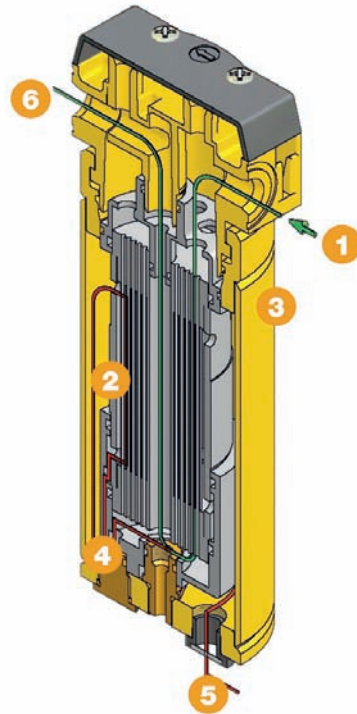


Cut-away image of a compressed air membrane dryer



- 1 Compressed air inlet;
- 2 Membrane fibre module;
- 3 Outer housing;
- 4 Purge air nozzle;
- 5 Purge air outlet;
- 6 Compressed air outlet

dew point (increased degree of dryness) often results in a purged air requirement of up to 20 per cent of the compressor's capacity.

As with refrigeration drying, membrane drying leads to a build-up of condensate which has to be collected, removed and disposed of. Condensate drainage requires increased installation effort and its subsequent collection in a container increases maintenance requirement.

Furthermore, membrane dryers are very sensitive to pulsation, which of course is an inherent design characteristic of the reciprocating compressors that are predominantly used in dental applications. These pulsations have a high frequency and low amplitude. Another point to bear in mind is that the large pressure surges at start up and at pressure discharge after the compressor is shut down reduce the service life of a membrane dryer system.

Absorption drying – Seldom used

For good reason, absorption drying is seldom used in dental compressed air systems. The compressed air is dried in a desiccant bed by means of a chemical reaction, reducing the pressure dew point by about 10 to

15K. As with membrane drying however, it is not possible to specifically specify the pressure dew point reduction. As the desiccant cannot be regenerated after use, it has to be completely replaced after a relatively short amount of time. The drying process often leads to the creation of aggressive condensate that has to be disposed of separately. All of these factors result in increased material, maintenance, and cost expenditure.

Conclusion

When it comes to drying compressed air for dental applications, the deciding factor is to what extent the drying process fulfils the requirements of the application. Best suited for the dental sector are specially adapted drying systems, such as the "Seccomat" with the "Permanent Power System" as manufactured by Kaeser Kompressoren. **DA**

Author: Valentin Kiefer, Product manager for dental compressors, Kaeser Kompressoren GmbH, Coburg

Notes:

1: Dental Standards Committee within the scope of the German Institute for Standardisation (DIN), registered association (Ed.): Dental Standards Committee (NADENT) Annual Report 2007, p. 25.
File: N-Dentalluft_Trock-Meth-en
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