

INSTRUCTION MANUAL

SUPER DRYER

SD300E, SD400E-W
SD300D, SD400D-W

- Please read this instruction manual carefully before using this product, particularly the section describing safety.
- Retain this instruction manual with the product for further consultation whenever necessary.

Thank you very much for purchasing our refrigerated air dryer, Super dryer.

This manual explains basic points of installation, operation, etc. to have our dryers perform at their best. Be sure to read this manual before using your dryer.

Keep this manual together with the warranty book.

This manual is edited consisting of the following five sections.

- PRODUCT
- CAUTION
- INSTALLATION
- MAINTENANCE
- MODEL CODING

It is, of course, desirable that you read this manual through before start using the product.

This manual is so edited that a certain idea will be conveyed by reading the related section only, first of all. For instance, just reading the section of the installation, in case that an immediate installation is mandatorily required.

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1. PRODUCT

1-1. Specifications

Item	Model	SD 301E	SD 302E	SD 401E	SD 402E	SD 301D	SD 302D	SD 401D	SD 402D
		-W	-W	-W	-W	-W	-W	-W	-W
Applicable conditions	Media	Compressed air							
	Inlet pressure MPa	0.4~1.0							
	Proof pressure MPa	1.5							
	Inlet air temperature °C	5~50							
	Ambient temperature °C	5~50							
Standard rating	Outlet atmospheric dew point	-15				-20			
	Inlet air flow ℓ/min(ANR)	75	150	300	450	125	250	500	750
	Purge flow ℓ/min(ANR)	67	135	270	405	100	200	400	600
	Inlet pressured dew point °C	25							
	Inlet air pressure MPa	0.7							
	Inlet air temperature °C	25							
	Ambient temperature °C	25							
	Mass kg	0.6	0.9	1.4	1.8	0.6	0.9	1.4	1.8

Note : Water drop and oil (less than 0.1mg/m³) to be eliminated from the compressed air supplied to Super dryer.

1-2. Outside drawing

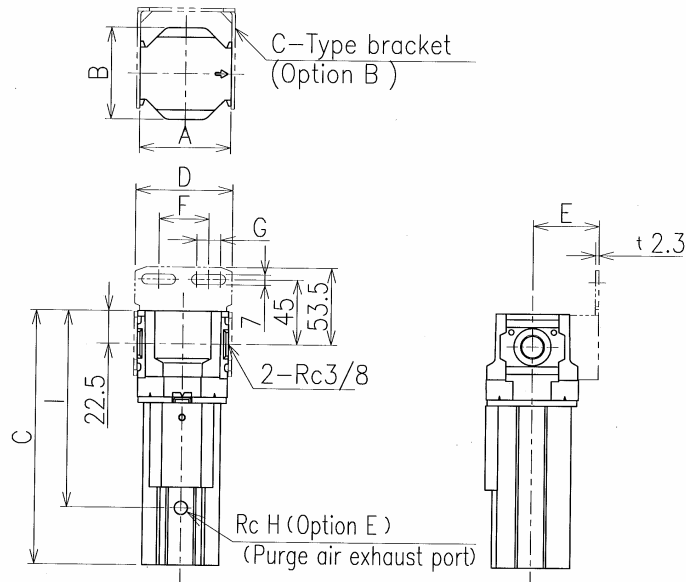


Fig. 1

Model	A	B	C	D	E	F	G	H	I
SD301E/D-W	63	63	175	67	45	34.5	16.5	1/8	135.5
SD302E/D-W	63	63	245	67	45	34.5	16.5	1/8	135.5
SD401E/D-W	80	79	245	84	55	55	14	1/4	164
SD402E/D-W	80	79	315	84	55	55	14	1/4	164

1-3.Model selection

(1) Model selection method

The performance curve of dew point as mentioned above are shown the relationship between output air pressured dew point on condition that inlet air pressure is 0.7 MPa and its temperature is 25°C(saturated). Select the model on the right of the intersection of the required dew point and the required flow.

<Correction method of air flow>

It is necessary that output air flow shall be corrected by each correction curve, except for rated conditions.

