

Safety Couplings I General

Definition – Safety Couplings:

Due to the constantly increasing automation and dynamics of modern work processes, the devices which protect the complex and expensive units against damages in case of errors are becoming more important. JAKOB safety couplings reduce expensive machine damages, repairs and downtime by acting as torque limiters and overload protection absolutely reliably. JAKOB safety couplings are the life insurance for your machines, no matter whether the error occurs due to incorrect operation, programming error, material overload or tool breakage.

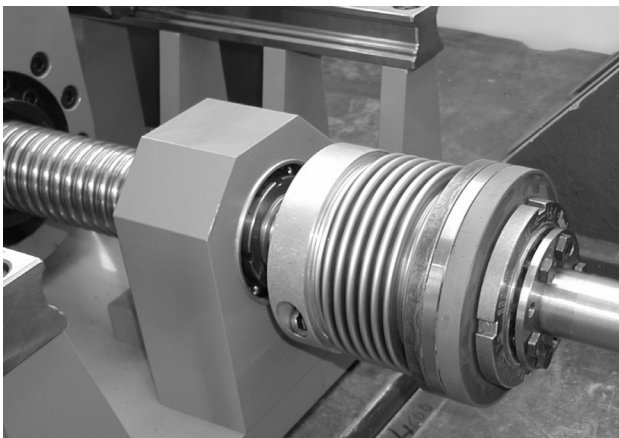
JAKOB safety couplings are the result of decades of continuous research and development as well as the experience gained from numerous different applications worldwide.

Unique design aspects, high-quality materials, precision machining of the individual components are some of the factors which make JAKOB couplings some of the leading couplings today. The safety couplings are used in all areas of the machine tool industry, ranging from critical servo drive applications to overload protection in conveyor systems.

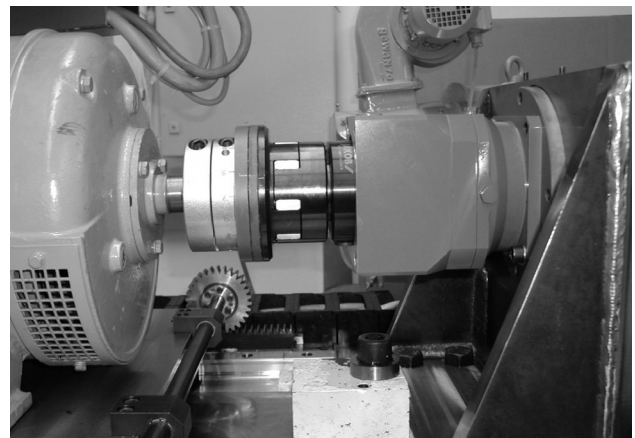
Performance Characteristics – JAKOB Safety Couplings:

- ✓ optimal overload and collision protection to minimize damage
- ✓ backlash-free, precise torque transfer
- ✓ stepless disengagement torque adjustment
- ✓ fixed point reengagement (360° synchronised position)
- ✓ automatic reengaging (optional feature)
- ✓ degressive spring characteristic ✓ precise disengagement function
- ✓ excellent dynamic functional characteristics
- ✓ low moments of inertia ✓ high-speed
- ✓ large selection of types (modular system)
- ✓ integral fitting of pulleys or gear wheels
- ✓ stop-signal (emergency stop) by use of a proximity switch

Application examples:



Collision protection of a drive spindle with safety coupling series SKB-KP with bellows attachment

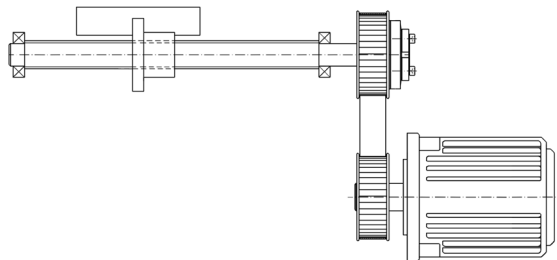


Safety coupling series SKB-EK with elastomer attachment for overload protection of a planetary gearbox

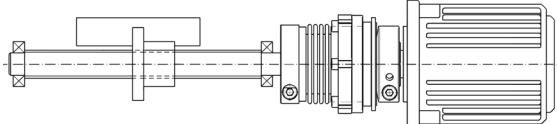
Safety Couplings I Modular System

The safety coupling modular system, consisting of three standard assemblies and several special variants, enables a solution for almost every application. Depending on the application, various add-on elements can be attached to the release mechanism to be attached. For indirect drives, belt pulleys, gear wheels or corresponding connecting parts are flanged on. In the case of direct drives, the release mechanism is supplemented with metal bellows or an elastomer coupling part to compensate for any shaft misalignments. The main selection and design criteria are the torque to be transmitted, the required torsional rigidity, the existing shaft diameter, the installation conditions and other operating parameters such as temperature, shaft offset and operating speed.

indirect drives



direct drives

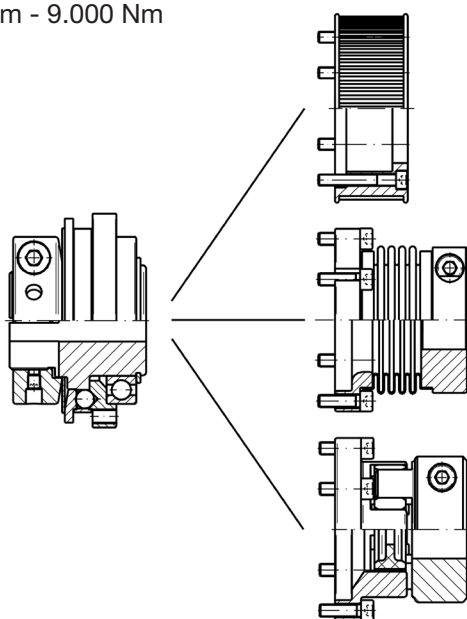


Overview:

safety mechanism

1 Nm - 9.000 Nm

attachments



- /// pulleys
- /// gears
- /// flanges

- /// metal bellows
 - torsionally stiff
 - all-steel-version
 - high operating temperatures
 - variable length

- /// elastomer spider
 - oscillation dampening
 - plug-in, electrically insulating
 - $T_{max} \leq 120^{\circ}\text{C}$

series

SK
SKW
SKR

SKB-KP

SKW-KP

SKB-EK

SKW-EK

Note:

- /// To reduce wear on the safety coupling mechanism the drive should be stopped as soon as possible after disengagement. The signal of the limit switch can be used for this purpose (emergency-OFF signal)
- /// In vertical drive axes, the slide or the table can drop upon disengagement of the safety coupling due to its own weight and the low residual torque of the safety coupling. To counter this effect, it is suggested that either a compensating weight or an additional brake be provided.
- /// During the coupling selection, the linear measuring system (positioning) must also be considered. When fitting an encoder to the drive motor, a torsionally stiff coupling should be used to get the best results.
- /// For high speed applications, please select types SKY or SKY-ES because of their rotational symmetry.
Nominal speed up to $4,000 \text{ min}^{-1}$ as well as safety couplings with release mechanism are possible on request.
- /// The safety coupling is maintenance free under normal operating conditions.
- /// For mounting instructions and explanations about the shaft - hub - connection, please see separate datasheets.