

## 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

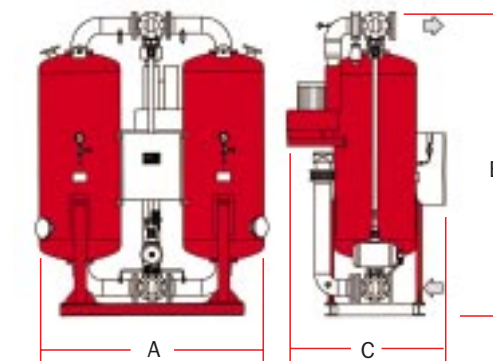
b) Calculation of maximum flow  
flow x T x P  
4100 x 0,80 = 3280 m<sup>3</sup>/h

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) | 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

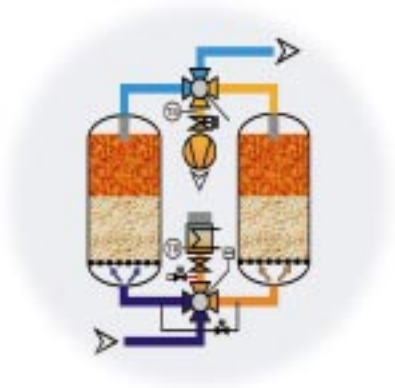
## Regeneration

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.

