Small-volume Adsorbent Dryers models MD4/SW & MD4/IND

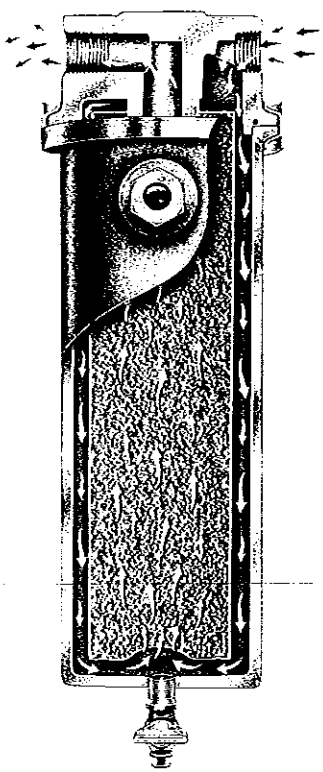
Mini Dryers— with disposable cartridges

ULTRA-DRY COMPRESSED AIR
FOR MOISTURE-SENSITIVE EQUIPMENT,
CONTROLS AND PROCESS MATERIALS

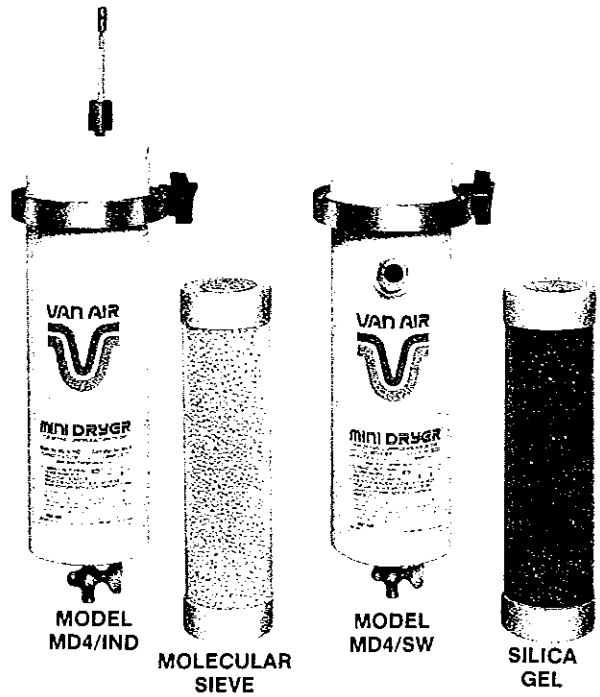
Van Air Mini Dryer supplies - 40°F pressure dew point for pneumatic equipment that requires a small volume of extremely dry compressed air.

The Model MD4/SW uses a disposable silica gel cartridge and has a sight window in the body of the dryer to view the condition of the silica gel. The Model MD4/IND uses a disposable molecular sieve cartridge, and it has a moisture indicator on top of the mini dryer housing to indicate the condition of the material in the cartridge.

Replacing the Mini Dryer cartridge is a quick, clean procedure. No tools are needed; no handling or actual contact with the desiccant is involved. The operation can be completed in less than two minutes by in-plant personnel or regular staff members.



Wet inlet air is channeled around and down the housing interior and then flows upward through the desiccant where moisture particles are adsorbed by the desiccant. The outlet air has a constant -40°F pressure dew point.



No regular maintenance is required. Van Air Mini Dryers may be installed indoors or outdoors in ambient temperatures up to 100°F. Only inlet and outlet air connections are needed. Mini Dryers also perform effectively in cyclic or sporadic-flow situation. Pressure drop across the dryer is negligible. The unit is rated for 300 psig maximum working pressure.

DISPOSABLE CARTRIDGE: The Mini Dryer cartridge contains a pre-measured desiccant charge in a clear polycarbonate tube with urethane foam pads and metal screens at the inlet and outlet to eliminate any possibility of particle migration.

Silica gel: Each MD4/SW cartridge adsorbs 6.1 ounces (2670 grains) of moisture. A color indicator in the desiccant provides continuous monitoring of the desiccant condition. As more moisture is adsorbed the drying zone progresses upward. When it reaches sight window level a cartridge change is indicated. During a cycle the color changes gradually from medium blue to light pink.

Molecular sieve: The cartridge for the MD4/IND contains molecular sieve, a material that has uniform pores, enabling the material to adsorb selectively. This selectivity results in an extremely high level of moisture removal capacity. In fact, one pound of this material contains approximately 2,970,000 square feet of adsorptive surface.

