

**BUCHER**  
hydraulics



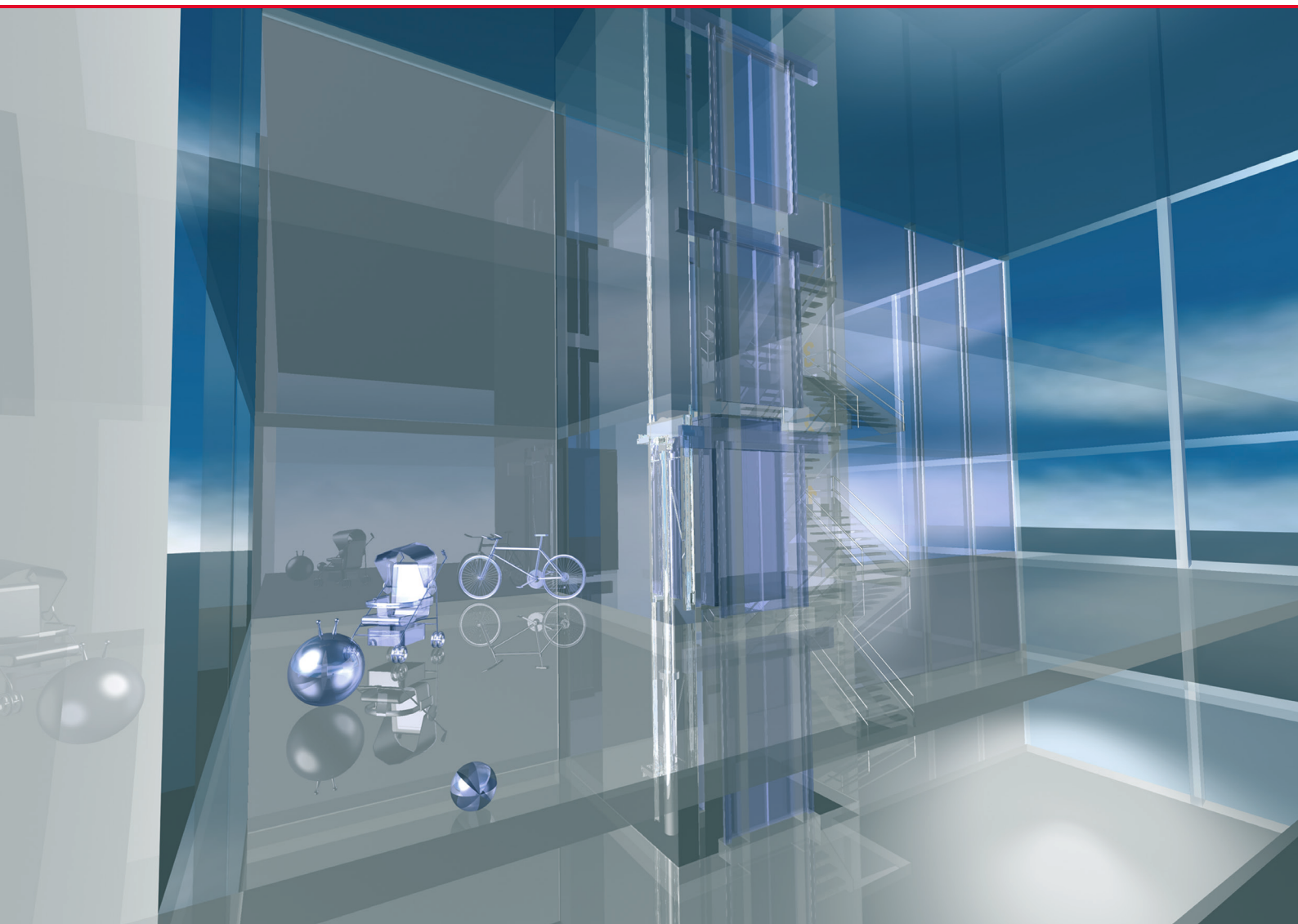
OIL SOLUTIONS

# Power Unit Series Comfort Line, Eco Line

Ingeniously simple

---

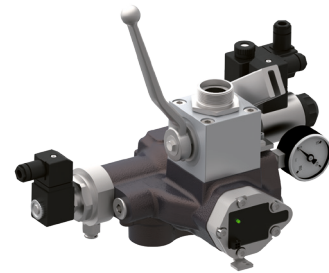
PO Box 38  
Strathfieldsaye, VIC, 3551  
1800 OIL SOL  
1800 645 765  
[sales@oilsolutions.com.au](mailto:sales@oilsolutions.com.au)  
[www.oilsolutions.com.au](http://www.oilsolutions.com.au)  
"For All Your Hydraulic Needs"



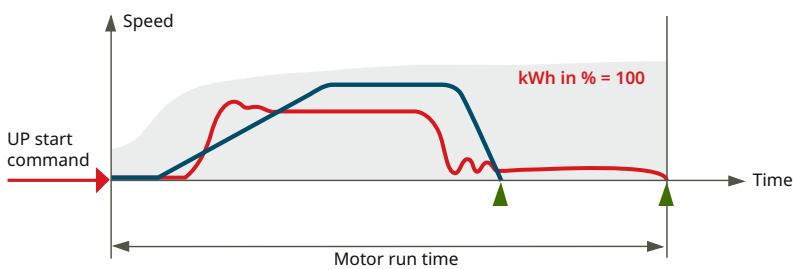
Unmatched hydraulic efficiency

# Electronically Controlled Lift Control Valve iValve

The graph below impressively illustrates the stability of the travel curve from the electronic iValve, independent of the operating condition.

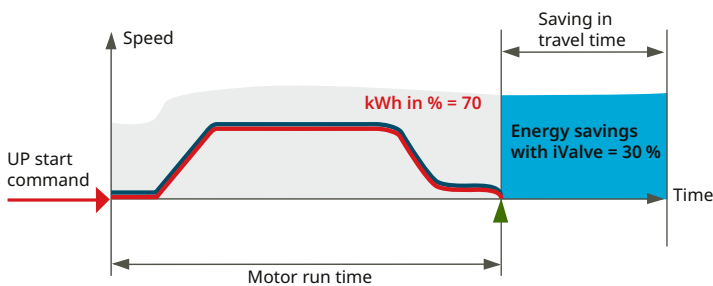


Mechanically regulated lift valve



Energy consumption  
 Lower landing  
 Upper landing

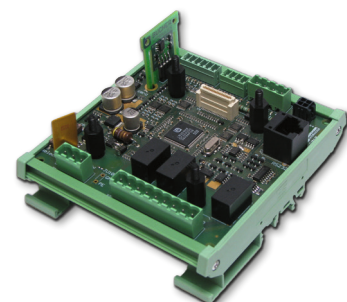
iValve the electronically controlled lift valve from Bucher Hydraulics

