

## Quality

The new CONCEPT WVModular dryers are an example of modern engineering technology, giving the user a value for money installation. It has the highest quality with built-in reliability at the lowest running costs.

*The ZANDER CONCEPT WVM<sub>odular</sub> adsorption dryer range is the synonym for:*

- 1 Low Energy Costs**  
Savings of 25% are possible compared to conventional systems
- 2 Two layered desiccant bed**  
Balanced desiccant between water resistance and high efficiency water retention for optimum dew point stability.
- 3 Active heating under vacuum**  
means that the vaporization temperature is 98°C
- 4 Low regeneration temperature**  
for the desiccant bed compared to conventional systems.
- 5 Intensive cooling**  
using the vacuum without any heat generation from the vacuum pump.
- 6 Regeneration without purge air**  
thanks to the high temperature difference even after the cooling phase..
- 7 Pressure build up on the wet side**  
guarantees no purge air even on the pressure build up phase
- 8 Reliable dew point**  
as the regeneration air flows through the dryer inlet in the same direction as the air to be dried.
- 9 Changeover without dew point peak**  
The moisture entering the desiccant bed during the regeneration and cooling phase never reaches the drying zone.
- 10 Reliable dew point down to -70°C**  
standard dew point available at -25°C and -40°C.
- 11 New function alarm**  
For pressure, inlet temperature, heating, vacuum pump and vessel changeover.
- 12 Alternative energies**  
available for regeneration as an optional extra: steam, hot water. Please consult ZANDER for other heat sources.
- 13 Modular system options**  
\* controlled regeneration air  
\* thyristor controlled heating  
\* variable speed vacuum pump motor

## Technical Data

Type concept	Capacity (m <sup>3</sup> /h)*	Connect. DN	A=Width (mm)	B=Height (mm)	C=Depth (mm)	Weight kg	electr. Connect kWh/h
WVM 40	420	40	1215	1955	985	460	3,1
WVM 50	510	40	1215	2205	985	560	3,8
WVM 65	640	50	1305	2250	1085	640	5,2
WVM 85	850	50	1360	2275	1095	770	6,7
WVM 120	1180	80	1560	2665	1295	940	10,9
WVM 150	1500	80	1610	2680	1285	1200	12,8
WVM 200	1980	80	1700	2730	1390	1580	16,3
WVM 235	2350	100	2020	2845	1415	1880	18,1
WVM 300	2930	100	2085	2870	1515	2350	22,5
WVM 355	3550	100	2170	2950	1630	2850	27,9
WVM 410	4100	150	2450	3190	1630	3300	32,5
WVM 475	4740	150	2515	3210	1835	3800	38,9
WVM 525	5250	150	2550	3230	1770	4200	44,8
WVM 620	6210	150	2600	3500	1885	4950	52,3
WVM 710	7100	150	2650	3520	1905	5700	56,3
WVM 800	8000	200	3210	3585	2115	6400	67,2
WVM 920	9200	200	3150	3615	2240	7400	75,6
WVM 1080	10800	200	3250	3670	2290	8700	85,3
WVM 1230	12300	250	3500	3860	2480	11500	98,9
WVM 1450	14500	250	3600	3900	2530	13500	111,4

\*m<sup>3</sup>/h calculated at 1 bar a according to DIN 7183

Examples of calculation:

a) Compressed air to be treated  
Flow 3000 m<sup>3</sup>/h  
Pressure 5 bar (e)  
Maximum inlet temp. + 30°C  
Dew-point - 25°C  
Factor P from table 0,80

$$\frac{\text{flow}}{\text{factor T} \times \text{factor P}} = \frac{3000 \text{ m}^3/\text{h}}{0,80} = 3750 \text{ m}^3/\text{h}$$