(See reverse side for specifications)

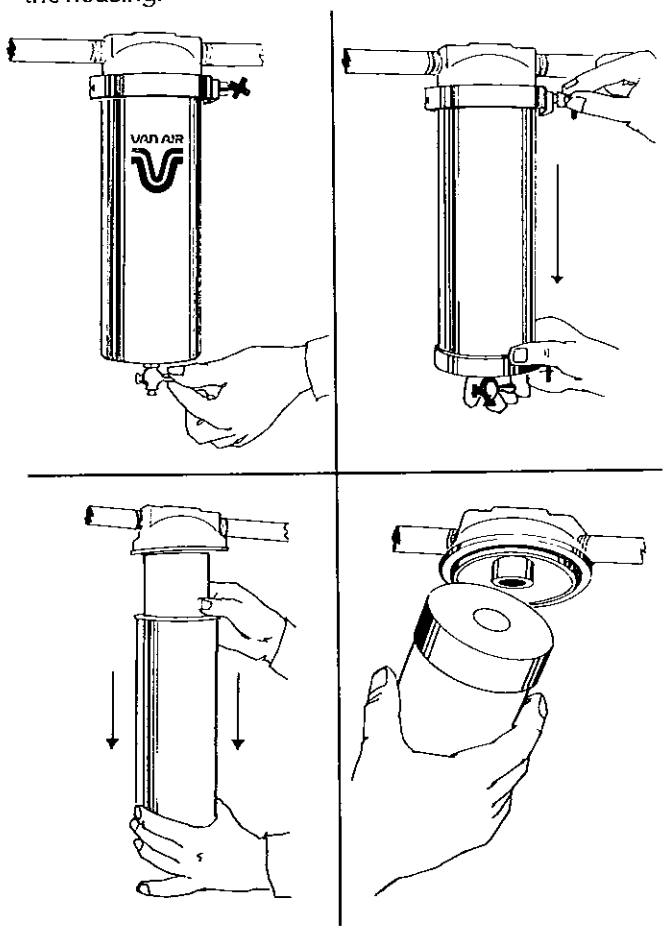
VAN AIR SYSTEMS INC

MAXIMUM OPERATING RANGE CONDITIONS WITH CONSTANT FLOW CONDITIONS

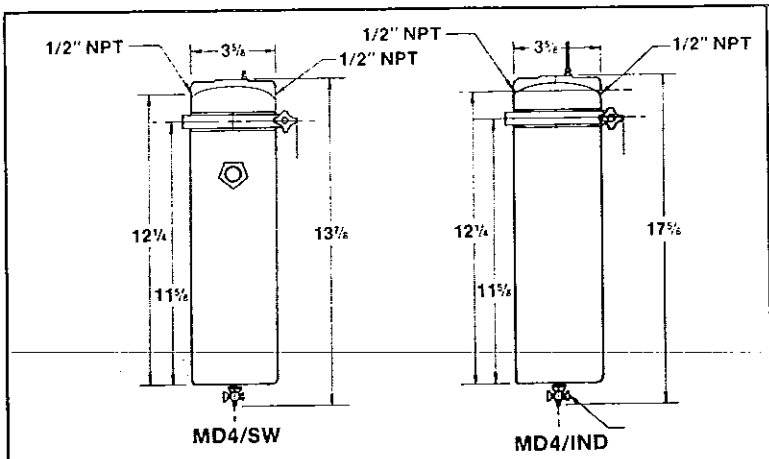
WORKING PRESSURE	50 PSIG	100 PSIG	150 PSIG	200 PSIG	250 PSIG	300 PSIG
MAXIMUM FLOW	2 SCFM	4 SCFM	6 SCFM	8 SCFM	10 SCFM	12 SCFM

The maximum operating ranges for Mini Dryers listed above are based on constant flows. With sporadic or cyclic flows, capacities vary according to individual installation conditions. In some instances higher constant flows may also be processed through the Mini Dryer. For technical assistance regarding specific applications, contact Van Air.

INSTALLATION: Replacing the cartridge is completed in four easy steps: 1) after depressurizing vessel, loosen the quick-disconnect clamp 2) remove the housing from the head 3) pull the used cartridge off the boss 4) slide the fresh cartridge on the boss and replace the housing.

