



# ***LiftEquip***<sup>®</sup>

ELEVATOR COMPONENTS

## **Type Examination Tested Lift Systems with Components available free in the market**

In order to be able to bring type-tested systems with free components at low cost into the market, LiftEquip has the systems with the required version designs checked and the existing test certificates supplemented.

**Volker Lenzner**  
**Technical Director**

Tel. +49 7158 12 2967

Mail [volker.lenzner@liftequip.de](mailto:volker.lenzner@liftequip.de)



### Initial Situation

Type-tested lift systems dominate large sections of the market on account of their technically-optimised solutions and associated economic benefits.

Most of the type-tested lift systems available on the market are not offered as open systems on the market.

LiftEquip has adopted another approach here and has systems that are already type-tested with controls freely-available on the market, inspected by the technical standards organisation TÜV.

By referring to examples, I would like to tell you more here about implementation and market experiences.

## Systems as a mechanical Kit

At LiftEquip, we exploit these advantages by extracting a mechanical kit from existing systems and offering our customers the opportunity to put together an open system, with components such as a control that is freely available on the market and the other electrical assemblies.

This is the easiest way for an assembly company to find a legally-secure solution on the market for MRL systems.

Based on the electric interface description and documentation of the type-tested basic system, the customer can complete the lift and then distribute it by means of an individual acceptance inspection.

## Systems as type-tested complete Systems

But LiftEquip would like to go further here based on its experience and offer its customers an even better service to simplify the use of these systems.

To this end, we have the lift system checked by TÜV Süd on the basis of the first certification with additional controls and electrical components as complete system.

The customer can then distribute the certified system with this type test certificate.

This reduces the effort and costs for the technical processing and documentation and also the costs for distribution.

**Initial Situation**

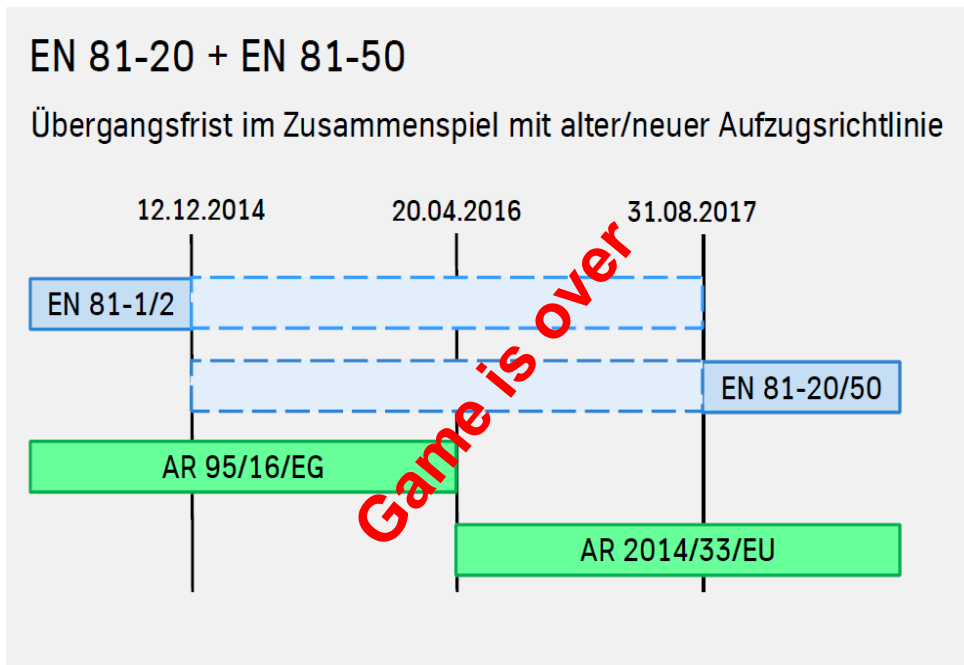
**2014/33/EU and EN 81-20/-50 –  
Type-Tested System Solutions**

Type-tested systems dominate large parts of the market in the standard sector:

- Why is this?
- Components or systems – how will the market develop?
- What does this mean for the market of new lifts and modernisation?
- What kind of solutions are possible?
- How will LiftEquip reacting to market requirements?
- Solution examples of a supplier of “free” components and systems

Initial Situation

## Change Lift Directive and EN 81-xx:



New lifts may only be distributed on the basis of EN 81-20/-50.  
The requirements from EN 81-20/-50 must also be applied to state of the art  
For modernizations.

