Sullivan Palatek®

Above & Beyond

Regenerative Type Compressed Air Dryers

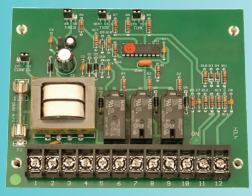
SPS - Heatless Regenerative Dryers

SPEH - External Heated Regenerative Dryers

SPBS - Heated Blower Purge Regenerative Dryers

Quality Components as a basis for Quality Equipment

Digital Sequence Controller



The Digital Sequence Controller is designed for flexibility, adjustability, maintenance, and troubleshooting. The unit can operate in standard cycles or in a shortened test mode, the timing sequences can be manually advanced by a qualified technician for troubleshooting. The controller has dual modes that can be switched between heat type and heatless control cycles.

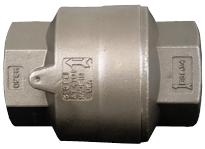
This controller is specifically designed for desiccant air dryers. It has a proven history for reliability in industrial applications.

Desiccant Support Screens

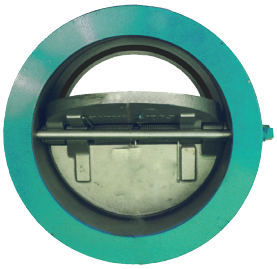
The Sullivan-Palatek desiccant support screens are fabricated from heavy gauge perforated stainless steel. The perforation pattern is designed to retain the desiccant bed while allowing small particles to pass, this prevents particle buildup and high pressure drops. Screens with tighter perforations or wire mesh covers run a high probability of damage from pressure drop. The screens are 100% welded construction, with no epoxy or gluing.

Process Check Valves

Sullivan-Palatek desiccant dryers use all stainless steel poppet type check valves for process lines 1/2" through 1-1/2". The valve has a high flow design for low pressure drop. The all stainless steel construction produces extraordinary service life.



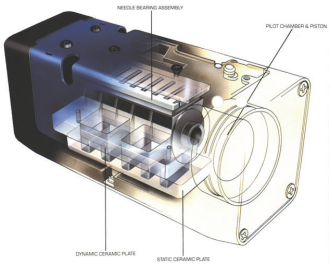
Process Lines 2" and larger use a wafer type check valve, which has all stainless steel internals and a vulcanized sealing seat, that is on the trailing edge of the process flow. The trailing design protects the seal from the damaging desiccant dust.



Over time all valve seals experience wear. If a valve design uses the sealing medium as a hinge or sealing surface, wear could cause a catastrophic failure, which can cause the compressed air system to depressurize. The Sullivan-Palatek wafer style check valve utilizes the soft seat only to ensure a bubble tight seal, the primary sealing surface is metal to metal, thus removing the probability of a catastrophic failure.

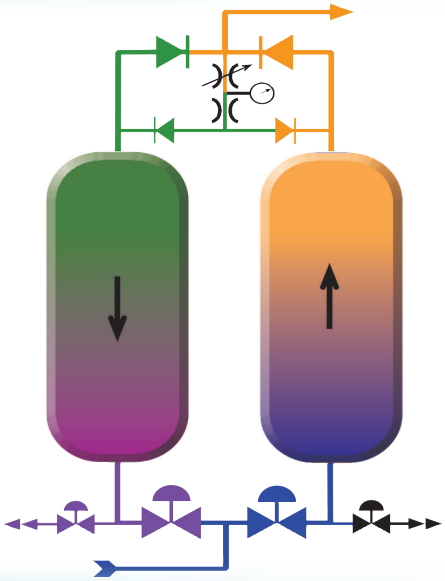
Solenoid Control Valves

Sullivan-Palatek Regenerative Dryers use a ceramic type directional control valve. Other valve types that utilize a lapped spool have a small gap between spool and sleeve. That gap is prone to accumulation of contaminates, resulting in a seized valve. Another type of control valve is the packed spool design, which utilizes elastomer seals that are prone to deterioration when subjected to contamination or low dewpoint air.



