrane module if the dew point indicator's color turns white, pink or brown.

When periodic replacement is to be performed, the schedule will depend on the operating conditions, but as a general rule replacement should be performed after four years of use. Even within this period, replace the module if the dew point indicator's color changes to any of the colors mentioned above.

5. Tightening torque for mounting of membrane module and case

(for IDG5, 10, 20, 5H, 10H, 20H)

Tighten within the prescribed tightening torque range.

Tightening outside of this range can cause damage to the membrane module, case and mounting screws, or cause poor sealing, etc.

(Confirm the tightening torque range in the instruction manual.)

6. Pressure gauge installation

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

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