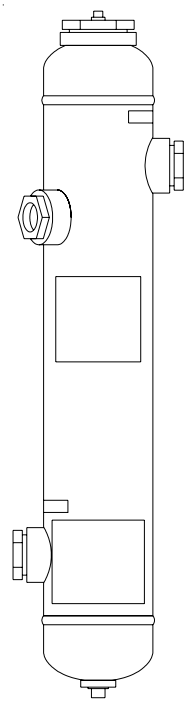
September 2009
P/N 32-0288-B

VAN AIR SYSTEMS

INSTALLATION & OPERATION INSTRUCTIONS
FOR
COMPRESSED AIR/GAS

IN-LINE DESICCANT DRYER

MODEL
ID-35 (P/N 80-1364)



WARNING

DO NOT REMOVE, REPAIR, OR REPLACE ANY ITEM ON THE DRYER WHILE IT IS PRESSURIZED. DEPRESSURIZE THE DRYER COMPLETELY BEFORE STARTING INSTALLATION AND/OR MAINTENANCE PROCEDURES. SERIOUS PERSONAL INJURY MAY RESULT IF THESE SAFETY RULES ARE NOT FOLLOWED.

DO NOT OPERATE THIS PRESSURE VESSEL ABOVE MAXIMUM WORKING PRESSURE (MWP) AND/OR MAXIMUM OPERATING TEMPERATURE (°F) AS SHOWN ON THE ASME DATA PLATE.

THIS ASME CODE VESSEL MUST BE PROTECTED BY A PRESSURE RELIEF VALVE. Refer to OSHA 1910.169 Par. b, Sub. Par (3) and ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, UG-125 through UG-136. Also comply with all applicable state and local codes.

DO NOT WELD, GRIND, OR SAND VESSEL, OR IT WILL NOT BE SAFE TO OPERATE. (Note: Any alteration to the vessel will void the ASME Code Certification and the warranty.)

INSPECT OUTSIDE AND INSIDE OF VESSEL REGULARLY FOR CORROSION AND DAMAGE (I.E., DENTS GOUGES OR BULGES). ANY DAMAGE TO THE VESSEL CAN MAKE IT SAFE TO USE. IF DAMAGED, TAKE OUT OF SERVICE IMMEDIATELY.

USE THE PROPER SAFETY RULES FOR THE GAS BEING PROCESSED.

DO NOT REMOVE THE FILL PORT UNTIL ALL PRESSURE IS OUT OF THE VESSEL.

SECTION 1 — SPECIFICATIONS

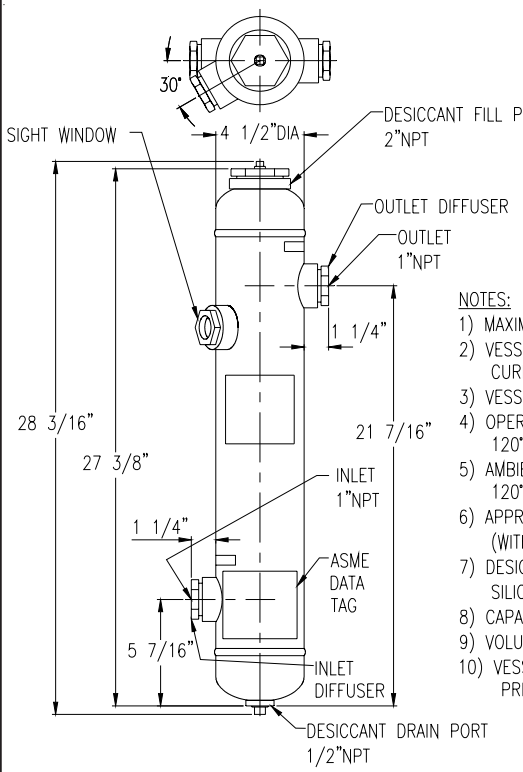
1.0 PURPOSE OF OPERATION

The Van Air In-Line Desiccant Dryer is designed to be filled with adsorbent desiccant such as silica gel.

The saturated air or gas enters the bottom side connection (inlet) on the vessel and travels through the bed of adsorbent material.