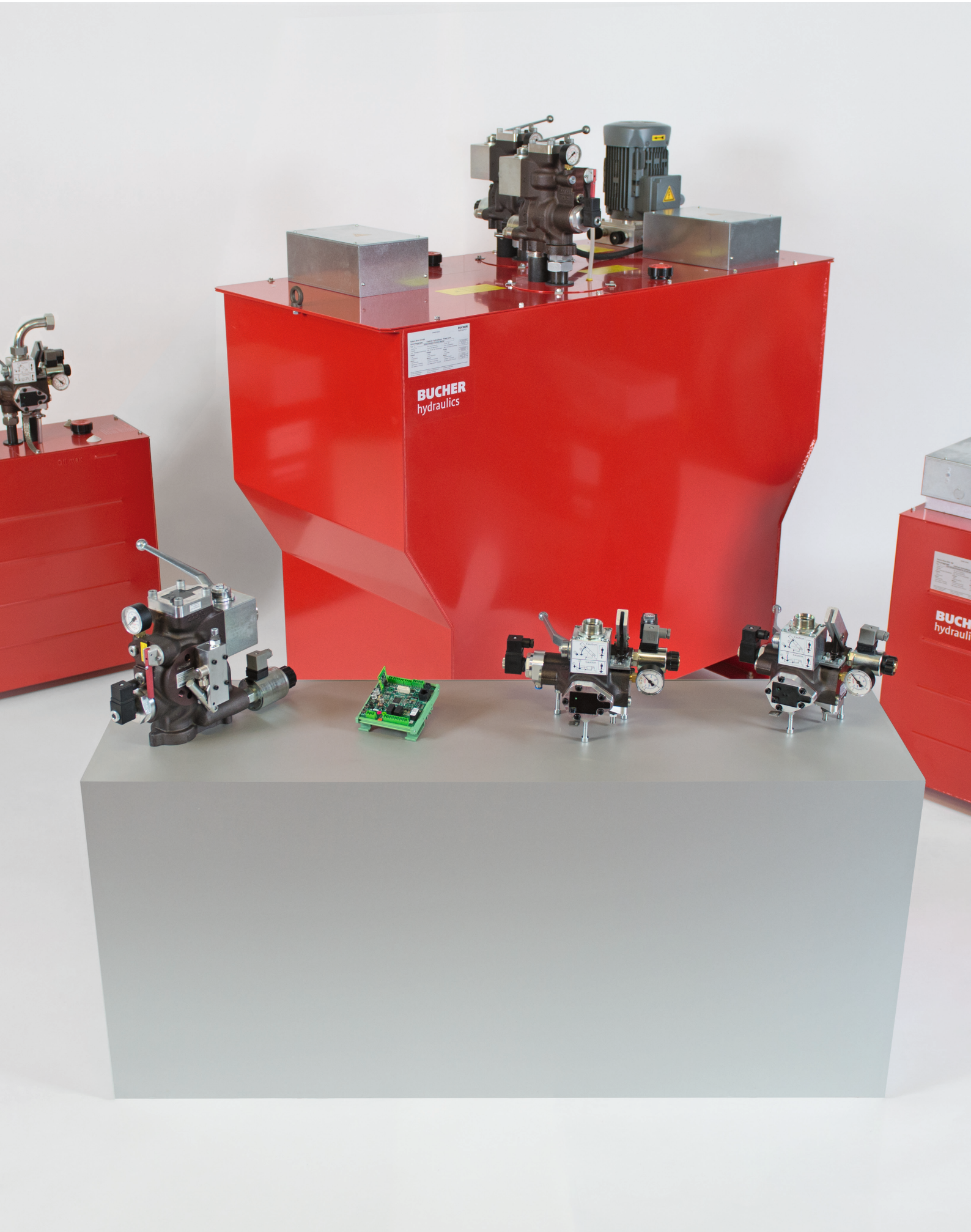


Energy savings with iValve = 30 %  
 Empty car and cold oil (Oil HLP 46 at 10°C)  
 Full load and hot oil (Oil HLP 46 at 60°C)

## Controller iCon-2 and ParamCard

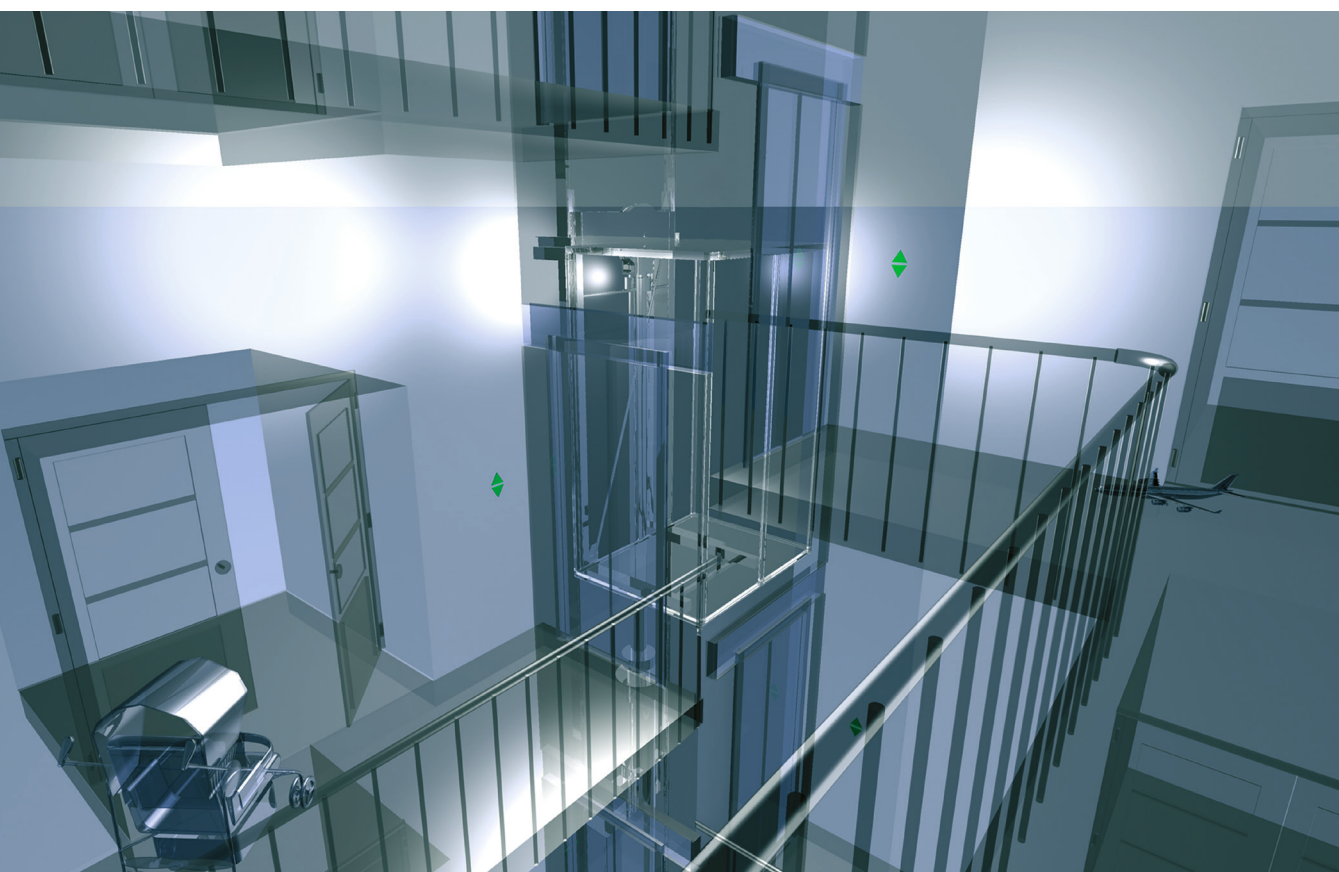
- The iCon-2 features the latest digital technology, complete with a range of interfaces for external peripheral equipment
- Any required number of option boards can be seated on the iCon-2: The system is open for any kind of interfaces and technologies that exist now and in future
- iCon-2 and iValve are not tied to a specific installation, and can be exchanged
- Data for the installation are saved on the ParamCard and can be quickly and simply transferred to other installations without any other settings
- Adjustments, supervisory operations and monitoring are possible via an external PC, handterminal or CANopen connection





