Functional Unit and Electrohydraulic Brake Release Device Comprising Such a Functional Unit

FIELD OF THE INVENTION

The present invention relates to a functional unit for a brake release device and an electrohydraulic brake release device including such a unit. The invention also relates to industrial braking installations.

BACKGROUND OF THE INVENTION

In the industrial sector there is a plurality of spring-loaded braking systems where a spring force acts on brake elements via a power-reinforcing lever system, said brake elements, in turn, engaging a corresponding brake block (e.g. a disk or a drum). Such industrial brakes are made e.g. as disk brakes, drum brakes and also as barrel tensioners. They are widely used in the conveyor technique, e.g. in conveyor belt systems, crane systems, conveyor systems and hoisting systems, etc. They are usually designed as safety brakes and operate according to the fail-safe principle. This means that the brakes are designed in such a way that they are automatically applied in a breakdown, e.g. in the case of a power failure, and stop the moving parts to be decelerated as quickly as possible or keep them in a certain position (e.g. in the case of hoisting gears or elevators).

For this purpose, it is initially necessary to keep the brakes in an open, i.e. released, state. This is achieved by what is called brake release devices which, in an activated state, operate against the brake spring force, eliminate the latter, open the brake and keep it in the (open) released state. This is often achieved by electrohydraulic brake release devices which act on the brake lever arrangement in parallel to the brake spring.

They operate according to the following principle: For releasing, a drive (usually an electric motor) is set in motion. This drive acts on a rotary pump which, during operation, pressurizes and conveys a hydraulic medium which, in turn, acts on a cylinder piston surface that is coupled to the brake lever arrangement via an actuating rod. In this connection, a certain pressure acts on the actuating piston surface at a certain speed and said pressure, in turn, applies a certain actuating force to the arrangement and neutralizes the (restoring) force of the brake spring.