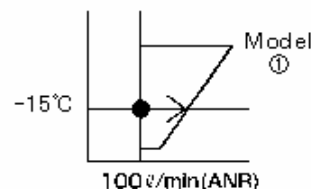
$$(\text{Rated output air flow}) \times (\text{Correction factor}) = (\text{Output air flow})$$

But, in the case of the air by which input air passed along the refrigerated drier, select inlet air temperature as 10 °C regardless of an actual temperature.

(例) Required dew point : - 15°C

Required air flow : 100ℓ/min(ANR)

The model ① which is located on the right of the intersection shall be selected.

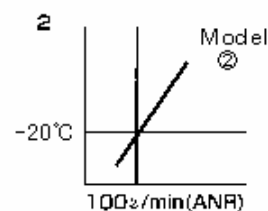
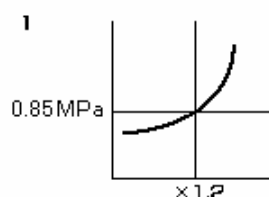


(例) Inlet air pressure : 0.85Mpa

Required dew point : - 20°C

Required air flow : 120ℓ/min(ANR)

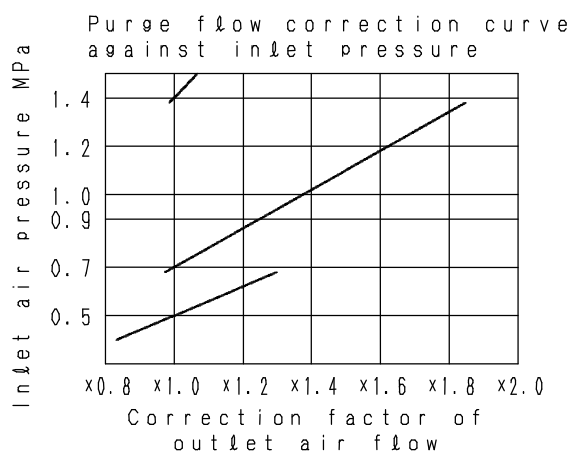
1. The correction factor 1.2 shall be read from outlet air flow correction curve against inlet air pressure.
2. The model ② shall be selected flow performance curve of dew point, since outlet air flow is 120ℓ/min ANR
(=100ℓ/min ANR × 1.2)



(2)Purge flow

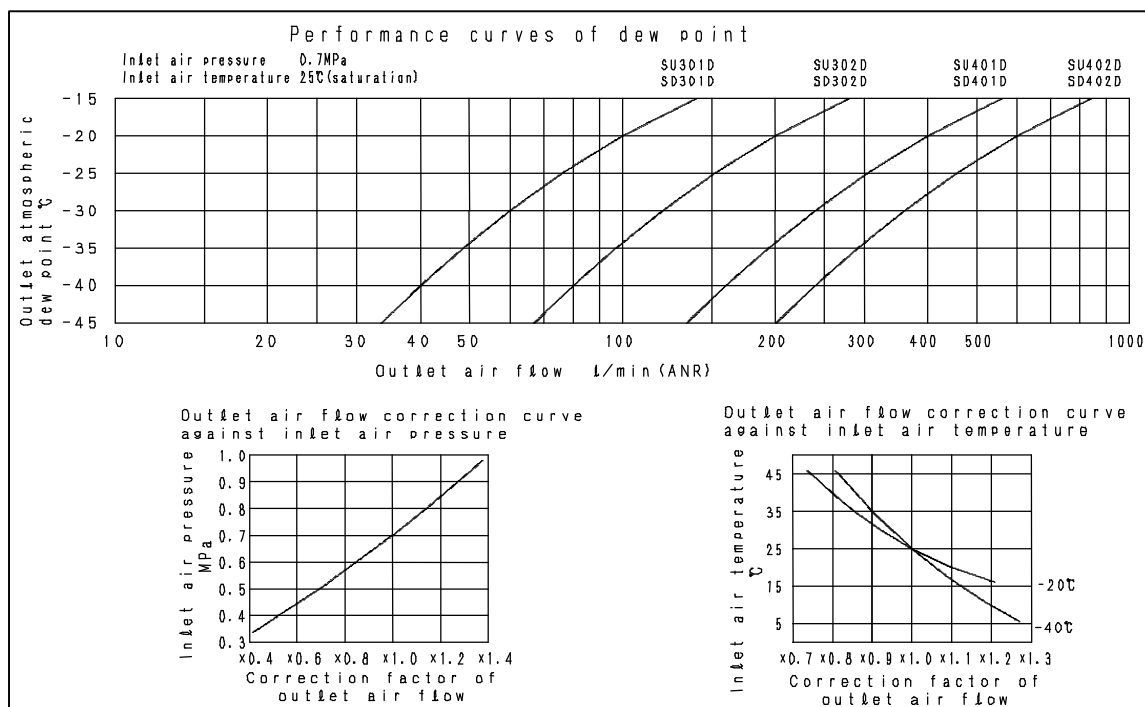
Purge flow is shown in each specification column. The flow which added purge flow to outlet side use air flow should be can be supplied from an inlet.