# Comfort Line – the Standard Power Unit

---



### Maximum ride comfort independent of load and temperature

The hydraulic power unit with the electronic iValve guarantees maximum ride comfort, independent of load and temperature. The many options available allow it to be used in a wide range of locations, from new buildings to modernization.

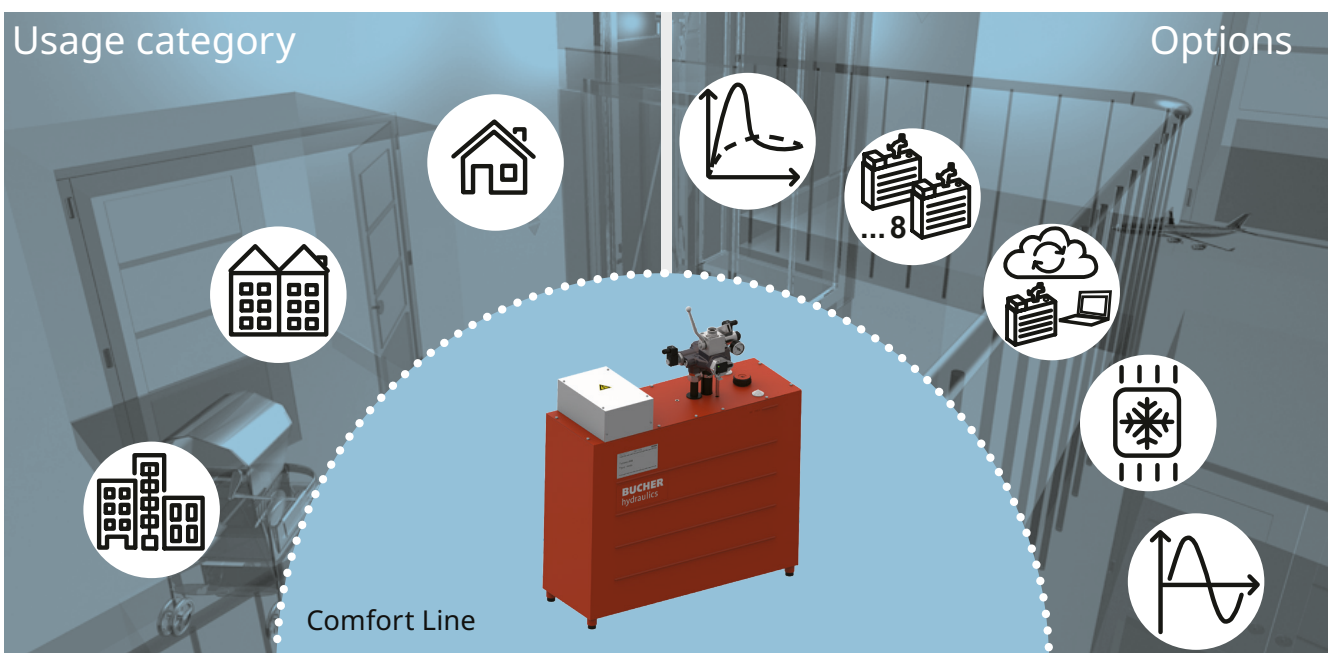
The Comfort Line can be supplied for hydraulic elevators for any required total loads and travel heights up to 25 m.

#### Advantages

- Straightforward, compact design and construction
- Optimized tank sizes, tailored to the floor area
- Constant travel times, even with changes in load and temperature
- Low energy costs
- Wide operating temperature range
- Short total travel time due to the short slow speed travel
- Oil cooling or heating only in very few cases necessary
- Down speeds can be increased by up to 50 % at no extra cost and without loss of comfort

#### Benefits for you

- Short commissioning time thanks to the „iTeach algorithm“
- Outstanding travel characteristics in the widest possible range of conditions
- Short set-up time
- Freedom of planning for architects, thanks to flexible positioning of drive system



Comfort Line

# Many Drive Variants

## Wide variations for a broad range of applications

Thanks to the high flexibility, most customer wishes can be satisfied and technical demands fulfilled.

### Valve sizes

30 – 500l/min



### Power unit sizes

150 – 1400 Liter



### Various options

- Further pressure switch outputs
- Soft starter
- Releveling unit
- Visual oil level gauge
- Oil heating
- Oil cooling
- Oil spillage tray
- Level switch
- Thermostat
- Bypass for testing the pipe-rupture valve
- Handterminal
- PC software
- Interconnecting pipe/hose for multiple power units

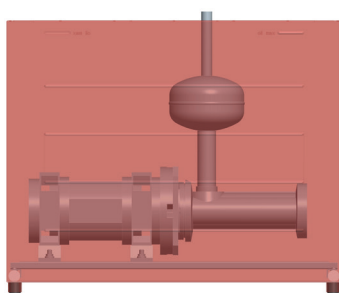
**Additional accessories available on request**



**Modular design provides the suitable solution**

### Numerous drive combinations

- Many variants of pumps and motors combinations



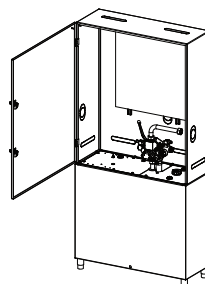
### Suitable for the following power units:

