



Question of the Month June 06/2019

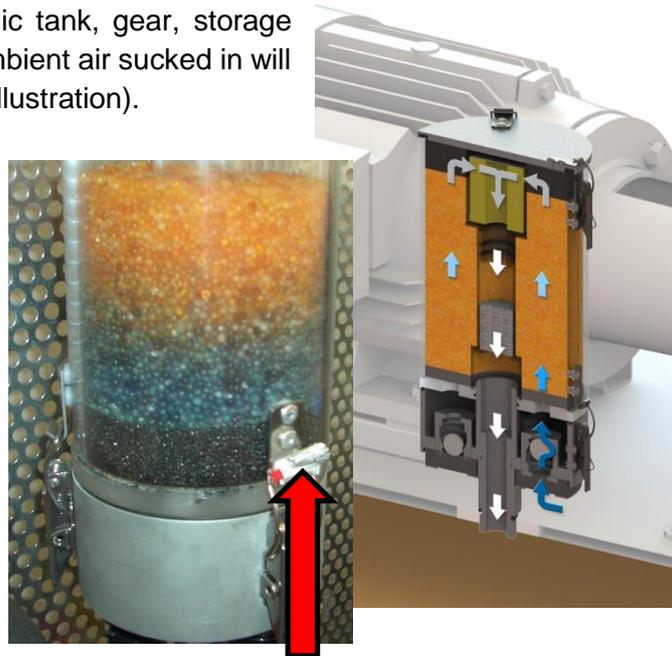
Why does the adsorber load from above?

Functionality and target colour gradient

When using an adsorber on a hydraulic tank, gear, storage tank as well as barrels and IBCs, the ambient air sucked in will flow into the adsorber from below (see illustration).

The drying agent silica gel absorbs the water from the air and discolours. In most adsorbers, the colour changes from orange to a dark blue-green.

If the adsorber has valves, only the sucked in air will flow into the granulate and be dried by it. Without valves, the dry granulate is exposed to permanent loading by diffusion.



Maximum load

With increasing loading of the silica gel, the color change migrates from bottom to top through the adsorber. The whole body will get a very dark colour. After a complete colour change, the silica gel must be replaced as it no longer absorbs water and becomes ineffective.



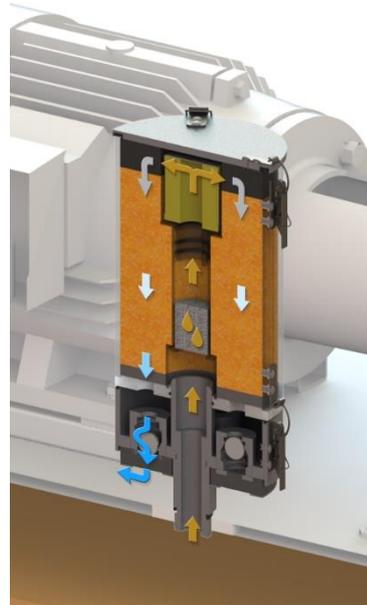


Cause - Adsorber discolors from above

If the adsorber discolours from above, this indicates that moisture is escaping from the system. The adsorber is designed as an aerator and deaerator. Thus incoming air is dried and this dry air is used to regenerate the silica gel, while it flows from top to bottom through the adsorber.

However, if the air or liquid in the tank contains a certain amount of water, the adsorber will absorb this moisture - the colour changes from above.

This will always be the case if an aeration dryer is installed after several months (or years) rather than during a new installation.



Solution and approach

This effect continuously dries the system in the interior and significantly improves the operating conditions. At the beginning of the use of an adsorber, loading from above can take place very quickly. However, this cycle will slow down with each silica gel exchange **until loading takes place only from below, drying only the ambient air before inflow.**



1. Loading begins from above. The system is dried and protected from moisture!



2. The loading from above becomes slower and also starts from below. Plant is effectively protected!



3. Loading only takes place from below. The interior of the system is dried and no new moisture flows in!