Dry air or gas exits the top side connection (outlet) on the vessel.

FIGURE 1 DRYER DETAILS



NOTES:
1) MAXIMUM WORKING PRESSURE: 250 PSIG.
2) VESSEL IS BUILT TO ASME CODE PLUS CURRENT ADDENDA.
3) VESSEL IS STAMPED: "UM" SYMBOL.
4) OPERATING TEMPERATURE RANGE: 40°F TO 120°F.
5) AMBIENT TEMPERATURE RANGE: 40°F TO 120°F.
6) APPROXIMATE WEIGHT OF VESSEL: 30 LBS (WITHOUT DESICCANT).
7) DESICCANT: 8 LBS OF COLOR INDICATING SILICA GEL (INSTALLED).
8) CAPACITY: 1.35 GALLONS.
9) VOLUME: .18 CUBIC FEET.
10) VESSEL EXTERIOR IS COATED WITH ALKYD PRIMER AND WHITE ENAMEL FINISH.

FIGURE 3 DRYING TIME USING SILICA GEL
(at rated flow at 100 PSIG)

INLET TEMPERATURE	TIME (MINUTES)
60°F	542
80°F	283
100°F	156

FIGURE 2 MAXIMUM CAPACITIES -SCFM *(Nm³/hr)*

MAXIMUM WORKING PRESSURE	5 PSIG *0.3 Bar*	10 PSIG *0.7 Bar*	20 PSIG *1.4 Bar*	40 PSIG *2.8 Bar*	60 PSIG *4.1 Bar*	80 PSIG *5.5 Bar*	90 PSIG *6.2 Bar*	100 PSIG *6.9 Bar*	125 PSIG *8.6 Bar*	150 PSIG *10.3 Bar*	200 PSIG *13.8 Bar*	250 PSIG *17.2 Bar*
250 PSIG	6 *9.6*	7.5 *12.1*	10.5 *16.9*	17 *27.3*	23 *37.0*	29 *46.6*	32 *51.4*	35 *56.3*	43 *69.1*	50 *80.4*	66 *106.1*	81 *130.2*

SECTION 2 — INSTALLATION

2.1 LOCATION

Proper performance depends on the correct location of the unit. Locate the dryer at the lowest temperature and highest pressure possible in the system. If there is a pressure regulator in the system, install the dryer upstream of the regulator.

Make sure that the system pressure does not exceed the 250 PSIG maximum working pressure of the vessel.

IMPORTANT
ALWAYS PROCESS AIR THROUGH THE DRYER AT THE LOWEST POSSIBLE TEMPERATURE AND THE HIGHEST PRACTICAL PRESSURE.

2.2 PIPING AND ANCILLARY EQUIPMENT

If the dryer is being installed in an existing piping system, make sure that the pipe is free of scale and rust.

The dryer is supported by the piping system. Adequate pipe supports must be used to prevent damage to the pipeline and dryer.

2.2-A ISOLATION VALVES

Using Figure 3 as a reference, make the necessary piping connections into the dryer.

Inlet and outlet isolation valves are required to isolate the dryer when the adsorbent material is changed.

These valves will also aid in start up and shutdown of the dryer. The inlet isolation valve should be mounted before the pressure relief valve. The outlet isolation valve should be installed on the dryer outlet. A manual valve and a tee should be installed on either the inlet or outlet side of the dryer to depressurize the unit.

A bypass is not recommended, as contamination can go downstream while the unit is maintained. The bypass valve can also accidentally be left open.

2.2-B OPTIONAL PRESSURE RELIEF VALVE (p/n 14-2213)

A pressure relief valve should be installed to conform to OSHA safety standards. Refer to OSHA Standard Section 1910.169, paragraph "b", subparagraph "3". Also comply with all applicable federal, state and local codes concerning pressure vessels.

