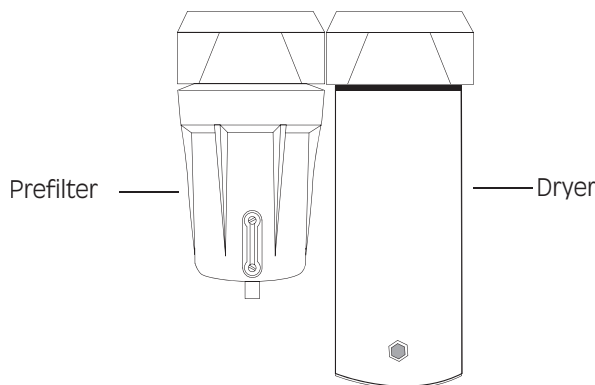


Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.



# Speedaire® Desiccant Compressed Air Dryers

## Description

Speedaire silica gel desiccant dryers are designed to lower the dew point of compressed air. They consist of a filter housing filled with silica gel desiccant through which air passes. As the air passes across the silica gel desiccant, moisture is adsorbed into the pores of the silica gel, reducing the moisture content (dew point) of the outlet air. Once the silica gel desiccant reaches a level of saturation that causes the outlet dew point to rise above an acceptable level, the silica gel desiccant can be either replaced or regenerated by baking in an oven.



## General Safety Information

1. This equipment is a pressure containing device. Do not exceed maximum operating pressure as shown on equipment serial number tag. Make sure equipment is de-pressurized before working on or disassembling it for service. 
2. Air treated by this equipment may not be suitable for breathing without further purification. Refer to OSHA standard 1910.134 for the requirements for breathing quality air. 

## Specifications

Model	AIR CONN. Inlet/Outlet	NOMINAL AIR FLOW scfm (m <sup>3</sup> min) @ 7 bar (100 psiG)	MAXIMUM		DIMENSION		Weight	
			Operating Pressure	Operating Temp.	inches (mm) Height	Width	Weight lbs (kg)	w/Prefilter lbs (kg)
5VC89	1/4" NPTF	5 (0.14)			12.62 (321)	4.13 (105)	13.0 (5.9)	4.14 (1.88)
5VC90	1/4" NPTF	10 (0.28)	175 psiG (12 bar)	125°F (52°C)	12.03 (305)	4.13 (105)	15.0 (6.8)	4.14 (1.88)
5VC91	1/2" NPTF	25 (0.57)			20.25 (514)	4.13 (105)	19.5 (8.9)	4.14 (1.88)
5VC92	1/2" NPTF	30 (0.85)			28.08 (741)	4.13 (105)	22.5(10.2)	8.1 (3.67)

# Speedaire® Desiccant Compressed Air Dryers

## Installation

### LOCATION

The dryer should normally be placed upstream of a reducing valve (regulator). For longest service life, all liquid moisture in the air line must be removed prior to the dryer inlet.

### FLOW DIRECTION

**▲ CAUTION** Check that the unit is piped so that flow is in the proper direction as indicated by the arrows on the dryer head.

### SILICA GEL DESICCANT

Silica gel desiccant is shipped in separate container. Before operating dryer, follow the steps to fill dryer with initial charge of silica gel desiccant.

1. Push up and rotate bowl 1/8<sup>th</sup> of a turn counter-clockwise to remove the bowl from the head
2. Fill bowl with new silica gel desiccant supplied with unit, being careful not to get any desiccant down transfer tube.  
Model 5VC89 requires 1 lb of silica gel desiccant.  
Model 5VC90 requires 2 lbs of silica gel desiccant.  
Model 5VC91 requires 4 lbs of silica gel desiccant.  
Model 5VC92 requires 6 lbs of silica gel desiccant.

**NOTE:** Dry (good) silica gel desiccant is translucent white with blue beads interspersed. If the silica gel desiccant is pink or no blue beads are present then the silica gel desiccant must be replaced or regenerated.