Choose Type concept WVM 410

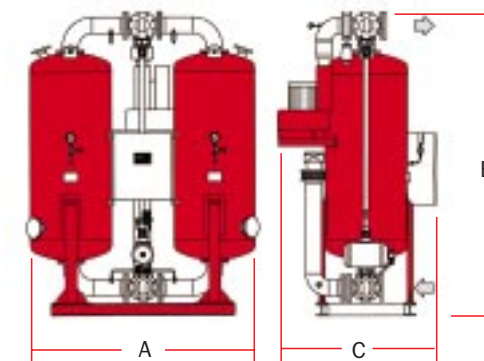
b) Calculation of maximum flow  
flow x T x P  
4100 x 0,80 = 3280 m<sup>3</sup>/h

c) Reserve available equals  
maximum flow - actual flow  
3280 m<sup>3</sup>/h - 3000 m<sup>3</sup>/h = 280 m<sup>3</sup>/h

Higher flows -70°C on request

Factors for calculating size of dryer at temperature flows and pressure.

bar(a) \ °C	30	35	40
4	0,69	0,44	0,28
5	0,80	0,62	0,42
6	0,90	0,80	0,59
7	1,02	1,00	0,70
8	1,06	1,05	0,79
9	1,17	1,16	0,88
10	1,29	1,28	0,96



We reserve the right to change design and dimensions.

# Adsorption Dryer



**CONCEPT**  
**WVM<sub>odular</sub>**

**ZANDER®** *The CONCEPT WVM<sub>modular</sub> Adsorption Dryer*

*The new generation...*

of ZANDER patented vacuum heat regenerated adsorption dryers is the result of continuous research and development based on years of experience with user installations worldwide. The name ZANDER is synonymous with the best in compressed air treatment. The new CONCEPT WVM<sub>modular</sub> range adds to the reputation with optimum efficiency and reliable and constant high quality. This level of quality is reflected in the pressure dew

point, which can be both measured and proved. The designated pressure dew point of a CONCEPT WVM<sub>modular</sub> dryers remains continuously constant, so important in today's systems. The constant dew point is achieved by using two layers of desiccant and regeneration under vacuum. This ZANDER vacuum regeneration with Active Heating and Intensive Cooling defines the new standard for heat regenerated dryers.

*Adsorption*

Desiccant attracts and stores the moisture from the saturated compressed air. ZANDER'S experience over many years designing and building heat regenerated dryers has resulted

in the ideal ratio of high capacity and long life medium. The most economical form of desiccant bed is to combine the correct proportions of water resistant with high efficiency desiccant. The

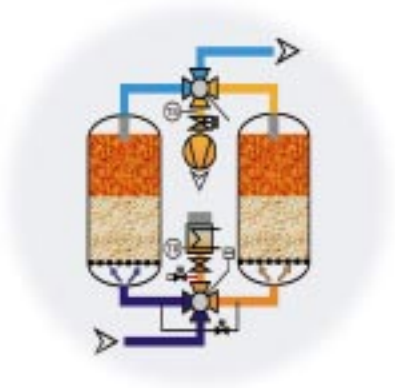
*Regeneration*

Using the vacuum technology with low regeneration temperatures and the economical ratio of

desiccant results in optimum efficiency and stable long term dew point.



filling of desiccant in the new dryers means low energy costs. A longer service life and a steady dew-point.



*Active Heating*

The ZANDER vacuum system reduces the regeneration pressure. Only heating under vacuum guarantees the greatest desiccant activation. Regeneration

under vacuum also means a lower steam vapour temperature. Active heating results in less energy requirement and the benefit of less cooling.



*Intensive Cooling*

Cooling air flows in the same direction as the dried compressed air. This prevents moisture loading at the outlet of the dryer. The advantages of this system are lower temperatures; shorter

cooling times; lower energy requirements; a lower water loading; a short cooling time and no expensive compressed air required for cooling.



*Digital Control*

The user friendly digital control installed on the CONCEPT WVM<sub>modular</sub> dryers ensures a reliable operation of the unit. The ZANDER units have a perfect set of system relevant signals. These signals define and control the active heating and active cooling phases in the regeneration cycle within very exact tolerances. The result of these fine tolerances is

that the dryer adapts exactly to the working pattern in the plant, thus the new dryer only uses the energy required for its working conditions. In addition, the user has a complete picture of the operation of the dryer through the display flow sheet. The user can take information about the dryer's performance to a BMS system.