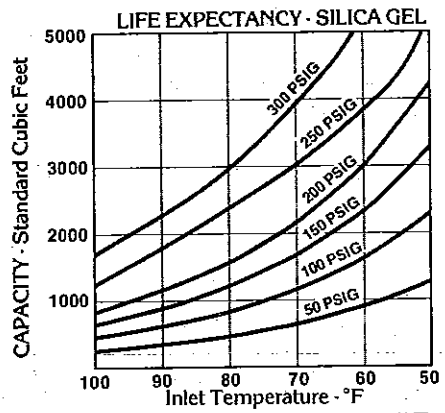


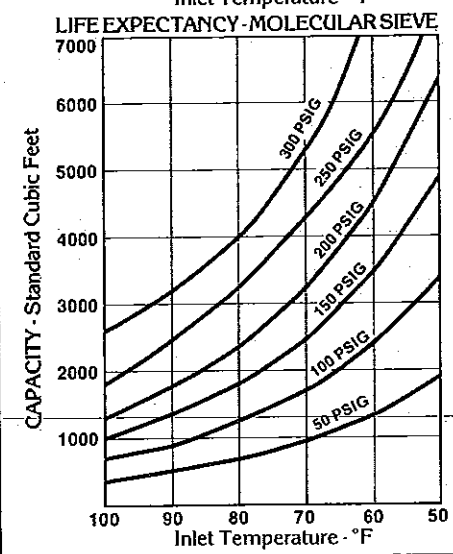
TO REORDER MINI DRYER CARTRIDGES: Replacement cartridges (Model No. SG23 or MS-16) are available from local Van Air distributors or direct from the Van Air factory in Lake City, Pa. Orders will be shipped within 72 hours after receipt.



SPECIFICATIONS

- Housing: Cast-aluminum alloy
- Maximum working pressure: 300 psig
- Maximum inlet air temperature: 100°F
- Inlet & outlet: 1/2" NPT
- Depressurizing valve: 1/4" brass petcock (manual)
- Vessel weight: 4½ pounds
- Cartridge weight: silica gel-23 oz. Molecular sieve - 16 oz.
- Pressure differential: 1 psid at 100 psig
- Finish: Enamel
- Clearance required: 10" under housing (for cartridge replacement)
- Sight window: 1/2" diameter (model MD4/SW only)
- Indicator purge flow: Less than 1 SCFH (average .5 SCFH) (MD4/IND only)
- Cartridge packaging: Sealed, moisture-proof bag (MIL SPEC B-131-E, Class 2)





MINI DRYER CARTRIDGE LIFE EXPECTANCY (SCF at 100% RH)

To find the volume of 100% RH air which can be processed through a Mini Dryer cartridge before the desiccant becomes saturated (based on dynamic conditions), determine the inlet air temperature to the cartridge and the operating pressure. On the charts, locate the vertical line for the desired inlet air temperature; then read up to the operating pressure. At the point where these lines intersect, read across to the SCF on the left. Capacities increase when inlet air is less than saturated; apply the adjustment factors shown below to the scf shown on the charts.

ADJUSTMENT FACTORS FOR RELATIVE HUMIDITIES LESS THAN 100%

RELATIVE HUMIDITY	ADJUSTMENT FACTOR
90%	1.065
80%	1.165
70%	1.227
60%	1.315
50%	1.324
40%	1.338
30%	1.361

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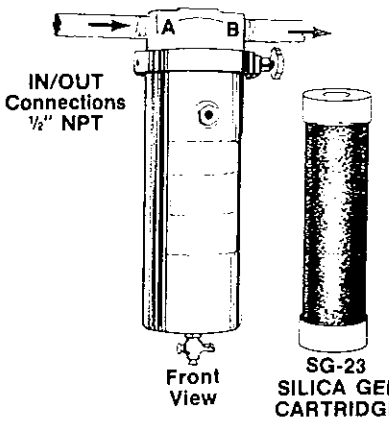
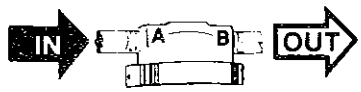
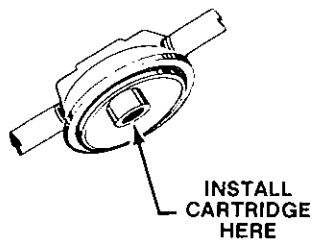
MINI DRYER . . . Model MD4/SW



NOTE: Housing & cartridge shipped in separate cartons.





For Drying Compressed Air or Gas to −40°F Pressure Dew Point

- Locate Mini Dryer as close to equipment to be protected as possible.
- Where condensed moisture is present in the air line, install a separator upstream from Mini Dryer.
- Install inlet and outlet valves for isolating dryer during cartridge change.
- Check markings on head of vessel; then connect inlet piping to side marked "A" and outlet to side "B".

CAUTION

Make sure that direction of air flow is from inlet "A" to outlet "B". Improper connection will result in moisture downstream.

- When equipment requiring sudden air surges is located downstream of Mini Dryer, install a flow control device after the dryer.

