



DESICCANT HEATLESS AIR DRYERS :

1. How it does work:

Desiccant Dryers are based on the principle of the physical properties of desiccant to adsorb and desorb the moisture present in the compressed Air at a certain pressure. It is Pressure swing adsorption & desorption principle and purge air to regenerate the desiccants bed.

The Desiccant Dryers have two pressure towers filled with selective desiccants. While the compressed air is dried in one tower, the desiccant in the other is regenerated, thus maintaining a continuous and automatic operation.

Drying:

The wet compressed air is led into the adsorber towers through electro pneumatic valves. This wet compressed air is passed through a specially selective sieves at uniform flow and pressure through the desiccant tower, where it get dried. Part of the dried air is taken out for purging to regenerate the saturated desiccants with moisture in second tower. Rest of the dry air come out through the check valves installed at outlet of both the towers.

Regeneration:

When the dried purge air passes over the saturated desiccants, It loses the adsorbed moisture which is expelled into the atmosphere via outlet valve through a muffler / Silencer. The heat of adsorption released during this process raises the temperature of the desiccant, which in turn stimulates the liberation of the adsorbed water moisture/ vapors and called regeneration. Now the desiccant is dry and ready for adsorption for the next cycle.

Change Over:

It is controlled by pre-programmed preset time. After a certain time, the desiccant in the first tower needs to be regenerated as it is saturated with the adsorbed moisture. The purge air valve of the second tower is energized in a sequence, where the purge valve closes first to pressurize the adsorbent in the tower during regeneration mode. Now the second tower becomes the adsorber while the first changes to regeneration / desorb mode. The wet compressed air passed through the regenerated adsorber tower thus setting up a continuous process.

Technical Certitude :

01 Compressed Air Flow :-

It can be designed for compressed air flow from 6 m³/hr to 3000m³ /hr (3.5 cfm to 1800 cfm).

02 Compressed air Pressure :-

In most application offered Dry air at 7.0 Kg/cm² g pressure is suitable however it can be designed for 50 Kg/cm² g compressed air pressure.

03 Dew Point :-

Desiccant dryers are used where dry air application required up to ADP (-) 40°C TO (-) 80°C & PDP (-) 20°C to (-) 70°C

KEY FEATURES / BENEFITS

- Wide range and designed as per customer's requirement.
- Capacities from 6.0 m³/hr. to 3000 m³/hr. Higher capacities are available on request
- Atmospheric dew point achievable (-) 40°C TO (-) 80°C
- PLC controls for automatic and reliable operation
- Low power consumption

- Equipped with muffler / Silencers on purge air outlet to reduce noise level.
- Specially graded desiccants for optimum performance and long life

OPTIONAL FEATURES

- Dew Point indicator with transmitter
- Filters and/or total dryer bypass line with valves
- Special JYH Filters for removal of water, oil mists, oil vapour and dust particles with electronically operated drain valves
- Explosion proof controls for offshore application
- Construction according to various codes

STD. WORKING PARAMETERS

- Working Pressure : 5 to 50 kg/cm2(g)
- Air inlet temperature : 45°C
- Ambient temperature : 45°C

TECHNICAL SPECIFICATIONS

MODEL No.	CAPACITY IN M3/HR. PRESSURE IN KG/CM2 (G)										CONNECTION BSP FEMALE / FLANGE (IN INCHES)	DIMENSIONS (IN MM)			WEIGHT (IN KGS)
	5	6	7	8	9	10	11	12	13	14		L	W	H	
JSD-6	4.5	5.4	6.3	7.1	8.0	8.9	9.8	10.7	11.6	12.5	1/4" BSP	400	350	700	30
JSD-12	8.9	10.7	12.5	14.3	16.1	17.9	19.6	21.4	23.2	25.0	1/4" BSP	420	350	750	35
JSD-25	17.9	21.4	25.0	28.6	32.1	35.7	39.3	42.9	46.4	50.0	1/4" BSP	450	350	780	45
JSD-55	38.9	46.6	54.4	62.2	70.0	77.7	85.5	93.3	101.1	108.8	1/2" BSP	600	400	1600	125
JSD-85	60.4	72.4	84.5	96.6	108.6	120.7	132.8	144.9	156.9	169.0	1/2" BSP	700	450	1650	150
JSD-110	78.2	93.9	109.5	125.1	140.8	156.4	172.1	187.7	203.4	219.0	3/4" BSP	750	500	2100	200
JSD-170	120.7	144.9	169.0	193.1	217.3	241.4	265.6	289.7	313.9	338.0	1" FLANGE	850	650	1600	225
JSD-255	181.1	217.3	253.5	289.7	325.9	362.1	398.4	434.6	470.8	507.0	1" FLANGE	850	650	2050	250
JSD-340	241.4	289.7	338.0	386.3	434.6	482.9	531.1	579.4	627.7	676.0	1.1/2" FLANGE	860	700	1950	350
JSD-425	301.8	362.1	422.5	482.9	543.2	603.6	663.9	724.3	784.6	845.0	1.1/2" FLANGE	860	700	2200	400
JSD-555	394.7	473.7	552.6	631.6	710.5	789.5	868.4	947.4	1026.3	1105.3	1.1/2" FLANGE	1100	750	2100	500
JSD-680	482.9	579.4	676.0	772.6	869.1	965.7	1062.3	1158.9	1255.4	1352.0	2" FLANGE	1150	1200	2250	800
JSD-850	603.6	724.3	845.0	965.7	1086.4	1207.1	1327.9	1448.6	1569.3	1690.0	2" FLANGE	1230	1200	2200	900
JSD-1100	784.6	941.6	1098.5	1255.4	1412.4	1569.3	1726.2	1883.1	2040.1	2197.0	2" FLANGE	1250	1250	2300	1010
JSD-1235	877.6	1053.1	1228.6	1404.1	1579.7	1755.2	1930.7	2106.2	2281.7	2457.3	2.1/2" FLANGE	1250	1400	2500	1100
JSD-1400	994.7	1193.6	1392.6	1591.5	1790.4	1989.4	2188.3	2387.2	2586.2	2785.1	2.1/2" FLANGE	1250	1400	2600	1150
JSD-1520	1086.4	1303.7	1521.0	1738.3	1955.6	2172.9	2390.1	2607.4	2824.7	3042.0	2.1/2" FLANGE	1250	1400	2800	1230
JSD-1700	1207.1	1448.6	1690.0	1931.4	2172.9	2414.3	2655.7	2897.1	3138.6	3380.0	3" FLANGE	1460	1600	2800	1650
JSD-2030	1448.6	1738.3	2028.0	2317.7	2607.4	2897.1	3186.9	3476.6	3766.3	4056.0	3" FLANGE	1530	1550	2700	1860



JYH
Big Engineering & Consultants

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(An ISO 9001:2015, ISO 14001:2015, ISO 45001-2018 Certified Company)

Plot No. A- 190, Flat No. - 499, Ashtavinayak Co-operative Housing Society, Sector 4, Ghansoli,
Navi Mumbai 400701, Maharashtra India Contact : + 91 9082834712, 9004176561
E-mail : info@jyhairseparation.com / ykjyhb@gmail.com Website : www.jyhairseparation.com