Purge flow in case inlet air pressure differs from rating turns into flow which applied the correction factor of the right to rated purge flux.

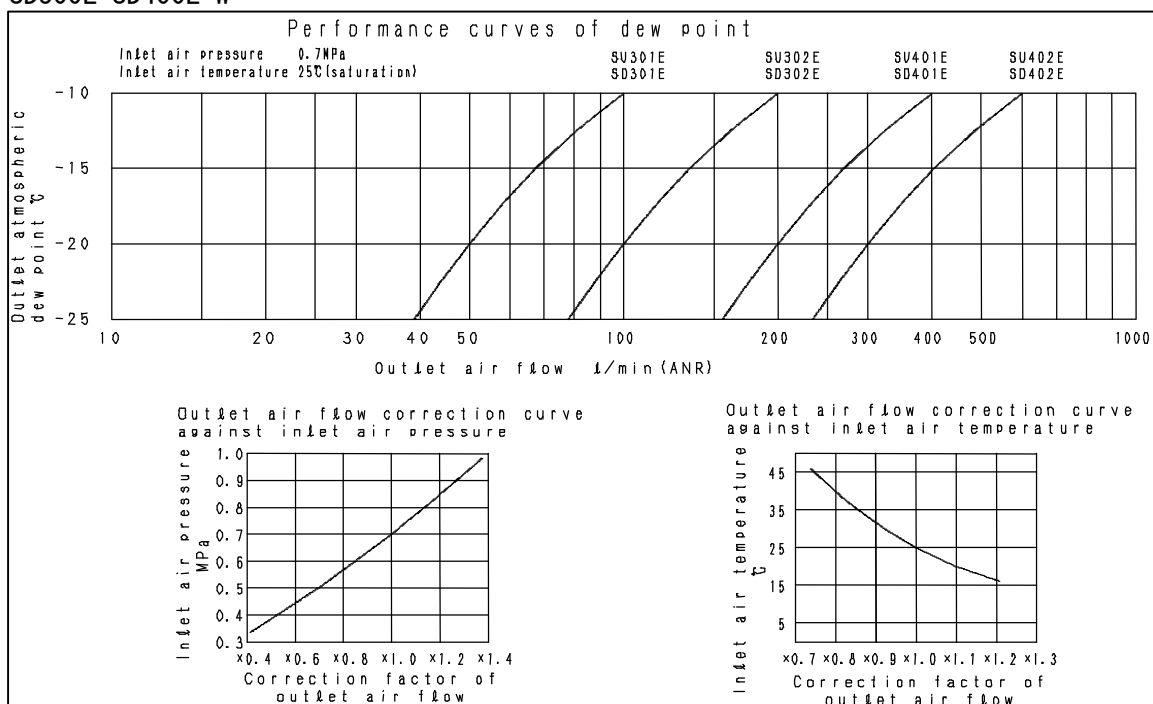


(3) Dew point performance

SD300D-SD400D-W



SD300E-SD400E-W



2. CAUTION

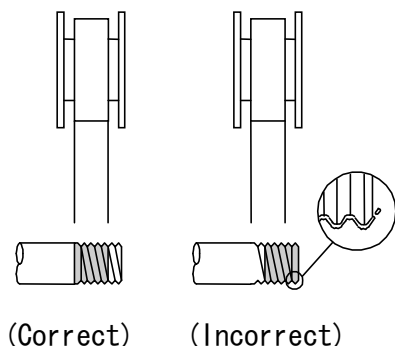
- 1) Use within ambient temperature of 5~60°C.
- 2) Avoid use in the state where inlet air temperature becomes higher than ambient temperature. (An inside may be covered with waterdrop if the main part of a super dryer is cooled.)
- 3) Keep operating pressure below 1.0MPa.
- 4) Avoid installation close to welding or spray painting areas.
- 5) Avoid installation in direct sun light.
- 6) Air filter of 5 μ m filtration and oil mist filter to be installed at inlet of Super dryer when supplied air is lubricated and close to saturated.
- 7) Pressure reducing valve, such as regulator to be installed at outlet of Super dryer.
- 8) Super dryers reduce oxygen content. Do not use for breathing air.

