

CONTROL 
TECHNIQUES



**DRIVES
KEEP UP THE
PRESSURE**

BUCHER HYDRAULICS | ELEVATORS

DRIVE OBSESSED

HYDRAULIC COUNTERWEIGHT WITH FOUR-QUADRANT PUMP

Bucher Hydraulics of Neuheim, Switzerland design and manufacture the world's most advanced hydraulic elevator systems. Incorporating Unidrive SP drives from Control Techniques, the MRL-System BERIPAC™ offers a unique combination of high quality ride, high efficiency and low electrical energy costs, with a usage of up to 180 rides per hour without the need for an oil cooler.

Overview

- High degree of accuracy
- Extremely reliable
- Excellent support

The Challenge

Bucher is famous for its innovations, including their electronically controlled LRV valve that is insensitive to changes in pressure and temperature.

They brought significant energy savings to elevator production, as well as shorter travel times and virtually eliminated creep-to-floor. Striving for further system improvements, Bucher was seeking a way to improve elevator control.

"This system sets new standards in ecology and economy. The closed loop control and continuous approach to floor produces a ride comfort that is as good as the best on the market and this is in part due to the dynamic response and consistent, accurate following of the calculated speed curve."

Mr Grab | Product Manager



The Benefit

The compact, two-part elevator control cabinet can be sited almost anywhere and encompasses the elevator controller and Unidrive SP, as well as the hydraulic cabinet with emergency controls and 45-litre fluid tank.

The Solution

Having carried out considerable research, Bucher decided to use AC drives from Control Techniques and created BERIPAC™, which uses a hydraulic counterweight with four-quadrant pump.

It has direct-to-floor operation and has eliminated the need for an oil cooler.

The company chose the Unidrive SP from Control Techniques for pump motor control as it is "the one which we consider has the best combination of accuracy and reliability – plus outstanding international support", said Bucher Hydraulics Product Manager, Mr Grab.

The powerful Bucher controller receives multiple feedback signals, such as temperature, oil pressure and car position, from an absolute encoder and, on receiving a request, calculates the required riding curve. As the lift car comes down the shaft, its potential energy is released in the form of oil pressure that is stored in a hydraulic accumulator. On rising in the shaft, this energy is released in a controlled way via the pump to the pulling cylinder to minimise the additional electrical energy that is required.