The Sullivan-Palatek Ceram valve does not have a gap between the plates for dirt and oil to accumulate. Inside the valve a pair of sliding ceramic plates form a nearly perfect almost indestructible seal. The near diamond hard plates wipe themselves clean, shrugging off contaminants or desiccant dust that would destroy ordinary valves.

Years of proven field service has verified valve life of 150 million cycles even under adverse and severe industrial conditions.



SPS Series Heatless Dryers

Compressed air enters the dryer and is directed to a tower by the inlet valves. It then proceeds up through the tower, gives up its moisture, and then exits through the outlet check valve. A portion of the dry air, called purge is metered and expanded to atmospheric pressure through an orifice assembly. The purge air enters the regeneration tower through the purge check valve, the purge air then utilizes a result of the adsorption process called, heat of adsorbtion to facilitate regeneration of the desiccant. The moisture is picked up by the purge air, and exits to the atmosphere through the purge exhaust valve and muffler. The drying and regenerating cycles occur simultaneously for 5 minutes. Just prior to the end of the 5 minute cycle the purge valve closes and the regeneration tower repressurizes before the inlet valves invert and the process starts again.

Standard Design Features

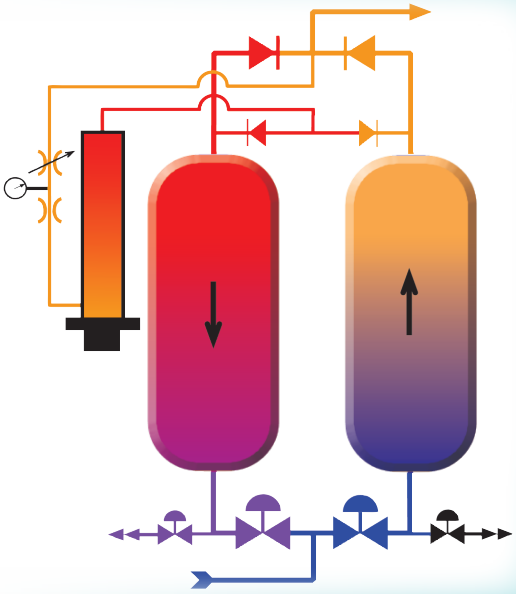
NEMA 4 Electrical
OSHA Approved Mufflers
Illuminated On/Off Power Switch
ASME/CRN Vessels 75 SCFM & Up
ASME Relief Valves
Control Air Filter
Adjustable Purge Flow w/ Indicator
Tower Pressure Gauges
Independent Desiccant Fill & Drain Ports

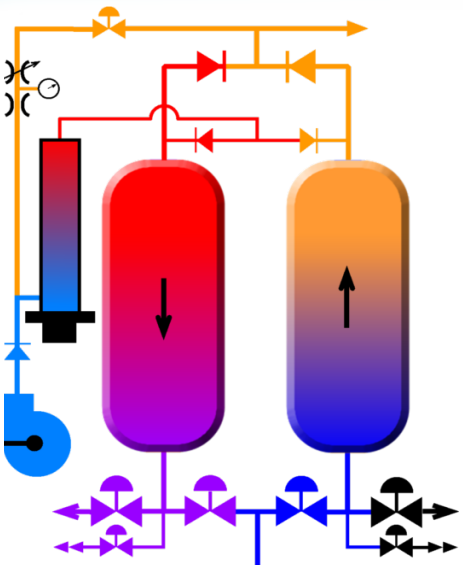
SPEH Externally Heated Dryers

Compressed air enters the dryer and is directed to a tower by the inlet valves. It then proceeds up through the tower, gives up its moisture, and then exits through the outlet check valve. A portion of the dry air, called purge is metered and expanded to atmospheric pressure through an orifice assembly. The purge air enters a circulation chamber where it is heated and its moisture holding capacity is increased. The purge air also transfers heat to the desiccant in the regeneration tower by entering the tower through the purge check valve. As the desiccant temperature increases it releases the previously adsorbed moisture. The moisture is picked up by the heated purge air, and exits to the atmosphere through the purge exhaust valve and muffler. The drying and regenerating cycles occur simultaneously for 4 hours. The regeneration cycle begins with 2.5 hours of heating and 1.4 hours of cooling, then the tower repressurizes before the inlet valves invert and the process starts again.