The Mini Dryer silica gel cartridge (SG23) is shipped in a separate carton. Before operating dryer, install cartridge as follows:

(1) Close air supply and open petcock to depressurize vessel.
(2) Grasp vessel with one hand and turn handle with other to loosen. Slide clamp down over vessel.
(3) Remove moisture-proof wrapper from cartridge; also remove foil seals from **both** end caps on cartridge.
(4) Place end cap firmly on boss in head of vessel. (See above.)
(5) Slide dryer housing over cartridge and position evenly against lip of dryer head, making sure that housing O-ring is correctly seated in groove.
(6) Slip clamp up over housing and fit over lips of head and housing. Turn handle to tighten clamp securely on dryer.
(7) Close drain petcock (and open inlet and outlet shut-off valves). Dryer is now ready for operation.

Replacement Parts

Description	Part No.
Desiccant Cartridge	SG23
Sight Glass	26-0101
Housing O-ring	38-0103
Clamp, Housing	38-0117
Petcock ¼", T-Handle	14-0992

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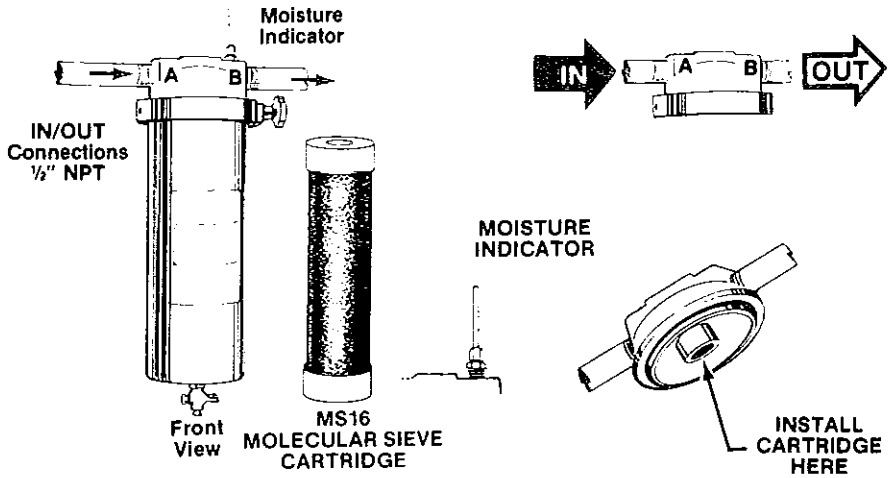
VAN AIR DRYERS LTD Oakville, Ontario, Canada
VAN AIR AB Stockholm, Sweden

Mfd in USA
INSTRUCTIONS IMD/SW-3/485
supersedes IMD/SW-2

MINI DRYER . . . Model MD4/IND



NOTE: Housing & cartridge shipped in separate cartons. (Indicator shipped with housing.)

For Drying Compressed Air or Gas to −40°F Pressure Dew Point

- Locate Mini Dryer as close to equipment to be protected as possible.
- Where condensed moisture is present in the air line, install a separator upstream from Mini Dryer.
- Install inlet and outlet valves for isolating dryer during cartridge change.
- Check markings on head of vessel; then connect inlet piping to side marked "A" and outlet to side "B".

CAUTION

Make sure that direction of air flow is from inlet "A" to outlet "B". Improper connection will result in moisture downstream.

- When equipment requiring sudden air surges is located downstream of Mini Dryer, install a flow control device after the dryer.

The Mini Dryer molecular sieve cartridge (MS16) is shipped in a separate carton. Before operating dryer, install cartridge as follows:

(1) Close air supply and open petcock to depressurize vessel.

(2) Grasp vessel with one hand and turn handle with other to loosen. Slide clamp down over vessel.

(3) Remove moisture-proof wrapper from cartridge; also remove foil seals from **both** end caps on cartridge.

(4) Place end cap firmly on boss in head of vessel. (See above.)

(5) Slide dryer housing over cartridge and position evenly against lip of dryer head, making sure that housing O-ring is correctly seated in groove.

(6) Slip clamp up over housing and fit over lips of head and housing. Turn handle to tighten clamp securely on dryer.

(7) To install moisture indicator, remove plug from top of housing and screw moisture indicator into well. Finger tighten; then **tighten one-half (½) turn with wrench.**

NOTE

Atmospheric moisture may have changed color of crystals in tube to pink. When indicator is installed in dryer, the color will change back to bright blue and remain that color until the cartridge in the dryer is saturated with moisture. When crystals change to pink, replace cartridge immediately.

(8) Close drain petcock (and open inlet and outlet shut-off valves). Dryer is now ready for operation.

Replacement Parts

Description	Part No.
Desiccant Cartridge	MS16
Moisture Indicator	38-0114
Clamp, housing	38-0117
Housing O-ring	38-0103
Petcock ¼", T-handle	14-0992

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