#### System cabinet 150

UDA 150  
with integrated  
oil spillage tray

#### Machine room cabins

UDA 150  
UDA 230  
UDA 350



Comfort Line

# VF-light and VF-light<sup>plus</sup>

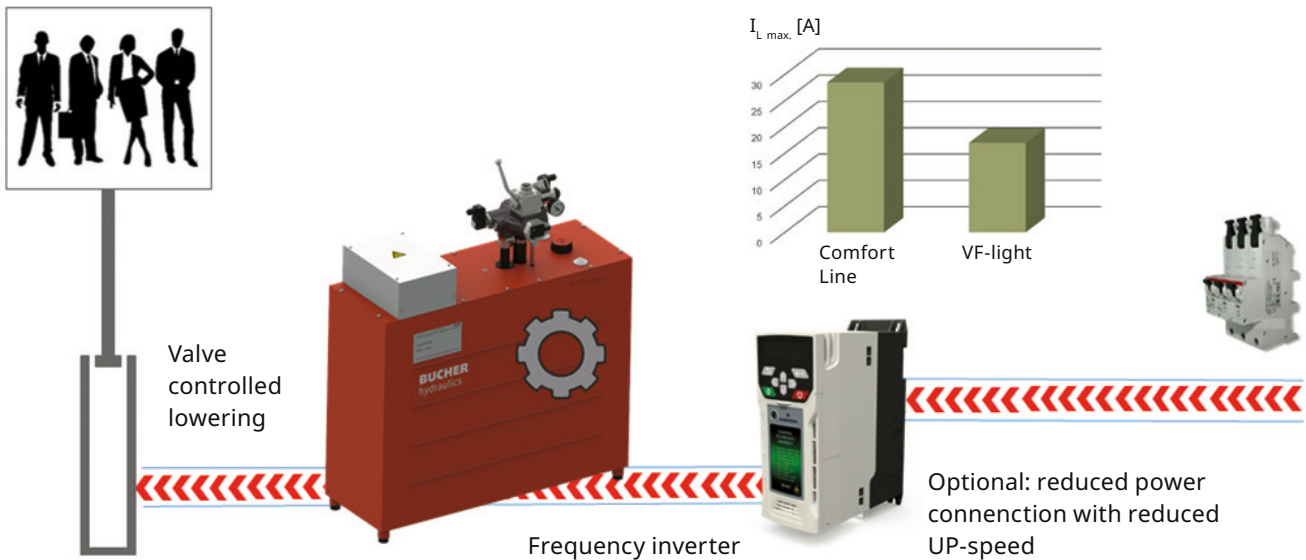
## Frequency-controlled drive in UP direction

### VF-light

- Constant UP speed, regardless of the car load
- Electrical supply rating is based on the maximum speed and load
- "No contactors" design can be implemented

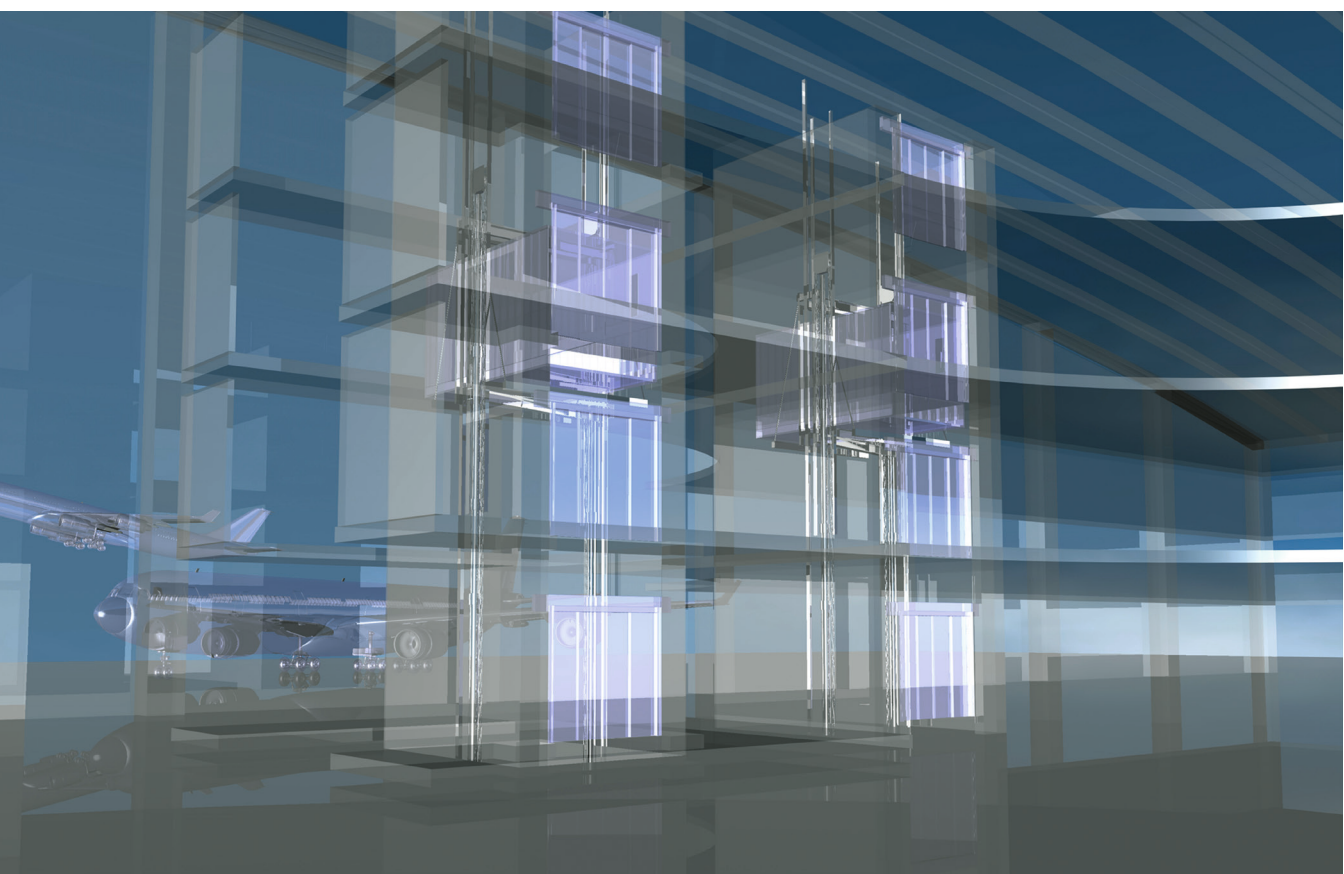
### VF-light<sup>plus</sup>

- Constant electrical power demand, regardless of the car load
- Variable UP speed, dependent on the car load
- Electrical supply rating is based on the nominal speed at 10% payload
- "No contactors" design can be implemented



# Eco Line – the Energy Efficient Power Unit

---



## Frequency-controlled drive in UP and DOWN direction

### Save up to 60 % energy

- Continuous short travel curve, independent of load and temperature thanks to VVVF technology
- Up to 200 rides per hour are possible without oil cooler and costly machine-room ventilation

### Up to 10 dBA quieter

- The VVVF drive minimizes bypassing sounds
- Optional operation without motor contactors

### Minimal installation effort

- No more settings of hydraulic parameters required
- The self-teaching algorithm „iTeach“ provides the shortest travel curve autonomously