Standard Design Features

NEMA 12 Electrical
OSHA Approved Mufflers
Illuminated On/Off Power Switch
ASME/CRN Vessels
ASME Relief Valves
Control Air Filter
Adjustable Purge Flow w/ Indicator
Tower Pressure Gauges
Independent Desiccant Fill & Drain Ports
15 Watt /In² Incoloy Sheath Heater
Insulated heater & purge piping
Heater over-temp hi-limit system





SPBS Externally Heated Blower Purge Dryers

Compressed air enters the dryer and is directed to a tower by the inlet valves. It then proceeds up through the tower, gives up its moisture, then exits through the outlet check valve. A regenerative blower creates a purge stream that is heated by a circulation heater increasing it's moisture holding capacity while transfering heat to the desiccant bed. The moisture is picked up by the heated purge air, and exits to the atmosphere through the purge exhaust valve and muffler. The drying and regenerating cycles occur simultaneously for 4 hours. The regeneration cycle begins with 2.5 hours of heating and 1.4 hours of cooling, then the tower repressurizes before the inlet valves invert and the process starts again. Blower Purge dryers use wet ambient air for regeneration that can cause dewpoint to fluctuate with seasonal ambient conditions. The standard ***Tri-Mode*** operating feature allows the SPBS dryer to overcome seasonal dewpoint spikes.

Standard Design Features

NEMA 12 Electrical
OSHA Approved Mufflers
Illuminated On/Off Power Switch
ASME/CRN Vessels
ASME Relief Valves
Control Air Filter
Adjustable Purge Flow w/ Indicator
Tower Pressure Gauges
Independent Desiccant Fill & Drain Ports
15 Watt /In² Incoloy Sheath Heater
Insulated heater & purge piping
Heater over-temp hi-limit system
Silencing Blower Intake Filter
Regenerative Blower w/Thermal Overload

Model Number	Capacity in SCFM @		Available Voltage	In / Out	Desiccant Weight	Purge SCFM	Dimensions		
	120 PSIG	100 PSIG					Height	Width	Depth
SPS-30-116	30	25	120-1-60 / 100-1-50 12 or 24 Volts DC	3/4”	25	3.8	31	47	10
SPS-40-116	40	35		3/4”	35	5.3	31	47	10
SPS-60-116	60	50		3/4”	50	7.5	49	41	10
SPS-85-116	85	75		1”	75	11	65	48	12
SPS-115-116	115	100		1”	100	15	65	48	12
SPS-145-116	145	125		1”	125	19	65	48	12
SPS-200-116	200	175		1-1/2”	175	26	67	52	16
SPS-295-116	295	250		1-1/2”	250	38	66	53	17
SPS-415-116	415	350		1-1/2”	350	53	68	54	20
SPS-585-116	585	500		2”	500	75	79	68	23
SPS-765-116	765	650		2”	650	97	85	68	25
SPS-940-116	940	800		3”	800	120	77	68	29
SPS-1175-116	1175	1000		3”	1000	150	86	78	29
SPS-1470-116	1470	1250		3”	1250	188	80	78	39
SPS-1650-116	1650	1400		3”	1400	210	80	90	39
SPS-1880-116	1880	1600		4” Flg.	1600	240	99	90	39
SPS-2115-116	2115	1800		4” Flg.	1800	270	104	90	39

Notes:
Capacity reflects a maximum 100°F inlet temperature and 100°F ambient at specified pressure.

Average Kw/H heater ratings incorporate actual heating load, and heating cycle time factors.

Initial desiccant charge is included however models 415 and larger require field charging.

Models with capacities in excess of catalog ratings are available to 10,000 SCFM consult factory.

Dimensions and specifications are subject to change without notice.

