Safe technology for powerful emotions

Reliable safety brakes and torque limiting clutches for stadiums and stages

Whether it is Mario Götze scoring the all-important winning goal at the World Cup in Brazil, Spiderman darting through the skyscraper canyons of New York in a movie, or artists enchanting their audiences on the big theater and opera stages - safety brakes and torque limiting clutches by mayr® power transmission are there 'live', securing machine movements in front of and behind the scenes.

Even though big events cannot take place at present, or can only take place to a limited extent and without an audience - broadcasting the events on the screens at home remains an important factor, in particular in the current situation. Rope camera systems in stadiums, for example, allow millions of viewers to experience all different sporting events up close in front of their television sets. The cameras "fly" over the pitch, so to speak - above the heads of both players and fans. ROBA-stop®-silenzio® safety brakes by mayr® power transmission from Mauerstetten in the Allgäu region of Germany provide the necessary safety. These brakes hold the cameras safely in position, making sure that the camera stops and does not fall uncontrollably in case of malfunctions, for example in case of power failure.

Flying artistes

Additionally, the redundant ROBA-stop®-silenzio® safety brakes are also used in airframes. The redundant safety brakes comply with the strict requirements of BGV C1 and EN 81 and reliably provide maximum functional and operational safety wherever people have to be held and moved. Whether it is Tarzan swinging on lianas through the jungle on the musical stage, Spiderman darting through New York’s skyscraper canyons in a film, Peter Pan flying to Never Never Land or Celine Dion “taking off” in a spectacular stage performance – during flight scenes in theatres, films and TV productions, the safety of the artists and stuntmen always comes first.

Great talents behind the scenes

Safety brakes by mayr® power transmission also work behind the scenes of large stages such as the Bolshoi

Theatre in Moscow, the concert hall in Stavanger, Norway or - geographically much closer to the Allgäu region - the Bavarian State Opera in Munich. The brakes ensure, for example, that the stage drives in scenery hoists and skylight hoists operate reliably. As the hoists of the upper machinery not only move and hold stage decorations or lighting units above the actors during a performance, but might also transport people, special safety requirements must be fulfilled. The ROBA-stop®-silenzio® safety brakes in the drives have a very important task here: In an emergency, they must save lives. In the event of a power failure or emergency stop, they bring the loads to a standstill as quickly as possible to prevent personal injury or damage to property. As redundant braking systems, the dual circuit brakes operate completely independently of each other. Each of the two brakes is therefore also capable of holding the load safely on its own, thus reliably protecting the actors on stage from falling parts in an emergency. ROBA-stop®-silenzio® brakes with their patented noise damping are the quietest safety brakes on the market - even after several hundred thousand switching cycles - and are therefore particularly suitable for noise-sensitive environments such as theatre or opera performances.

Olympic-standard performance

In addition to safety brakes, mayr® power transmission also provides customized clutch solutions for stage technology. To name an example, products from the renowned Allgäu-based family company were 'live' at the impressive opening ceremony of the 2012 Olympic Games in London. The audience was able to experience England’s development as an industrialised nation ‘live’. Among other things, six 36-metre high industrial chimneys with outer walls made of printed fabric rose from the ground. In order to stabilise the fabric housing as the chimneys rose, thus creating the impression of a massive wall, frictionally-locking torque limiters by mayr® power transmission were used. Whilst one winch pulled the upper frame of the chimney upwards, the drive of the second winch, which was located in the pedestal, moved against the tensile direction with relative speed and held the wire rope under tension. The differential speed between the two winches was compensated for through permanently slipping torque limiters in a special design. They were able to cope with the special requirements caused by the generated thermal load.

Quality is the winner

A type of sport, which involves a lot of technology already in the development stage and during the preparation for a race, is motorsport. Here, mayr® power transmission clutches are, for example, not only used in the Formula 1 driving simulators, with which the drivers prepare for the races, but also in performance test stands, which have become indispensable in the development and production of the vehicles. With these component and function test stands, the entire range of stresses and strains on the drive line and its components can be simulated realistically. As is to be expected, the corresponding requirements are high. If collisions occur at high speeds, they can cause severe damage. For this reason, these high-speed applications in particular require overload protection which is tailored to the high requirements. mayr® power transmission can draw on a wealth of experience in this field, and has extended its extensive standard product portfolio, amongst other things, by new sizes for the EAS®-HSE high-speed clutches with speeds up to 25,000 rpm. These clutches offer reliable protection without influencing the measuring signals. In order to achieve the high precision and reliability, mayr® power transmission relies on comprehensive tests and quality controls. All products are rigorously tested on test stands, and adjusted precisely to the requested values.