3. INSTALLATION

3-1.Piping

- 1) Install so as an air flow coincides with the directional arrows on the cover.
- 2) Flush air into the pipe to blow out foreign substances and metal chips before piping.
- 3) Leave at least two thread pitches prior to the end of pipe before applying sealant or sealing tape to reduce the possibility of contamination or fowling.

●Seal Tape



●Sealant (Paste)

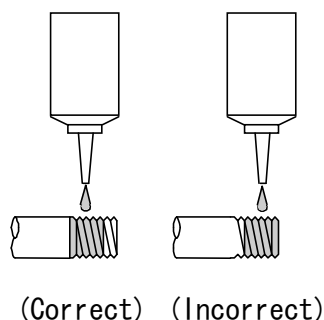


Fig.2

3-2.Installation

- 1) By using C-type bracket of an option, a main part can be directly attached in a panel etc. In this case, please pipe after inserting C-type bracket in a main part.(Refer to Fig. 3)
- 2) When connecting module of a filter or a regulator before and behind a super drier, attachment by C-type bracket cannot be performed. Please attach using T-type bracket. (Refer to Fig. 4)
- 3) Please take a maintenance space 50mm or more in the lower part of a super drier.

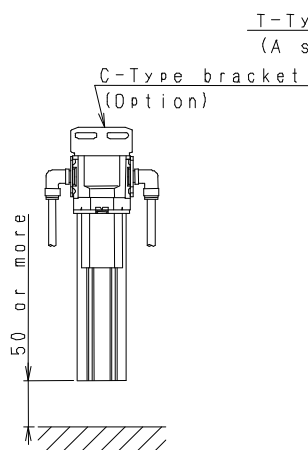


Fig.3

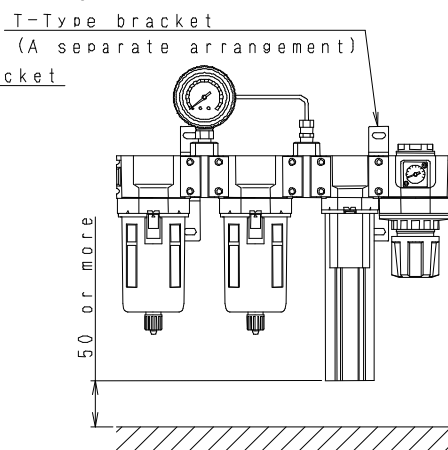


Fig.4

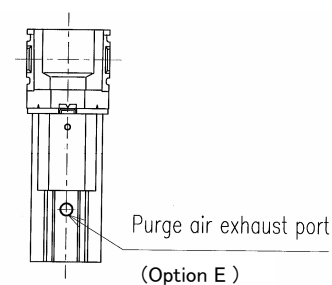


Fig.5

- 4) In case of the option E of SD300-W series, piping of exhaust air should use the hose or piping material of I.D. 5.7 mm or more, and give length as less than 3m. (Refer to Fig. 5)
- 5) In case of the option E of SD400-W series, piping of exhaust air should use the hose or piping material of I.D. 7.2 mm or more, and give length as less than 3m. (Refer to Fig. 5)

4. MAINTENANCE

4-1. Membrane module replacement

- 1) Slide silencer downward by loosening two set screws at silencer portion with hex. bar spanna. (Round nominated 2)
- 2) Turn the tube about 45 degrees in clockwise or in counter clockwise direction and pull it down to remove.
- 3) Remove the membrane module in the down ward. It can be easily removed from the tube using by the side hole in which a tool such as screw driver is pushed.
- 4) Insert a new module to the bottom of the tube. Follow above steps in reverse manner when the tube and silencer is assembled.