Model Number	Capacity in SCFM @		Available Voltage	In / Out	Desiccant Weight	Purge	Heater Kw	Avg. Heater Kw/H	Dimensions		
	120 PSIG	100 PSIG							Height	Width	Depth
SPEH-115-❑	115	100	460-3-60 / 380-3-50 230-3-60 / 200-3-50	1”	140	7.0	1.5	0.39	63	61	15
SPEH-145-❑	145	125		1”	175	8.8	1.5	0.49	64	63	17
SPEH-200-❑	200	175		1-1/2”	245	12.2	2.5	0.69	65	67	19
SPEH-295-❑	295	250		1-1/2”	350	17.5	3	0.98	68	70	21
SPEH-415-❑	415	350		1-1/2”	490	24.5	3	1.37	73	71	23
SPEH-585-❑	585	500		2”	700	35.0	5	1.96	85	75	27
SPEH-765-❑	765	650		2”	910	45.5	6	2.55	75	81	30
SPEH-940-❑	940	800		3”	1120	56.0	8	3.14	86	83	32
SPEH-1175-❑	1175	1000		3”	1400	70.0	10	3.92	80	85	38
SPEH-1470-❑	1470	1250		3”	1750	87.5	12	4.90	96	95	38
SPEH-1650-❑	1650	1400		3”	1960	98.0	15	5.49	101	85	38
SPEH-1880-❑	1880	1600		4” Flg.	2240	112	15	6.27	109	90	52
SPEH-2115-❑	2115	1800		4” Flg.	2530	126	18	7.06	109	99	52
SPEH-2350-❑	2350	2000		4” Flg.	2800	140	18	7.84	109	99	52
SPEH-2650-❑	2650	2250		4” Flg.	3150	157	20	8.82	105	111	57

"❑" Symbol reflects missing voltage designation

Model Number	Capacity in SCFM @		Available Voltage	In / Out	Desiccant Weight	Blower HP	Heater Kw	Avg. Heater Kw/H	Dimensions		
	120 PSIG	100 PSIG							Height	Width	Depth
SPBS-115-❑	115	100	460-3-60 / 380-3-50 230-3-60 / 200-3-50	1”	150	1	4	1.68	63	61	15
SPBS-145-❑	145	125		1”	200	1	4	1.68	64	63	71
SPBS-200-❑	200	175		1-1/2”	300	1	4	1.68	65	67	19
SPBS-295-❑	295	250		1-1/2”	400	3	10	4.14	68	70	21
SPBS-415-❑	415	350		1-1/2”	550	3	10	4.14	73	71	23
SPBS-585-❑	585	500		2”	750	3	12	4.14	85	75	27
SPBS-765-❑	765	650		2”	1000	4	16	7.00	75	81	30
SPBS-940-❑	940	800		3”	1200	4	16	7.00	86	83	32
SPBS-1175-❑	1175	1000		3”	1500	5½	24	9.97	80	85	38
SPBS-1470-❑	1470	1250		3”	1875	5½	24	9.97	96	95	38
SPBS-1650-❑	1650	1400		3”	2100	7½	30	14.00	101	85	38
SPBS-1880-❑	1880	1600		4” Flg.	2400	7½	30	14.00	109	90	52
SPBS-2115-❑	2115	1800		4” Flg.	2700	7½	30	14.00	109	99	52
SPBS-2350-❑	2350	2000		4” Flg.	3000	10	44	18.26	109	99	52
SPBS-2650-❑	2650	2250		4” Flg.	3975	10	44	18.26	105	111	57

"❑" Symbol reflects missing voltage designation

Available Optional Features

Dewpoint Demand System

The Dewpoint Demand System eliminates wasted energy from dryer system with fluctuating or low load conditions. The dewpoint system senses the discharge dewpoint of the on-line desiccant bed and determines the maximum allowable drying cycle. If a dryer was sized for continuous full load conditions, the desiccant would reach the end of its useful cycle in four hours for heat type dryers, or ten minutes for heatless dryers. That time period is precisely what is required to regenerate a completely spent desiccant bed. If a system were completely loaded, the on-line tower would reach the end of its useful cycle just as the off line tower was completing its regeneration. In low load conditions the Dewpoint Demand Controller holds the on-line tower in the drying position, and allows the other fully regenerated tower to hold in a pressurized standby mode consuming no energy until it is required, as the on-line tower reaches the end of its useful adsorption cycle. In low load conditions, heated dryer systems can continue to dry a facilities compressed air for days while expending no purge air or energy at all.