### Highest safety

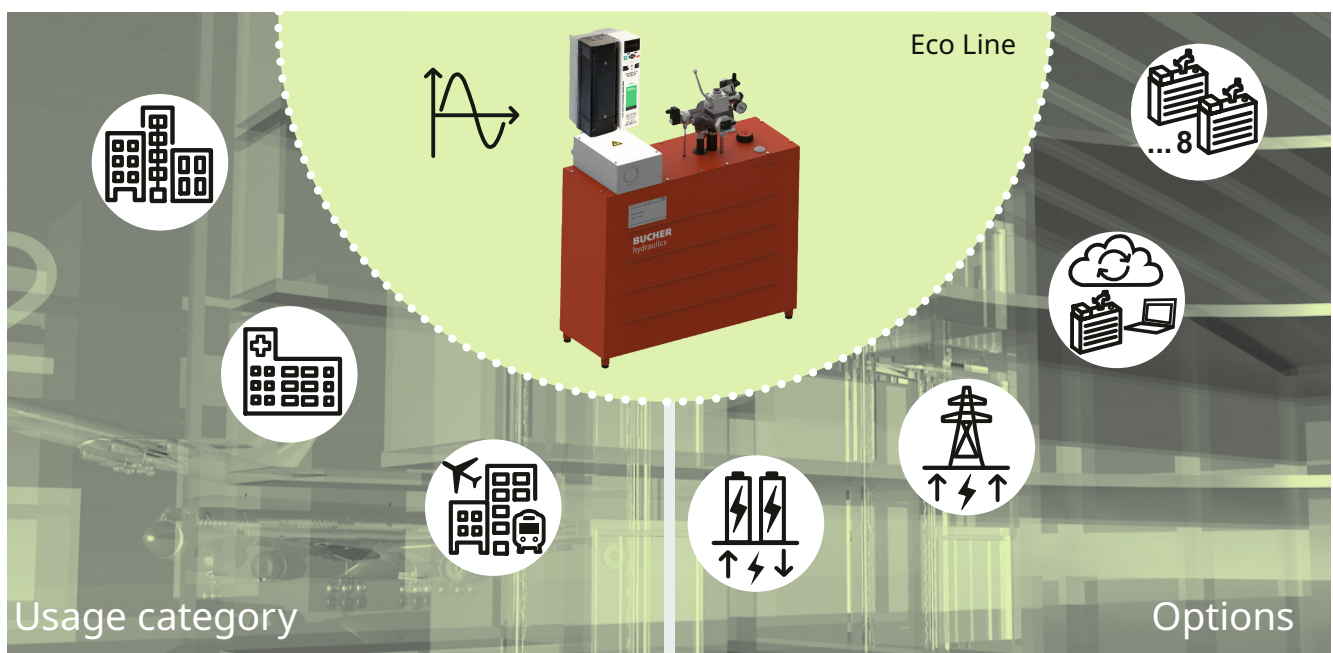
- Always an accurate positioning of  $\pm 3$  mm, to prevent trip hazard
- The self-monitoring function guarantees fully integrated A3 compliance (TÜV-certified)

### Maximum ride comfort, minimal travel time

- No start lag, fast and smooth ride curve, short and consistent slow-speed travels
- The soft-stop function allows almost direct landing

### Options

- Up to 40 % lower mains power rating and up to 20 % cheaper with Eco Line<sup>plus</sup>
- Further reduction of installation and maintenance costs through operation without motor contactors (TÜV-certified)
- Regeneration package available to feed up to 30 % of the drive energy back into the grid or SuperCap



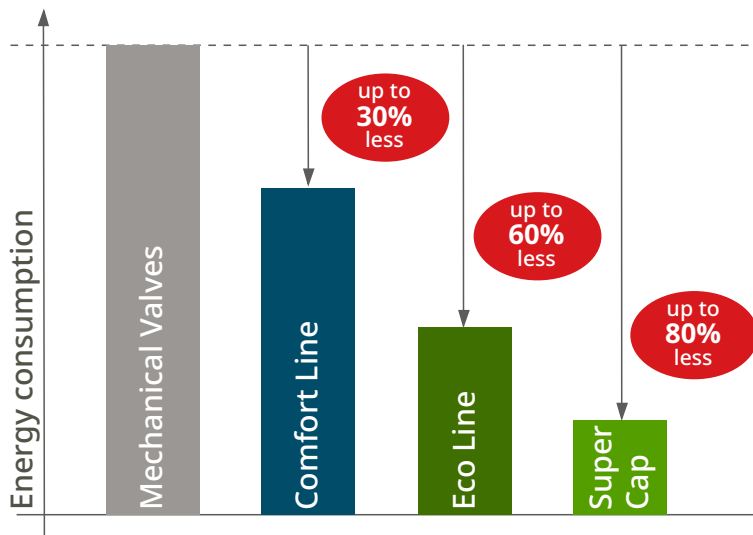
## Eco Line

# Unmatched hydraulic efficiency

The powerful, economical and low-noise drive solutions with reduced energy consumption of as much as 80 %.

There are several variants of the Eco Line

- Eco Line
- Eco Line<sup>plus</sup>
- Eco Line with SuperCap
- Eco Line with Regeneration



### Variable-frequency technology

Your investment in VVVF technology easily pays for itself.

**We will be pleased to calculate the possible energy- and cost-savings for an actual project!**

### Years of experience

Thousands of Bucher Hydraulics VF drive systems have been in successful operation since 1998.

### Further advantages of variable frequency drives

The combination of electronic iValve and the frequency inverter allows for absolutely perfect ride characteristics:

- Stopping accuracy  $\pm 3$  mm in UP and DOWN directions
- No start lag, fast and smooth start
- Start current limited without soft starter

### Optional

- Further reduction of installation and maintenance costs > operation without motor contactors (TÜV-certified)
- Max. reduction of power connection > load dependent speed control (limits current required)
- Regeneration package available to feed up to 30% of the drive energy back into the grid or SuperCap

Continuous current, load-dependent speed reduction

## Eco Line<sup>plus</sup>

Reduce mains power rating and costs

**Additional advantages:**

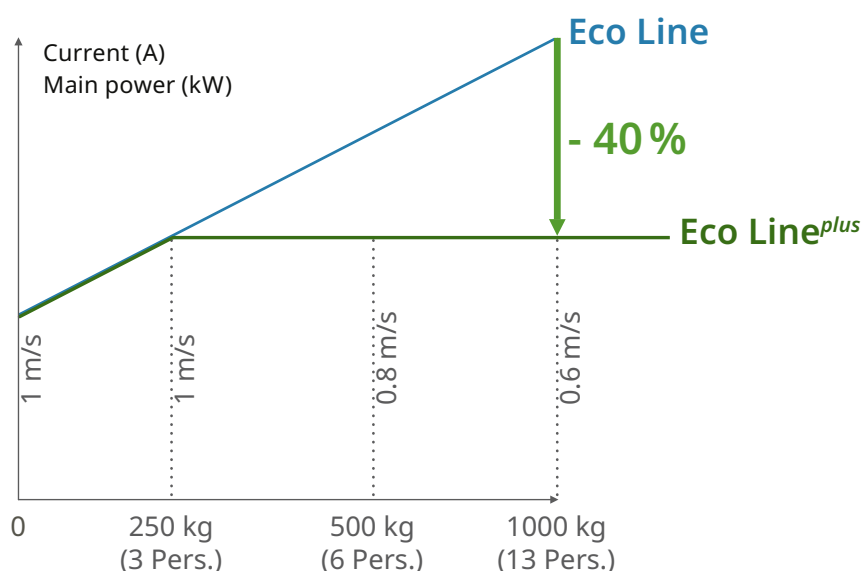
**Up to 40 % lower mains power rating**

With Eco Line<sup>plus</sup> we offer the possibility to define a load-dependent travel speed: With heavy car loading the UP ride is reduced. Therefore the maximum mains power rating does not have to meet the demands of maximum car loading at maximum speed. The maximum mains power rating can be significantly reduced - this can amount up to 40%! Travel DOWN remains constant at the nominal speed.