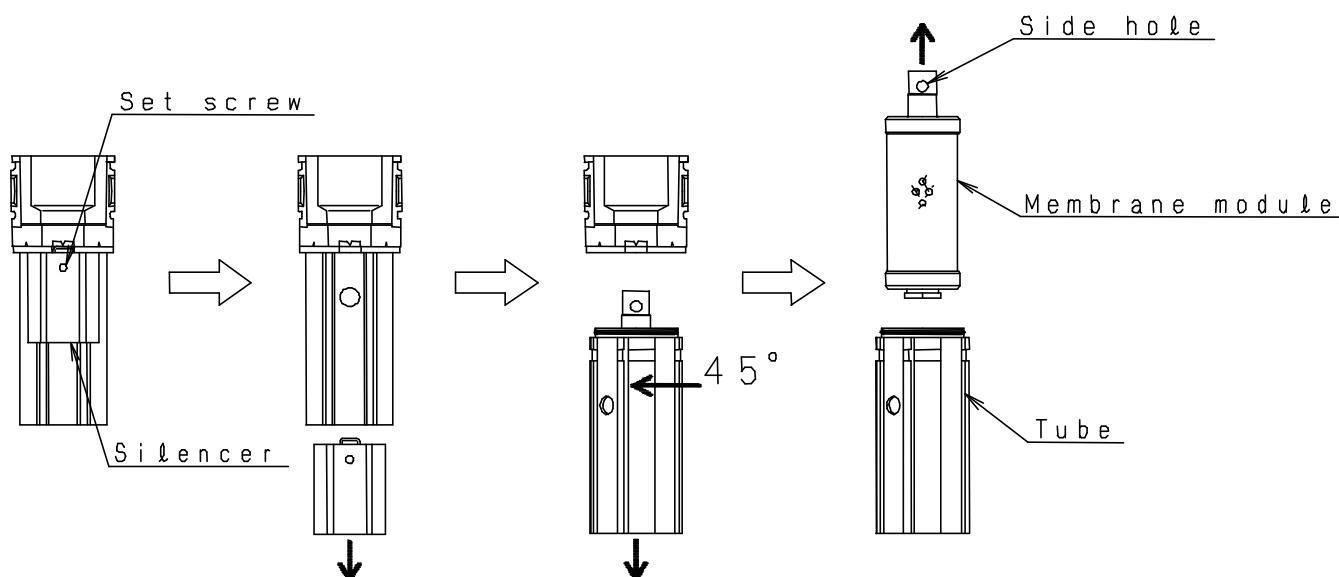


Fig.6

4-2.Maintenance parts

Model code	Part name	Membrane module ass'y	O-ring set
SD301E-05-W-※		SD301E-05-MEMBRANE-ASSY	SD-300-ORING-SET
SD301D-05-W-※		SD301D-05-MEMBRANE-ASSY	
SD301E-07-W-※		SD301E-07-MEMBRANE-ASSY	
SD301D-07-W-※		SD301D-07-MEMBRANE-ASSY	
SD302E-05-W-※		SD302E-05-MEMBRANE-ASSY	
SD302D-05-W-※		SD302D-05-MEMBRANE-ASSY	
SD302E-07-W-※		SD302E-07-MEMBRANE-ASSY	
SD302D-07-W-※		SD302D-07-MEMBRANE-ASSY	
SD401E-05-W-※		SD401E-05-MEMBRANE-ASSY	SD-400-ORING-SET
SD401D-05-W-※		SD401D-05-MEMBRANE-ASSY	
SD401E-07-W-※		SD401E-07-MEMBRANE-ASSY	
SD401D-07-W-※		SD401D-07-MEMBRANE-ASSY	
SD402E-05-W-※		SD402E-05-MEMBRANE-ASSY	
SD402D-05-W-※		SD402D-05-MEMBRANE-ASSY	
SD402E-07-W-※		SD402E-07-MEMBRANE-ASSY	
SD402D-07-W-※		SD402D-07-MEMBRANE-ASSY	

5. MODEL CODING

SD		(a)	(b)	—	(c)	— W —	(d)
Product	(a) Series	(b) Type		(c) Inlet air pressure		(d) Option	
Super dryer	301	E	Low purge type	05	0.5MPa	Blank	None
	302	D	Standard type	07	0.7MPa	B	With C-type bracket
	401					X1	IN-OUT Reverse
	402					E	Common exhaust