

Generation Change

Product optimization based on customer feedback using a rotary feeder series as an example

Rotary feeders with additional equipment for easy rotor removal have become increasingly important in recent years. This can be explained by the increased demands on product quality and hygiene, but is also due to the further advantages such constructions provide.

The quick and uncomplicated inspection and cleaning of the interior enables the flexible use of the system for various bulk goods, shortens downtimes and reduces maintenance.

Due to its easy accessibility, preventive maintenance is possible, which is particularly important for bulk materials that tend to adhere. Wear control of the interior is also relatively easy. This is important in particular when the rotary feeder is used as a protection system.

The permissible maximum gap dimensions are an important criterion for the spark ignition resistance and must therefore be checked regularly at appropriate intervals.

Design measures

Following the analysis of the customer feedback on the "Easy Clean" version, established on the market for over 15 years, various points have been completely revised and optimized.

For the ZS ECT II version, the cast materials GG25 (Minerals version) and stainless-steel cast 1.4408 (Chemistry version) are now available, while all common stainless-steel grades, such as 1.4404 / 1.4301 / 1.4571 (FOOD version), are available as welded constructions.

The housing geometry with a size range from DN 150 to DN 300 remained unchanged and ensures interchangeability. The open rotor is equipped with 8, 10 or 12 rounded rotor pockets and rotor blades bevelled on three sides. As previously, disassembly of the rotary feeder is possible on one or both sides. The drive is also installed in a space-saving manner directly above the hollow shaft and the flange of the gear motor.

Due to the modification of the bearing opposite the drive side, it is now very easy to completely remove the rotor by using a central screw. The precise fixed mounting is carried out via a zero-play

double-row deep groove ball bearing with hardened rotor shaft mount. A high-quality labyrinth seal ensures the permanent sealing of the bearing.

In case of a poorly accessible or insufficiently illuminated assembly situation, the rotor's positionally accurate retracting into the coupling is often difficult. In order to facilitate this process, the coupling point between the rotary valve and the drive shaft was revised and accuracy significantly increased - the rotor can now be retracted in 8 positions instead of in two.

The most significant change happened in the field of shaft sealing. This was realized by using an easily removable seal cartridge, notably facilitating maintenance and cleaning. Depending



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on the requirements, the sealing cartridge can be equipped with various sealing elements - from DIN shaft seals to hygienic solutions that have proved their worth in the market. Subject to the back pressure applied, the shaft seal can also be used in the sealing-air or purge-air version. The corresponding accessories such as pressure regulator, solenoid valve or flow sensor are optionally available.

Certificates

For the revised version ZS ECT II, all essential product certificates are available and comply with the latest specifications. It can thus be used as an ATEX device for zone 20 and/or 1 inside and zone 21 and/or 1 outside. Labelling is carried out in accordance with DIN EN ISO 80079-36: 2016, with the indication of code letter h, the temperature class and the surface temperature as well as the newly introduced equipment protection level (EPL). The utilization as a protection system for dusts is allowed up to dust class 2 (Ex D St2; p max = 1.0 MPa).

For use in the food sector, an EHEDG type EL Class II version is available, newly certified in April 2019. This version is approved for cleaning-out-of-place (COP) in the disassembled state by means of liquids. The main characteristics of the areas in contact with the product are suitable materials, easy-to-clean surfaces with Ra <0.8 µm and the hygienic design of the seals. The requirements are described in detail in the EHEDG Guideline DOC38 (Second Edition May 2017) for rotary feeders.



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In order to ensure optimal surface quality, this version is designed as a welded construction in order to avoid the risk of cavities and porosity which cannot be completely ruled out in casts. The shaft seal has an inwardly turned sealing lip to prevent dead spaces.



The newly designed exchangeable sealing cartridge takes into account the current requirements for safe cleaning and drying in the hygiene sector. For connection to the system, a centered counter flange including a suitable seal is supplied, which, for years, has proven its worth in similar applications.

With the new generation ZS ECT II, the manufacturer offers a rotary feeder series, which is optimized for handling and configurable according to the

application, and in accordance with the latest standards and guidelines - regardless of whether it is used in the field of minerals, chemicals or food. [fms](#)

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