**Up to 20% cost savings**

Not only the mains power rating is reduced considerably, the frequency inverter as well as other components can be configured smaller, too. Thus, the cost can be reduced up to another 20%.

This graph shows the reduction of mains power rating of a typical lift that can be realised with this option:



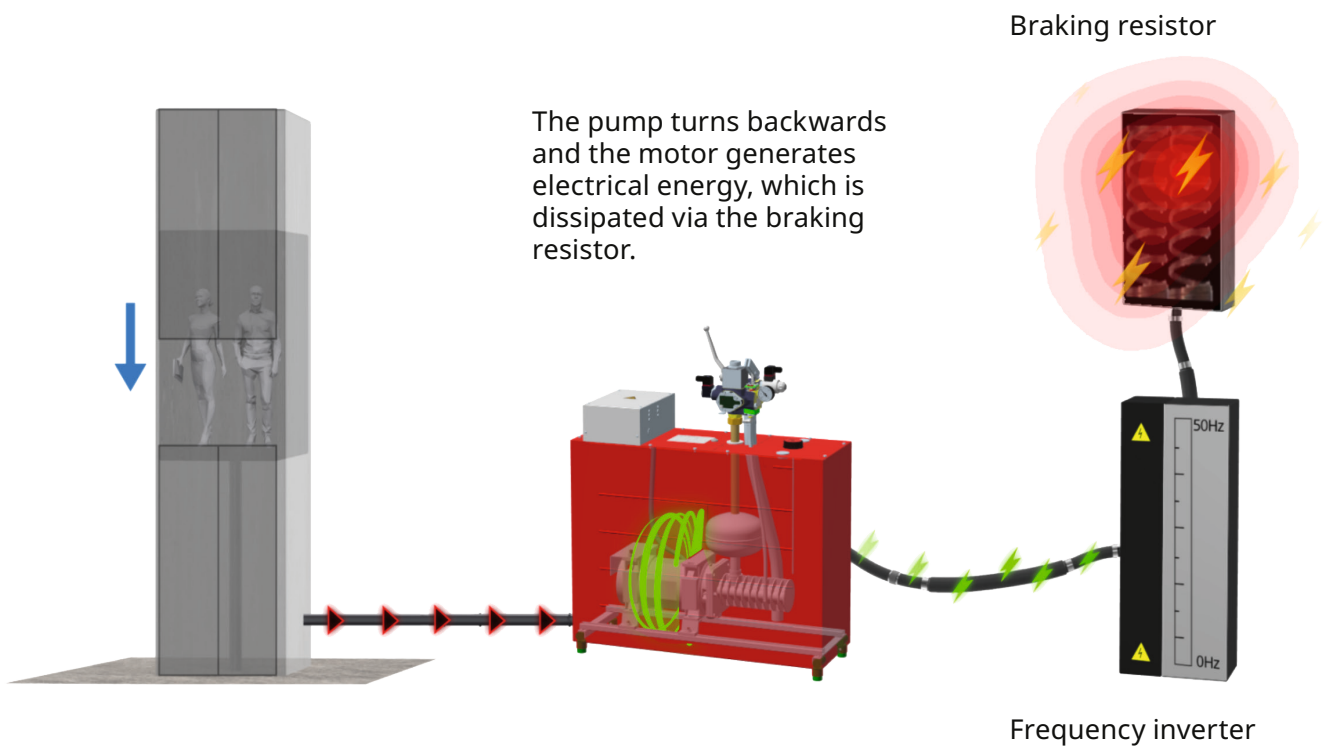
In this example with Eco Line<sup>plus</sup> the mains power rating can be reduced by 40% compared with our standard Eco Line. With a car loading of 1000kg, the lift now rides with a reduced speed of 0.6m/s instead of 1 m/s.

Eco Line

# Braking Resistor

**Standard: Energy is converted into heat**

- The basic solution in the elevator business
- In most cases no oil cooling necessary as the heat is dissipated via the braking resistor
- Increased numbers of drives can be realized without any problems

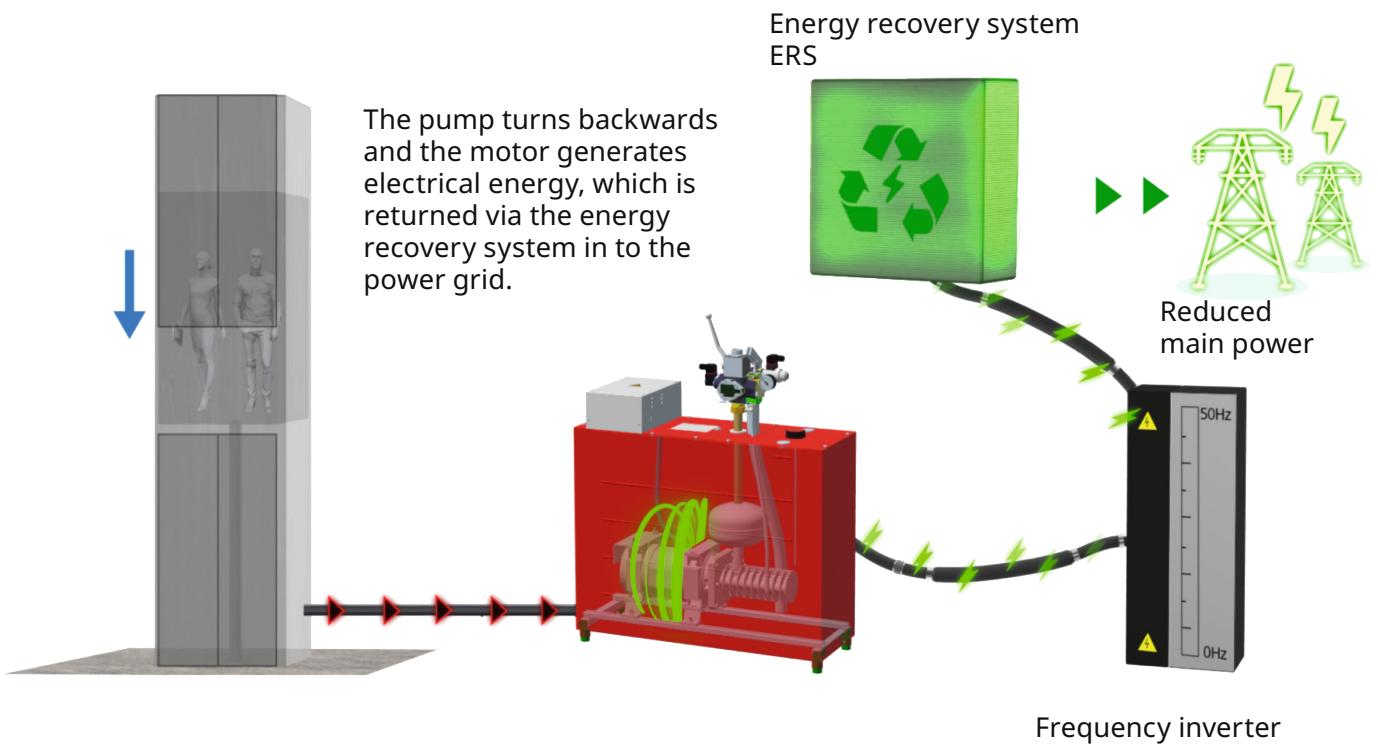


System visualisation shows downward travel

# Energy Recovery System ERS

## Option: Energy recovery into the power grid

- Simple energy recovery for new and existing systems
- 5 kW peak power per unit
- Several devices can be connected (parallel)