2.2-C OPTIONAL PRESSURE GAUGE (p/n 29-0160)

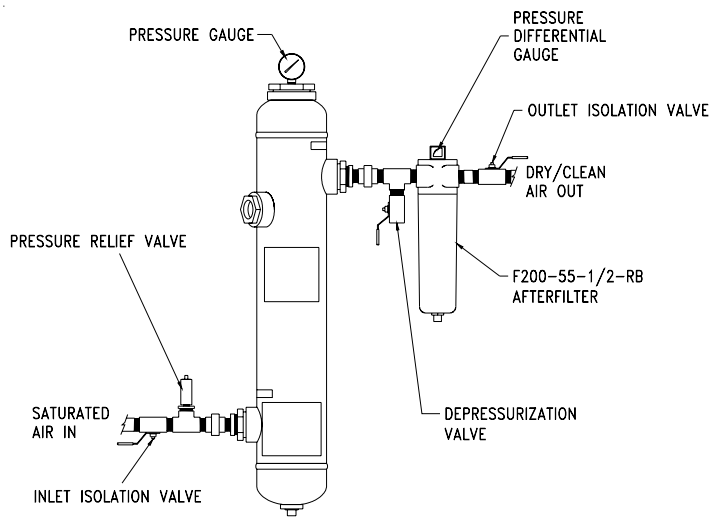
An optional pressure gauge is available to mount in the 1/4" NPT connection on the fill port.

2.2-D AFTERFILTER (p/n 84-23256)

The installation of an F200-55-1/2-RB-MD-PD6 afterfilter prevents any adsorbent material from going downstream.

The afterfilter should be installed upstream of the outlet isolation valve. This will allow the filter to be isolated from the air system when the dryer is isolated for maintenance.

FIGURE 3 RECOMMENDED INSTALLATION DRAWING



NOTE:
ITEMS CALLED OUT IN THIS DRAWING ARE NOT SUPPLIED WITH THE DRYER. REFERENCE FIGURE 1 FOR ITEMS INCLUDED WITH DRYER.

2.2-E DESICCANT INSTALLATION

IMPORTANT
This dryer was shipped WITH the desiccant installed.

See Section 3.3 of this manual for desiccant replacement.

3.1 START UP PROCEDURES

Make sure all isolation valves are closed.

Pressurize the system.

SLOWLY open the inlet isolation valve to bring the unit up to line pressure.

SLOWLY open the outlet isolation valve to put the unit on stream.

If the vessel was installed without isolation valves, **SLOWLY** pressurize the air system.

CAUTION
Make sure that the dryer is not subjected to sudden flow surges. Always open valves slowly to permit gradual equalization of pressure between the dryer and the air supply lines.

3.2 OPERATING THE DRYER

On a new installation, drain all downstream traps for several days (or until no water is evident) after dryer is installed. This period is required to dry out any accumulated water in the compressed air system. Once the water is removed, the downstream traps should not need to be drained again.

If silica gel desiccant is used in the vessel, it should be replaced when the color in the sight window changes. Pink silica gel is moist and blue silica gel is dry.

If other adsorbents are used, they should be replaced on a scheduled basis, or when downstream measurement equipment indicates it.

3.3 REPLACING THE ADSORBENT DESICCANT

Close the inlet and outlet isolation valves (if installed).

Slowly open the depressurization valve to completely depressurize the unit.

Remove the desiccant drain plug from the bottom of the vessel and drain the old desiccant.

Replace the drain plug. Use pipe thread compound as needed.

Remove the fill port plug from the top of the vessel.

Fill the vessel with adsorbent desiccant. It takes approximately 8 pounds of indicating silica gel to fill the vessel.