### 3. Silica Gel Desiccant Life:

Table 1 shows the theoretical life of the unit at the stated operating conditions. Life of the silica gel desiccant will vary depending on inlet flow, pressure and temperature. Check with your local representative if additional operational information is required.

### 4. Sight Glass - Moisture Indicator:

The silica gel desiccant is to be changed or regenerated when the moisture indicator changes from blue (good) to white (silica gel desiccant saturated).

### 5. Regeneration of silica gel desiccant:

To regenerate the silica gel desiccant, bake the desiccant for 4 hours at 250°F (121°C). Successfully regenerated silica gel desiccant will be translucent white with blue beads interspersed.

### 6. Determining outlet dew point: With completely dry silica gel desiccant, dryer outlet dew point is a function of inlet temperature. While the silica gel desiccant is adsorbing moisture a relatively constant dew point is maintained until the desiccant bed nears saturation. At this point the dew point begins to rise rapidly. Table 2 shows the relationship of the inlet temperature to outlet dew point with dry silica gel desiccant.

# Models 5VC89, 5VC90, 5VC91 and 5VC92

## Operation

### 1. Paint Gun Arrangements with the Silica Gel Desiccant Dryer system

Model	Spray Gun Type	Number of Guns
5VC89	Detail or small pressure feed	1
5VC90	Pressure or gravity feed	1
5VC91	HVLP	1
5VC92	HVLP	2

### 2. Maximum scfm (m<sup>3</sup>/hr) at various operating pressures

Model	PRESSURE													
	psiG (BAR)													
	20.0	(1.4)	40.0	(2.8)	60.0	(4.1)	80.0	(5.5)	100.0	(6.9)	150.0	(10.3)	200.0	(13.8)
5VC89	1.5	(2.6)	2.4	(4.1)	3.3	(5.5)	4.1	(7.0)	5.0	(8.5)	7.2	(12.2)	9.4	(15.9)
5VC90	3.0	(5.1)	4.8	(8.1)	6.5	(11.1)	8.3	(14.0)	10.0	(17.0)	14.4	(24.4)	18.7	(31.8)
5VC91	6.1	(10.3)	9.5	(16.2)	13.0	(22.1)	16.5	(28.1)	20.0	(34.0)	28.7	(48.8)	37.4	(63.6)
5VC92	9.1	(15.4)	14.3	(24.3)	19.5	(33.2)	24.8	(42.1)	30.0	(51.0)	43.1	(73.2)	56.2	(95.4)

**TABLE 1**

Inlet Pressure = 100 psiG (7 bar)  
 Rated Life at Stated Flow = 500 minutes (8 hrs 20 min)  
 Inlet Temperature = 70°F (21°C)  
 Relative Humidity = 100%

Model	Rated scf (m <sup>3</sup> )
5VC89	2,500 (71)
5VC90	5,000 (142)
5VC91	10,000 (283)
5VC92	15,000 (425)

**TABLE 2**

Outlet dew point\* with dry silica gel desiccant

Inlet Temperature °F (°C)	Outlet A.D.P. °F (°C)
35 (1.7)	-60 (-51.1)
40 (4.4)	-55 (-48.3)
50 (10.0)	-50 (-45.6)
60 (15.6)	-45 (-42.8)
70 (21.1)	-40 (-40.0)
80 (26.7)	-35 (-37.2)
90 (32.2)	-30 (-34.4)
100 (37.8)	-25 (-31.7)
110 (43.3)	-20 (-28.9)
120 (48.9)	-15 (-26.1)

\* Atmospheric Dew Point

# Speedaire® Desiccant Compressed Air Dryers

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## Maintenance

**NOTE:** If prefilter unit is present, check system at least once per day to ensure proper drainage.

Changing silica gel desiccant:

1. Isolate dryer from system by opening by-pass valve (if one is installed) and closing inlet and outlet valves.
2. **▲ CAUTION** Depressurize dryer before servicing. Loosen bottom plug after unit has been isolated to depressurize the dryer. Re-tighten once depressurized.
3. Push up and rotate the bowl 1/8th of a turn counter-clockwise to remove the bowl from the head.
4. Dump old silica gel desiccant out of bowl. (Saturated Silica Gel Desiccant will appear pink in color)
5. Refill bowl with new or regenerated silica gel desiccant being careful not to get any desiccant down transfer tube.