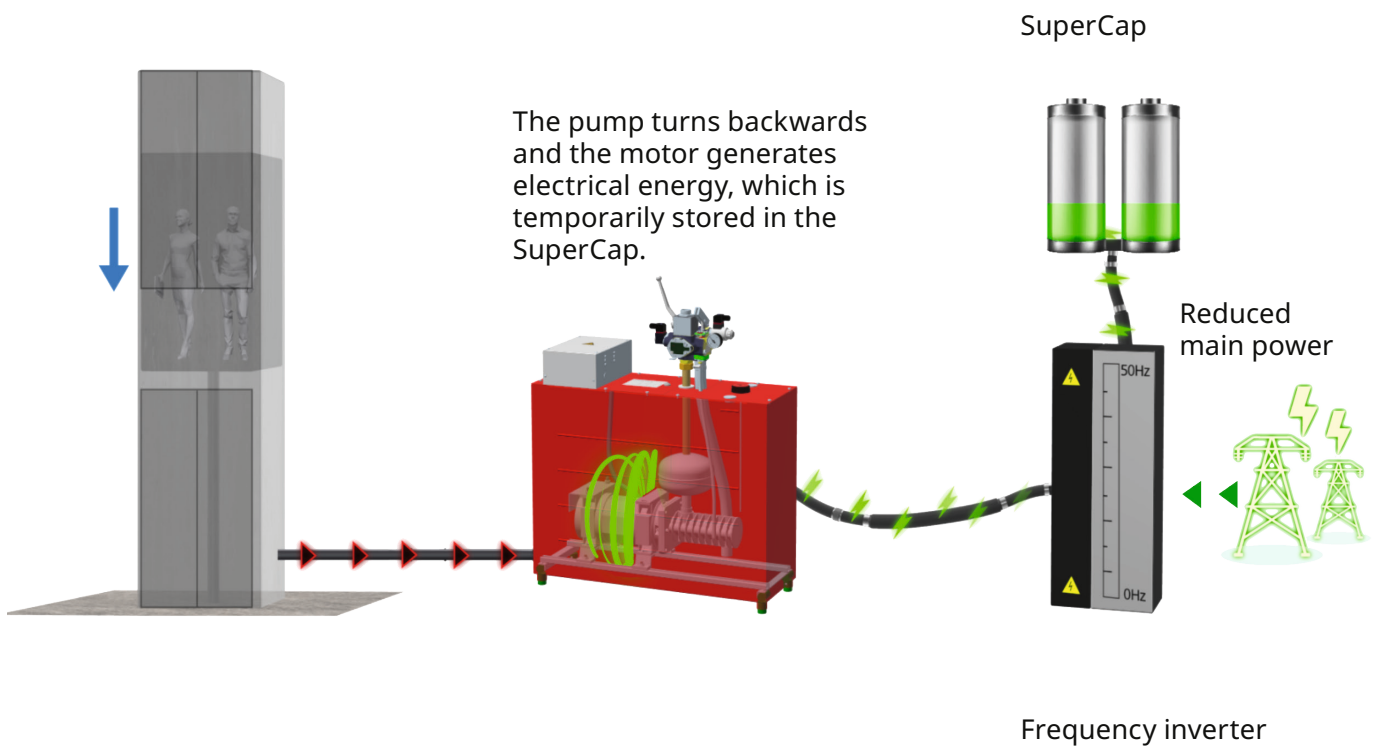
System visualisation shows downward travel

Eco Line

# SuperCap

## Option: Intermediate energy storage

- Reduced main power at maximum load and nominal speed
- Simple retrofitting are possible

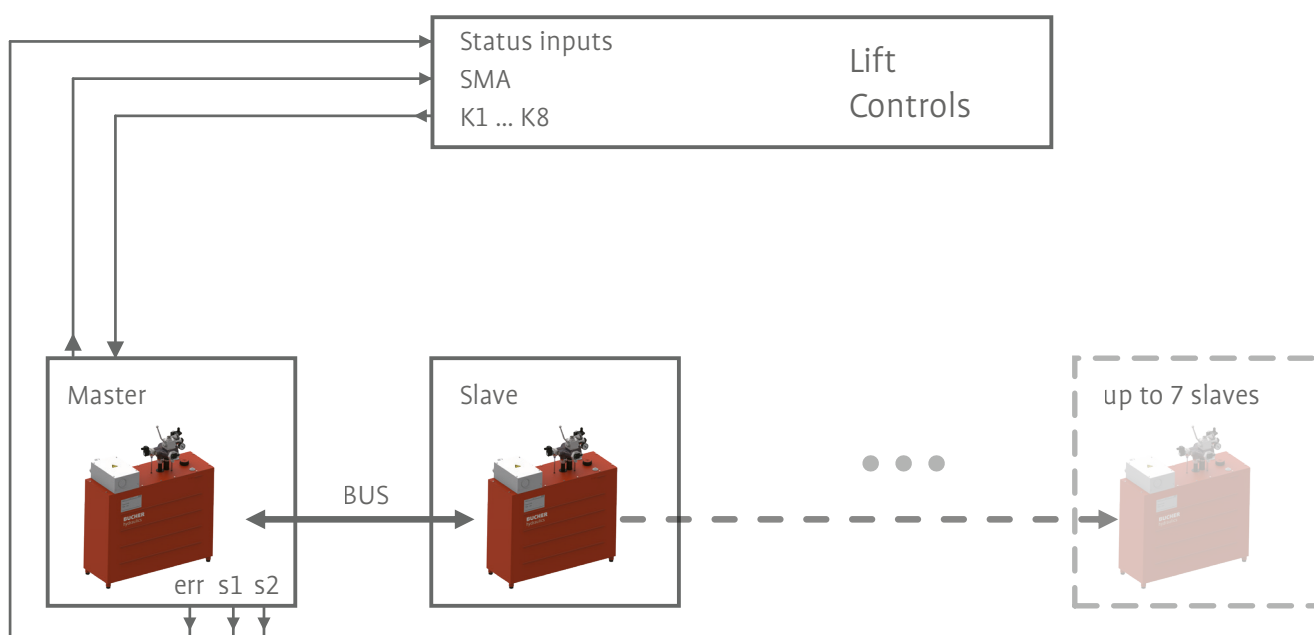


System visualisation shows downward travel

# MULTIvalve

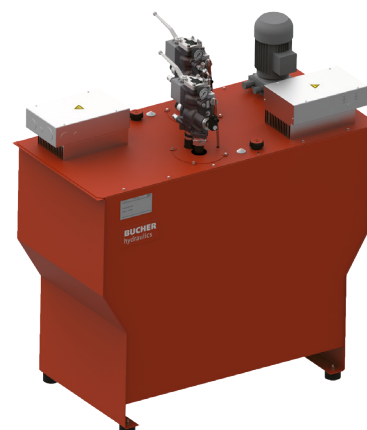
## MULTIvalve

- Several iValves can be controlled via the master-slave concept
- Electrical supply rating can be reduced without frequency inverter
- Easy wiring
- On demand, the lift can be operated with just one drive, at reduced speed



## MULTIvalve Power Unit

- Power unit with two drives and output flow up to 1 000l/min
- Drives can be operated independently
- Each drive can be fitted with a soft-starter



Comfort Line & Eco Line

# CANopen Hydraulic Elevator

---

Digitalization and networking offer completely new possibilities for modern elevator hydraulics. With the ongoing development of its valve technology in conjunction with sensors and bus systems, Bucher Hydraulics is at the forefront of innovative solutions in this field.