Initial Situation

## What can be expected?

- Demands for safety and environmental protection will continue to rise
- The systems will become more complex and the demands on operating companies, maintenance companies and employers / operators / users will rise.
- As a result, the standardisation of interfaces will become increasingly important
- The need for training for employees in all areas and the requirements on documentation will also continue to rise
- Customers expect well-founded advice

## Initial Situation

### What is our experience on the market

- There is very great uncertainty regarding the use of type-tested components according to the old or new Lift Directive
- Use of existing safety components for UCM is questioned
- What does it mean to operate the lift according to the state of the art (reference to DAfA [*German Lift Committee*] action instruction in the absence of a TRBS [*technical regulations for operational safety*])
- Increased objections upon distribution

### Reactions from the market:

- Increased calls for tenders with free components
- Heightened demand for package solutions in modernisation
- Greater demand for kits, preferably as type-tested complete system in the new lift



# Type-Examination Tested Lift Systems with Components Available in the Market

## Solutions by LiftEquip

### Safety Components



### Lift Components



### Drives / Inverter



### Doors



### Systems

LEA® Standard	LEA® Comfort
Im Standard zu Hause	Der Allrounder
MRL	MRL
450 - 1000 kg	450 - 4000 kg
1,0 m/s	1,0 - 2,5 m/s
40 m	100 m



# Type-Examination Tested Lift Systems with Components Available in the Market

## Solutions by LiftEquip

<b>LEA® - Family</b>	
<b>Standard</b>	<p><b>At home in the standard range</b> The economical and space-efficient solution for medium travel heights in the standard range. Reduced safety spaces available.</p> <p>Type: MRL      Rated Load: 450 – 1.000 kg Travel height: 40 m      Speed: 1.0 m/s</p>
<b>Flexible</b>	<p><b>Variable and functional</b> Flexible dimensions for medium travel heights. Available with many equipment variants.</p> <p>Type: MRL      Rated Load: 450 – 1.000 kg Travel height: 40 m      Speed: 1.0 m/s</p>
<b>Comfort</b>	<p><b>The all-rounder</b> Superior technology for exacting requirements and more heavily frequented buildings.</p> <p>Type: MRL      Rated Load: 450 – 4.000 kg Travel height: 100 m      Speed: up to 2.5 m/s</p>
<b>Comfort Plus</b>	<p><b>A classic</b> Tried-and-tested elevator system with machine room and with geared or gearless drive.</p> <p>Type: MR      Rated Load: 450 – 2.500 kg Travel height: 135 m      Speed: up to 2.5 m/s</p>
<b>Cargo</b>	<p><b>Robust and reliable</b> Sturdy freight elevator with machine room and with geared or gearless drive.</p> <p>Type: MR      Rated Load: from 1.800 kg Speed: up to 1.0 m/s</p>
<b>Home</b>	<p><b>Personal and individual</b> The Gulliver and Orion home lift, in accordance with 2006/42/EC, up to 5 landings, over 70 platform variants and design options.</p> <p>Travel height: 15 m      Speed: 0.15 m/s</p>

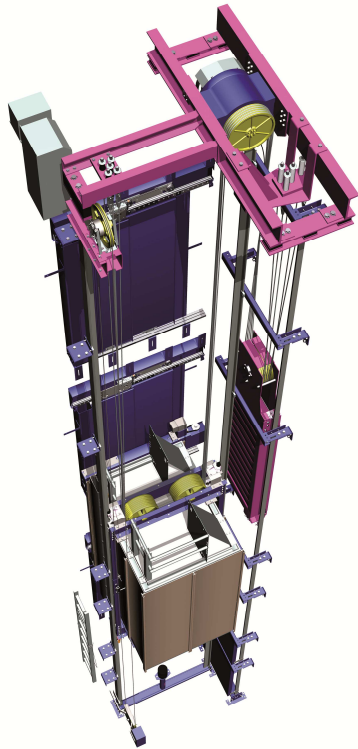
## System kits based on certified complete systems and with certified assembly concept:

