

VT DIRECT EXPANSION DRYERS

Almost every area of manufacturing requires compressed air as a fundamental part of the production process. This has resulted with approximately 10% of the whole electrical consumption for UK industry being used to generate compressed air.

A typical compressed air system wastes approximately 35% due to leaks and these leaks are mainly due to corrosion that has been caused by wet compressed air. Further financial losses are incurred due to product spoilage and equipment downtime caused by wet compressed air. So why put up with it?



The Vortex Technology (VT) range of compressed air dryers can efficiently and effectively remove moisture from the air stream and therefore increase profits. The patented 'monobloc' design provides a simple and compact heat exchanger that reduces pressure drop across the dryer, thereby increasing overall efficiency. Every VT dryer is fitted with a monobloc heat exchanger, therefore every VT dryer affords the same level of efficient protection for your compressed air system.

Minimal energy consumption is vitally important in today's competitive marketplace and purchasing a VT dryer will help you drive down your energy costs by minimising pressure drop and lowering absorbed power.

Corrosion.

Steel needs two components to cause corrosion, moisture and oxygen. Compressed air contains both of these, therefore pipework will inevitably rust from the inside out unless preventative measures are taken. Screwed threads are the first point of attack as plating or painting has been removed by the action of cutting the screw threads. The two interfacing pipe threads set up a small electrolytic effect due to trace acids in the compressor condensate, thereby accelerating the effect of corrosion.

Rusting commences on ferrous metal when the relative humidity (RH) of air exceeds approximately 30%. At this point oxidation is slight, however serious corrosion commences when the RH exceeds 60%. It therefore seems logical that keeping the RH of the compressed air at or below 60% would be desirable.

Features:

- Constant 3 deg C pressure dewpoint
- Maximum 16 barg operation
- Low pressure drop
- Reliable control system
- CE certified and PED compliant
- Environmentally friendly refrigerants

Correction Factors

Pressure (bar)	4	5	6	7	8	10	12	14	16
Factor F1	1.25	1.14	1.06	1	0.96	0.9	0.86	0.82	0.8
Ambient Temp deg C	10	15	20	25	30	35	40	43	45
Factor F2	0.92	0.92	0.92	1	1.07	1.14	1.22	1.28	n/a
Inlet air temp deg C	20	25	30	35	40	45	50	55	60
Factor F3	0.85	0.85	0.85	1	1.18	1.39	1.67	n/a	n/a

How to select a VT dryer:

Determine your required maximum airflow

Select your correction factors for pressure, ambient temperature, inlet air temperature.

Corrected flow = maximum airflow x F1 x F2 x F3.

Example. Required airflow = 265 cu.m/h at 8 barg with an ambient air temperature of 35 deg C and a compressed air temperature of 45 deg C.

Corrected flow = 265 x 0.96 x 1.14 x 1.39 = 403 cu.m/h

Both the VT270 and the VT330 are too small. Choose the VT430.

Performance figures based upon 7 barg working pressure, 3 deg C pressure dewpoint, 25 deg C ambient air temperature and 35 deg C compressed air inlet temperature. All data refers to ISO-7183 & 8573-1.

Standard Features:

Dewpoint indicator

Electronic condensate drain

Power on light.

Zinc plated and powder-coated cabinets

Additional instrumentation for larger models.