## Big potential for greater efficiency

Viewed as a development platform, the intelligent iValve with CANopen-Lift interface offers far-reaching improvement potential for hydraulic elevators – a potential that is already being exploited in the area of time- and cost-saving installation and commissioning. In addition, elevator manufacturers can develop new service concepts thanks to remote monitoring and the predictive maintenance that results from it. All in all, these advantages increase competitiveness and secure the elevator manufacturer's market position.

## Main features of a CANopen elevator

- Simplified interface and reduced wiring effort
- The elevator system can be accessed remotely via the elevator control system
- Identical functionality as with a handterminal
- Viewing and setting of various operating data & parameters

## Summary

All in all, digitalization and networking change not only the manufacturing of elevators, but also their commissioning and the entire service process, in which reliable and life-extending maintenance measures are key factors. Maintaining a hold on a market position and/or aiming for company growth already demand that elevator manufacturers have larger sales territories involving longer journeys. Integrating new technologies into the business model can significantly improve the management of these larger territories, as service personnel can be deployed more efficiently thanks to up-to-date information. The intelligent iValve from Bucher Hydraulics already offers the prerequisites needed to meet all these challenges and to be able to press the strategic UP button to „Lift 4.0“ at an early stage.

### Our CANopen Solution

The unique diagnostic functions, which are based on the information made available and then transmitted via bus systems, form the basis for the predictive maintenance or needs-oriented service that has the aim of increasing the system availability. The early planning of predictable measures saves time, travel and costs, as potential faults can be identified long before a possible stoppage.

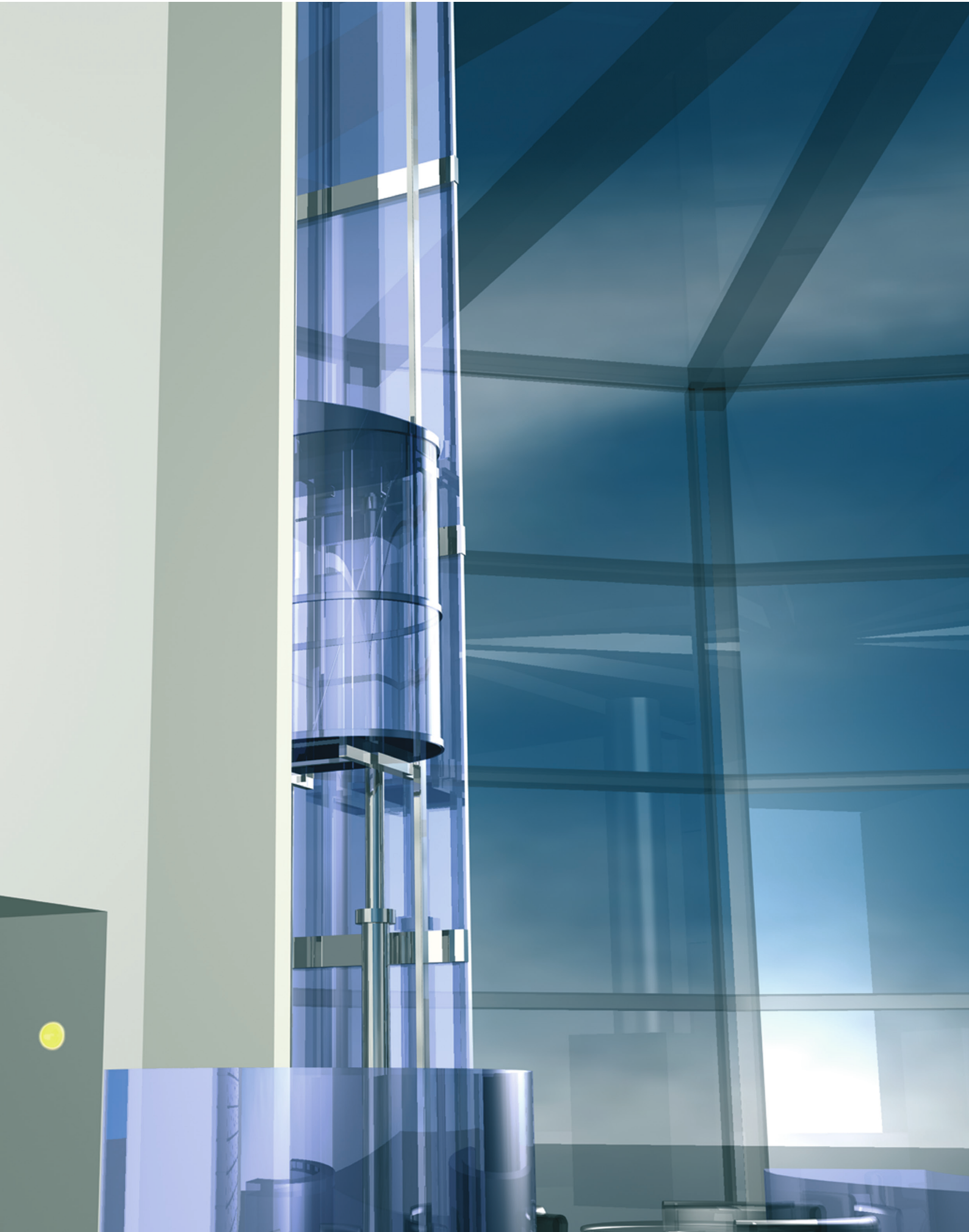
Applying the innovative valve technology of the iValve in conjunction with CANopen-Lift, elevator manufacturers can use it to suit the particular requirements that the elevator must fulfill, and configure it for future customer needs. In further steps, systems can increasingly be networked and digitalized, thus making them smarter. Of course, this also applies to the modernization of existing hydraulic systems.

### The available options

- Remote and local access to the lift control valve iValve or VF-iValve via the lift control system
- Output of operating data, e.g:
  - pressure
  - temperature
  - error logs
- Setting of parameters, e.g:
  - driving curve
  - pressure switch
- CANopen interface
- Can be used with Comfort- and Eco Line
- Can be retrofitted to existing lift systems with the lift control valve iValve or VF-iValve







[bucherhydraulics.com](https://www.bucherhydraulics.com)

---

**Bucher Hydraulics AG**  
Industriestrasse 15  
6345 Neuheim, Switzerland  
T +41 41 757 03 33  
[elevator@bucherhydraulics.com](mailto:elevator@bucherhydraulics.com)