Model 5VC89 requires 1 lb of replacement silica gel desiccant.

Model 5VC90 requires 2 lbs of replacement silica gel desiccant.

Model 5VC91 requires 4 lbs of replacement silica gel desiccant.

Model 5VC92 requires 6 lbs of replacement silica gel desiccant.

**NOTE:** Silica gel desiccant beads are non-toxic and non-flammable.

6. It is recommended that the transfer tube assembly be cleaned with soap and water with each silica gel desiccant change. However, this is not necessary as long as pressure drop across dryer remains within acceptable limits.

7. Reassemble bowl to head making sure that o-ring in the bowl is in place and lightly lubricated.
8. Repressurize, by **slowly** opening inlet valve, then opening outlet valve, and finally closing by-pass valve. (If installed)

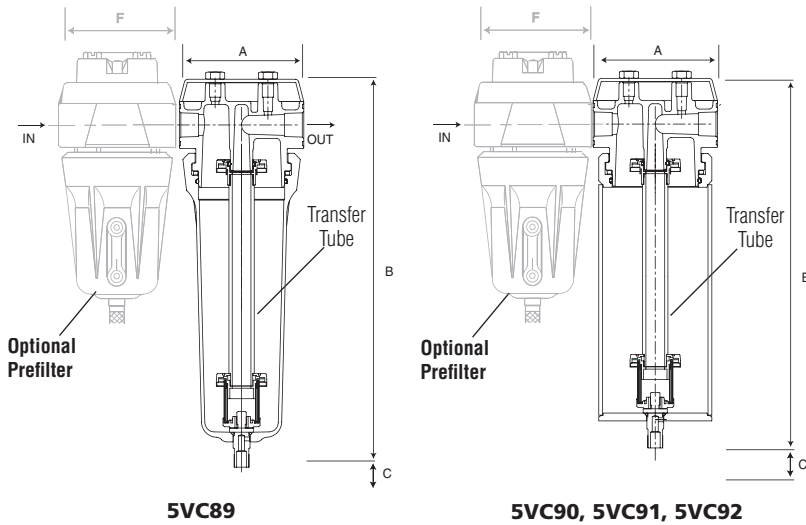
# Models 5VC89, 5VC90, 5VC91 and 5VC92

## Dimensions

	MODEL			
	5VC89	5VC90	5VC91	5VC92
A in (mm)	4.13 (105)	4.13 (105)	4.13 (105)	4.13 (105)
B in (mm)	12.62 (321)	12.03 (305)	20.25 (514)	28.08 (741)
C in (mm)	3.00 (76)	3.00 (76)	3.00 (76)	3.00 (76)
F in (mm)*	4.13 (105)	4.13 (105)	4.13 (105)	4.13 (105)

\*Optional Prefilter

**NOTE:** Dimensions and weights are for reference only. Request certified drawings for construction purposes.



## Data

MODEL	NOMINAL AIR FLOW scfm (m <sup>3</sup> /min) @ 100 psiG (7 bar)	BOWL TYPE
5VC89	5 (0.14)	Aluminum
5VC90	10 (0.28)	
5VC91	25 (0.57)	
5VC92	30 (0.85)	

**For Repair Parts, call 1-800-323-0620****24 hours a day – 365 days a year***Please provide following information:*

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

Description	Part Number for Models:			
	5VC89	5VC90	5VC91	5VC92
Silica Gel Desiccant Replacement	5VD07	5VD08	5VD09	5VD10
Weight, Silica Gel Desiccant Replacement lb (kg)	1.0 (0.45)	2.0 (0.9)	4.0 (1.8)	6.0 (2.7)