Humistat Demand Control

The Humistat Demand control system is the cost efficient version of the Dewpoint Demand System. A humistat controller is used to monitor the outlet dewpoint of the on-line tower. The humistat controller works off relative humidity and is less accurate than the true dewpoint monitor that is used with the Dewpoint Demand Controller. The Humistat Control utilizes a fixed moisture set point and has no dewpoint display.

Tri-Mode Operating System

SPBS Series Blower Purge dryers use wet ambient air for regeneration that can cause dewpoints to fluxuate with seasonal ambient conditions. To maintain a stable low dewpoint, dry purge air is required during the cooling cycle. The addition of the Tri-Mode System gives the option of operating in one of three regeneration modes. **Blower Only Mode** is the standard SPBS operating sequence. The **Blower Polishing Mode** uses dry purge air only during the cooling portion of the regeneration cycle, which is an average purge air consumption of 2.5%. The third operating mode is a standard **External Heated** cycle, this mode allows for blower maintenance to be performed while the dryer remains in operation.

Optional Electrical Systems

Sullivan-Palatek regenerative dryers have a standard electrical rating of NEMA 12 and NEMA 4 for the SPS heatless dryers. NEMA 4 watertight, NEMA 4X watertight corrosion resistant, NEMA 7 Class 1 Div. 1, and NEMA 7 Class 1 Div. 2 (Z-Purge) are all available as optional adders.

High Dewpoint Alarm

The High Dewpoint Alarm is only available when a unit has the Dewpoint Demand Control option. This alarm allows the user to field set a dewpoint level that is continually monitored. When the dewpoint rises above the preset an alarm condition is indicated. This alarm is available with dry contacts for remote indication.

High Humidity Alarm

The High Humidity Alarm gives an indication of high humidity at the dryer discharge. This option utilizes a humistat that signifies the presence of moisture over the preset level. The set point of the alarm is not field adjustable. This alarm is available with dry contacts for remote indication.

Fail to Shift Alarm

The Fail to Shift Alarm alerts the user of failure in any of the tower switching or purge exhaust valves. The system senses pressure in each of the towers and is interlinked to the cycle control. If the pressures in each tower do not match the cycle control, an alarm condition exists and is indicated. This alarm is available with dry contacts for remote indication.

Heater High Limit Alarm

This option, which is only available in heat type dryers, indicates shut down because the heater has reached a high limit temperature condition. Once tripped the alarm requires a manual reset of the heating system. This alarm is available with dry contacts for remote indication.

Sullivan Palatek

Electric Driven Industrial Air Compressors
5-10 HP Belt Driven
15-40 HP Direct Drive
40-100 HP Updraft
125-300 HP SP20
300-400 HP SP32
High and Low Pressure
Variable Frequency Drive Designs
Specialty Packaged Systems

Piston Air Compressors
Splash Lube
Pressure Lube
Gas Driven

Compressed Air Accessories
Refrigerated Air Dryers
Desiccant Air Dryers
Air Filters
Oil Free Systems
Air System Analysis
System Management Solutions
Condensate Management Systems

Diesel Driven Portable Air Compressors
185 cfm to 1800 cfm
John Deere, Cat and Cummins Engines
3 year Air End Warranty
Utility Models
Offshore Models

High Pressure Portable and Skid
950-1150/350

Instrument Quality Air
D375 to D1600

NEW Gas Powered, Dual Fuel, 185 cfm Units

Skid Mount Aftercoolers
Skid Mount Dryers and Aftercoolers
Construction Electric Rentals 50-450HP
Electronic Parts Orders Through
SmartEquip™
Full Line of Pneumatic Tools
Hoses and Accessories

CAGI Compressed Air & Gas Institute

AEM MEMBER

I MAKE AMERICA

Sullivan-Palatek
1201 W US Hwy 20
Michigan City, IN 46360
PH: 800-438-6203
FX: 800-725-6203
info@palatek.com
www.sullivanpalatek.com

Distributed By:

Regen FP 04/14 1M