

DRIVE

NEWS ABOUT COUPLING TECHNOLOGY

ISSUE 03 | MARCH 2009

Highest Standards in the Food Industry

Seafood Safety

The company Pickenpack – Hussmann & Hahn Seafood GmbH relies on R+W to safeguard the quality of its products. Fish is a highly prized natural product. It is almost impossible to provide a customer with a deep-sea fish so fresh from international waters as a fish that is processed and frozen immediately after capture. Pickenpack is one of the top companies in the deep-frozen seafood processing and packing market segment. The freshly captured fish is flash frozen after preparation and transported in this state to the filling and packing facilities. The delivery and discharge belts in the facilities are driven by toothed belt drives.

This drive is the heart of the entire system and determines its timing.

In high output batch production, machine downtimes result in high costs due to lost production.

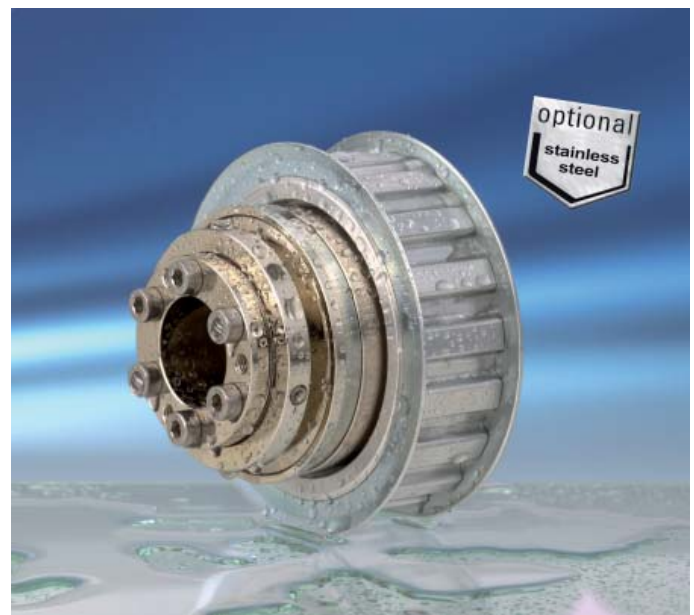
For this reason, Pickenpack chose the compact stainless steel safety couplings made by R+W, which deliver safe and reliable overload protection even under difficult conditions thanks to the patented coupling principle.

These safety couplings act like spring-loaded positive lock couplings by using balls that are pushed into spherical detents by spring pressure. This allows separation of the drive and driven elements within milliseconds. After the overload has been eliminated, they are once again fully operational within a short period of time, which is invaluable to production facilities.

A particular challenge was to protect the interior mechanisms of the safety coupling from abrasive cleaning agents, liquids and contaminants due to the strict sanitary requirements.

This required complete sealing of the coupling to prevent leakage of the food grade grease, while at the same time preventing substances from entering the coupling which could damage it. Here, all sealing elements are integrated in a single component. The O-ring is inserted in the base element of the coupling and is covered by an extended actuation ring. This system does not change the external dimensions of the coupling.

Sealed stainless steel couplings can be used for other standard industrial applications in the food, chemical and pharmaceutical industries.



By selecting one of the four functional systems, such as single-position, multi-position, full disengagement and load holding, it is possible to find an ideal match for the existing operating conditions of the particular application.

Innovations in the medical technology

High Torque Multi-Position Assists Easy Machine Reset

Tomo Therapy, the developers of a revolutionary new radiation treatment system for cancer patients, was in the midst of designing



the machine to be used for simultaneously scanning for and delivering radiation to malignant tumors within the cancer patients. Similar to a traditional CT scanner, the gantry is tasked with rotating the system around the patient bed through the use of a large ring gear. This high inertia load is driven by a smaller pinion gear mounted to a servo gearhead. Because of the high level of inertia mismatch present in the system it was determined that a mechanical torque limiter should be mounted between the gearhead and the pinion, protecting the system from overly aggressive attempts to accelerate or decelerate the heavy ring gear.

Problem:

A standard SK1/200/W was the largest size torque limiter which could fit inside the die cast pinion gear. Not only would disengagement occur too easily with a standard version, but the engineers were also concerned that automatically resetting a single position might be too difficult, since the machine operators in the hospital would not be capable of ensuring a slow ramp-up speed.

Solution:

Faced with this problem R+W specially designed an SK1/200/D/XX with a disengagement torque of 600Nm, and cleverly advised that a multi-position version may not allow enough time for the motor to reach a high speed before the torque limiter attempts re-engagement. The result is an extremely compact torque limiter that disengages when the engineers want it to, and re-engages when the operators need it.

Compact Couplings for the Glass Industry

Lower Mass Moment of Inertia in Drive System

For drive solutions requiring a high degree of torsional rigidity, tilt resistance, smooth operation, precision and backlash stability, connection of the flanged shafts for direct mounting is the best solution for gearing according to ISO 9409.

A planetary gear train is a particular type of toothed gearing. It features a characteristically compact design. The basic design consists of a gear train, although a combination of several planetary gear sets is also possible. In both cases, the key element is what is known as the center gear.

The company Zwiesel Kristallglas AG, manufacturer of high quality cut glass for tables and home decor, required a coupling that would meet their highest standards with regard to precision and size. Since the space for installing the glass was extremely limited, R+W was able to provide a solution with its EK8 coupling

that could solve this problem.

A flexible elastomer coupling for flanged gearing can also be used in other areas for machine tools and manufacturing systems, such as auxiliary shafts or part-turn valve actuators.

In addition, connections using a torsion-resistant metal bellows coupling for the highest degree of positioning accuracy in the print finishing and paper processing industry are also possible. Both types of couplings feature a compact design, giving them a very low mass moment of inertia.

