Accessories for the ecodry & breathing star BSP-MT series

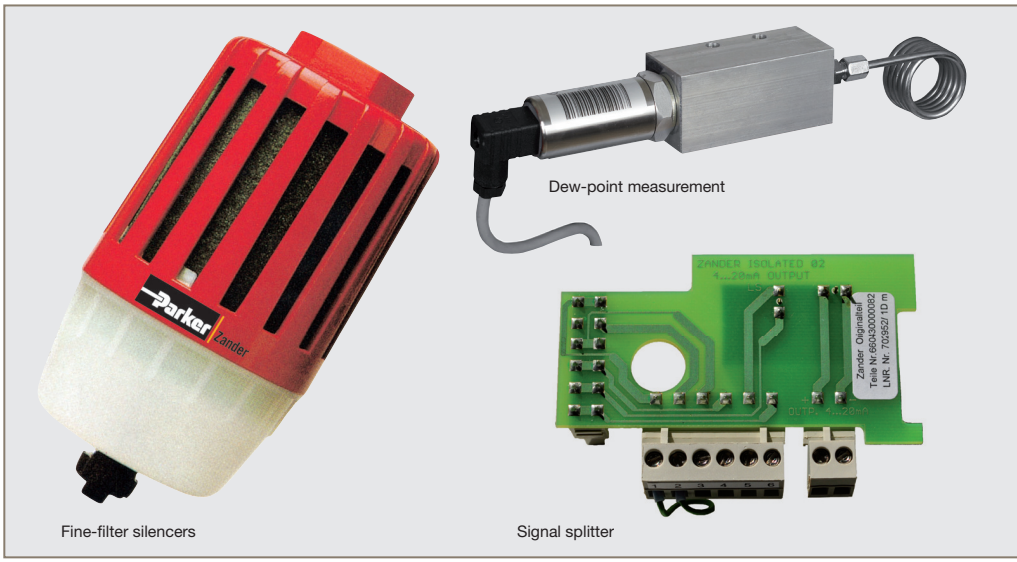
for heatless compressed air adsorption dryers and breathing air purification systems

Brief description

With the appropriate accessories, heatless adsorption dryers (ecodry series K-MT 1-8 and 10-95, ecodry series KA-MT 1-8 and 10-95 with activated carbon adsorption stage and BSP-MT1-8 and 10-95 breathing star series) can be individually adapted to suit a variety of operating parameters.

This enables:

- Optimum integration into existing installations,
- Adaptability to changes in operating conditions present at site,
- improved energy efficiency,
- Reliable operation under frequently changing operating parameters.



Fine-filter silencers

Dew-point measurement

Signal splitter

Having the right accessories available - means flexibility in being able to fullfill the requirements of on-site operating conditions: Adsorption dryers, activated carbon adsorbers and breathing air systems can be efficiently adapted to meet the respective compressed air application and provide operational reliability. The purpose of the accessories in question is explained in further detail below.

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Dew point measurement

Heatless adsorption dryers and breathing air systems normally work on a fixed cycle, during which the adsorption vessels see equal amounts of compressed air. During the adsorption of moisture from compressed air, taking place in one vessel, simultaneous regeneration of the de-pressurised vessel is achieved with the aid of a small amount of dried air, used to evacuate moisture to atmosphere.

To meet fluctuating operating pressures and/or variations in intake flow in compressed air systems, the use of dew point measurement at the dry-air outlet of the dryer is recommended: This enables the changeover between the two adsorption vessels to be controlled and optimised to meet actual demand: Changeover from one vessel to the other only takes place when the required pressure dew point falls below a level, preset to represent the maximum tolerable amount of residual moisture the application can withstand. Reliable dew point measurement enables the drying phase to be extended to meet actual running conditions, thus avoiding the rigidity of fixed cycle-times and the consequential consumption of unnecessary amount of purge air for regeneration.

Order no.	suitable for series	Standard equipment
VASPDP/K1-K95	K-MT 1-8 and 10-95, KA-MT 1- 8 and 10-95, BSP-MT 1-8 and 10-95	Dew-point sensor ZHM100, measuring chamber, signal cable, installation materials, installation instructions

Signal splitter 4-20 mA

Where heatless adsorption dryers and breathing air systems are equipped with dew point measurement & control, a signal amplifier enables a 4-20 mA analogue signal to be supplied to an external monitoring and evaluation point. In this way, the operating performance of plant and equipment can be supervised and recorded.

Order no.	suitable for series	Standard equipment
VASMBS420	K-MT 1-8 and 10-95, KA-MT 1- 8 and 10-95, BSP-MT 1-8 and 10-95	Plug-in circuit-board MBS420, installation instructions

Regeneration gas return

Heatless adsorption dryers and breathing air systems are equipped with a relay as standard, enabling synchronised operation with a compressor. Where the compressor is in off-load mode, the dryer also switches to stand-by. Where this happens, and one of the dryer vessels has not yet completed its regeneration cycle, the adsorption material may still contain moisture, which on re-start can have a detrimental effect on the pressure dew-point and downstream air quality. To safely complete the regeneration phase in systems with limited upstream capacity experiencing frequent start-stop operation, a small amount of previously dried compressed air can be taken back from downstream air-vessels or pipe-work with sufficient volume. To enable this to happen, an additional non-return valve opens to allow air to return through the already depressurised dryer vessel to complete the previously interrupted regeneration phase.