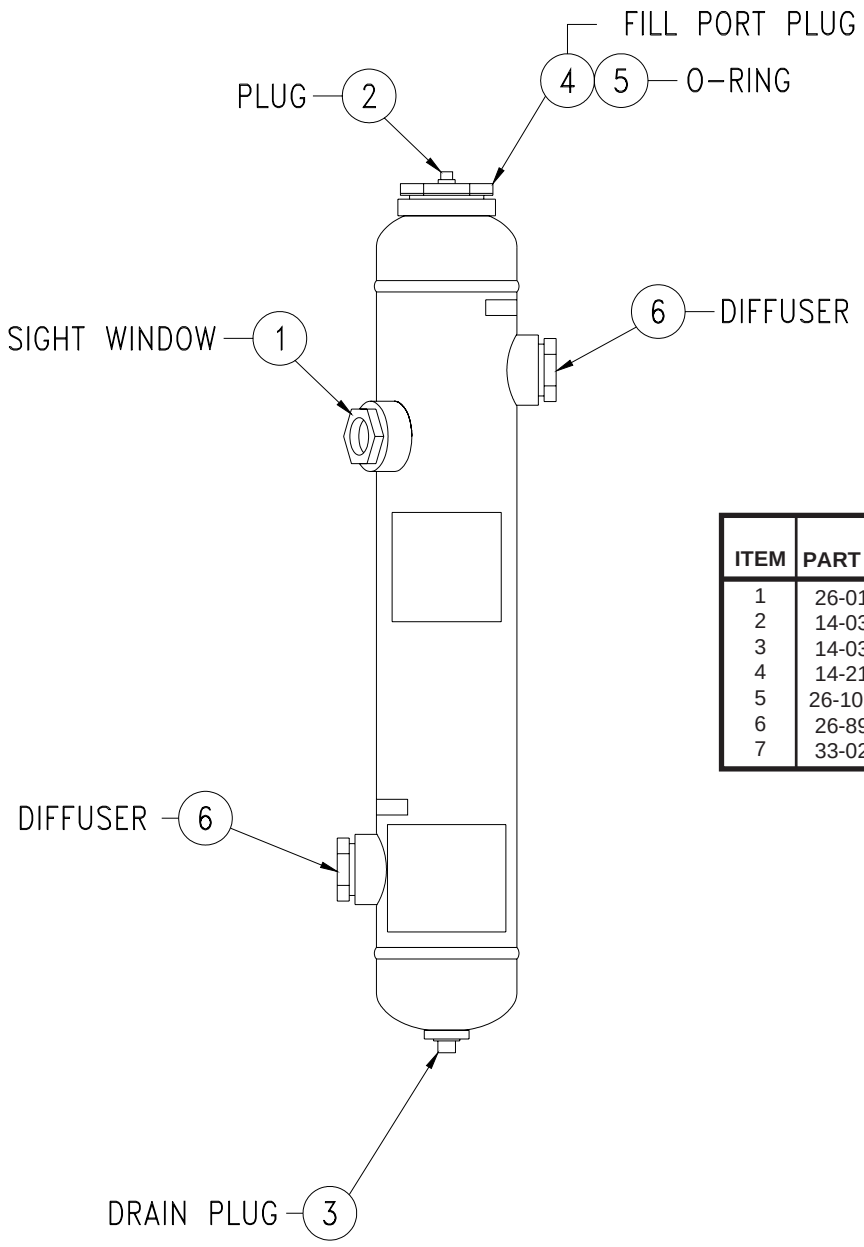
Replace the fill port plug.

Start up the dryer per section 3.1.

3.3 USING THE SIGHT WINDOW

WARNING
IF SIGHT WINDOW IS DAMAGED IN ANY WAY, REPLACE IT IMMEDIATELY WITH VAN AIR PART NO. 26-0104 only.

When using indicating silica gel, look into the sight window to check the color of the desiccant bed. Pink silica gel is moist and blue silica gel is dry. Replace the silica gel when the sight window shows pink.



ITEM	PART NO.	DESCRIPTION	QTY
1	26-0104	Sight Window	1
2	14-0308	Plug	1
3	14-0320	Drain Plug	1
4	14-2188	Fill Port Plug	1
5	26-10264	O-Ring	1
6	26-8978	Diffuser	2
7	33-0246	Desiccant 25# Pail, indicating silica gel	1

SECTION 5 ACCESSORIES

PART NO.	DESCRIPTION	QTY
84-23256	F200-55-1/2-RB-MD-PD6 Afterfilter with differential pressure indicator	1
26-2103	E200-55-RB Afterfilter Element	1
29-0160	Pressure Gauge (0-300 PSIG)	1
14-2213	Pressure Relief Valve	1
14-0450	Ball Valve 1/2" NPT	3

SEE FIGURE 3 FOR LOCATION OF ACCESSORIES

VAN AIR SYSTEMS

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