The regeneration gas return cannot be combined with the start-up device.

Order no.	suitable for series	Standard equipment
VASRGR/K1-K8	K-MT 1-8 and 10-95, KA-MT 1- 8 and 10-95, BSP-MT 1-8 and 10-95	Non return valve plate, installation material, installation instructions
VASRGR/K10-K95	K-MT 1-8 and 10-95, KA-MT 1- 8 and 10-95, BSP-MT 1-8 and 10-95	

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Start-up device

All dryers, adsorbers and breathing air systems which are filled with granulate (desiccant adsorption beads, activated carbon pellets etc.) are sensitive to extremely high compressed air flow velocities: Under such circumstances, not only the drying process, but also the adsorption process itself loose effectiveness – in the worst case, vortex-attrition can take place in the bulk material, crushing the beads and pellets.

For this reason, conventional practice has long since established methods to enable compressed air pressurisation or de-pressurisation to be performed gradually and without shock. However, where frequent start-up and shut-down is necessary, i.e. for individual pressure levels at peak load or where downstream compressed air lines are very large in terms of total volume, dryers and adsorbers must be protected by a minimum pressure valve, a so-called "start-up" device or pressure maintaining valve, downstream of the unit. The minimum pressure valve only opens on reaching a pre-set pressure (factory setting 4,75 bare) in order to prevent high velocity-flow on start-up or shut-down.

The start-up device cannot be combined with the regeneration gas return.

Order no.	suitable for series	Standard equipment
VASVPB/K1-K4/08	K-MT 1-4, KA-MT 1-4, BSP-MT 1-4, AKM 1-4	Minimum pressure valve, installation material, installation instructions
VASVPB/K6-K7/15	K-MT 6-7, KA-MT 6-7, BSP-MT 6-7, AKM 6-7	
VASVPB/K8/20	K-MT 8, KA-MT 8, BSP-MT 8, AKM 8	
VASVPB/K10-K20/25	K-MT 10-20, KA-MT 10-20, BSP-MT 10-20, AKM 10 20	
VASVPB/K25-K45/40	K-MT 25-45, KA-MT 25-45, BSP-MT 25-45, AKM 25 45	
VASVPB/K60-K75/50	K-MT 60-75, KA-MT 60-75, BSP-MT 60-75, AKM 60 75	
VASVPB/K95/65	K-MT 90, KA-MT 90, BSP-MT 90, AKM 90	

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Fine Filter Silencing

Heatless adsorption dryers and breathing air systems function as pressure swing adsorption (PSA) units, alternating the adsorption and regeneration process from one vessel to another. To enable regeneration to occur in the two drying vessels, a corresponding expansion valves is used. Compressed air in one vessel is suddenly and noisily depressurised. Silencers are supplied as standard. Where the dryer is required for installation in an enclosed environment and in close proximity to work stations, where not only noise, but also dirt from oil-vapour and fine dust can be a critical factor, the installation of fine-filter silencers is recommended.

Purchase order no.	suitable for series	Standard equipment
VASFS3/K1-K4	K-MT 1-4, KA-MT 1-4, BSP-MT 1-4	Fine filter muffler FS3, installation material, installation instructions
VASFS5/K6-K8	K-MT 6-8, KA-MT 6-8, BSP-MT 6-8	Fine filter muffler FS5, installation material, installation instructions
VASFS5/K10-K15	K-MT 10-15, KA-MT 10-15, BSP-MT 10-15	Fine filter muffler 2*FS5, Installation material, installation instructions
VASFS5/K20-K25	K-MT 20-25, KA-MT 20-25, BSP-MT 20-25	
VASFS5/K35-K60	K-MT 35-60, KA-MT 35-60, BSP-MT 35-60	Fine filter muffler 3*FS5, Installation material, installation instructions
VASFS5/K75-K95	K-MT 75-95, KA-MT 75-95, BSP-MT 75-95	

Nozzle kit

Operating pressures, which deviate from standard sizing parameters (7 bare), may lead to changes in purge-air (regeneration-air) requirements which can detrimentally affect the economic operation of the dryer. To counter this effect, it is possible to exchange the standard purge-air nozzle (regeneration-air nozzle) for one with a different orifice. This enables purge-air consumption to be adjusted and return the dryer to energy-efficient performance levels.

A useful nozzle-kit, containing multiple nozzles with varied orifice sizes, effectively covering the entire operating spectrum of the dryer, is recommended as standard workshop equipment for all specialist dealers.

Purchase order no.	suitable for series	Standard equipment
VASNOZ/K1-K95	K-MT 1-8, K-MT 10-95, KA-MT 1- 8, KA-MT 10-95, BSP-MT 1-8, BSP-MT 10-95	26 baffles in 3- and 4-fold versions, selection tables per volume flow / operating pressure, seals and installation instructions

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