- Multitude of all kinds of systems and car design combinations optionally also with glass back elements
- MRL kit (LEA Standard) optionally with reduced protective rooms (shaft head and shaft pit)
- **Certified system solutions with free components (LEA Comfort) and type test with a control from Kollmorgen, in future also with reduced protective rooms**
- Lift system (LEA Comfort Plus) With machine-room and flexible dimension, alternatively with gearless or geared
- Individually-planned solutions (LEA Cargo) with machine-room
- Home lift for private use

# Type-Examination Tested Lift Systems with Components Available in the Market

Solutions by LiftEquip

## Kits and Type Testes Systems with available Components in the market



Mechanical Kit  
since 2003



mechanisch Kit  
since 2016

### The following are not included in delivery:

- control with operating cabinet and measures to rescue passengers
- operating and display elements
- external operating panels
- surface- and flush-mounted operating panel in the car
- emergency call system
- car distribution box
- lift cable
- shaft copying
- shaft cabling and illumination
- inspection control, emergency off-switch
- integration of the inverter
- connection of the car lighting and the overload sensor
- load measurement installation (occupied, fully-loaded and overload)
- emergency light
- All of the above-mentioned components must be provided by the assembly company or a control supplier.

The corresponding interfaces for the mechanical kit are correspondingly documented

# Type-Examination Tested Lift Systems with Components Available in the Market

## Solutions by LiftEquip

### System comparison LEA Standard – LEA Comfort

- Lift system developed for mass production as mechanical kits or as complete systems with type test for the most varied areas of use and applications
- Different nominal load and speed limits
- Both systems can be configured and calculated via an online tool

Elevator system	LEA® Standard	LEA® Flexible
Main feature	At home in the standard range	Variable and functional
Characterization	The economical and space-efficient solution for medium travel heights in the standard range. Reduced safety spaces available.	Flexible dimensions for medium travel heights. Available with many equipment variants.
Scope of delivery	System kit without control with peripherals and without control / display elements.	System kit without control with peripherals and without control / display elements, with variable scope of delivery.
Installation training / assembly box	yes / yes	no / no
Standard	According to the Lift Directive 2014/33/EU and according to EN 81-20/-50	According to the Lift Directive 2014/33/EU and according to EN 81-20/-50

Type	MRL	MRL
Rated load	450 - 1000 kg	450 - 1000 kg
Speed	1.0 m/s	1.0 m/s
Max. travel height	40 m	40 m

Machine	Gearless	Gearless
Suspension	2:1	2:1
Location Machine Room	without	without
Shaft head / Shaft pit reduced	optional / optional	- / -
Car dimensions	fix	flexible
Door types	M2T / M2Z	M2T / M2Z / M4TZ

Recommended applications by type or use of building		
Residential building	●	○
Exalted residential building	○	●
Office building	○	●
Exalted office building		○
Existing building	●	●



## Type Tested System – LEA Comfort



### System components and scope of delivery:

MRL system as mechanical kit from LiftEquip  
Control and electrical equipment from Kollmorgen

- Calculation online via LiftEquip System Genesis
- Proposal generation with lift drawing
- Lift documentation (lift book and operating instructions)
- Type test certificate for the complete system
- Training and assembly documents
- Assembly concept
- Distribution through simplified examination of the type-tested entire system
- Complete delivery of entire system from one source

verfügbar ab Q 4 / 2017

## Type Examination Certificate for LEA Comfort



### EU TYPE-EXAMINATION CERTIFICATE

#### EU - ML 210

Lift without machine room

Rated load (Q): 450 kg to 4000 kg

Rated speed (Vn): 1,0 m/s to 2,5 m/s

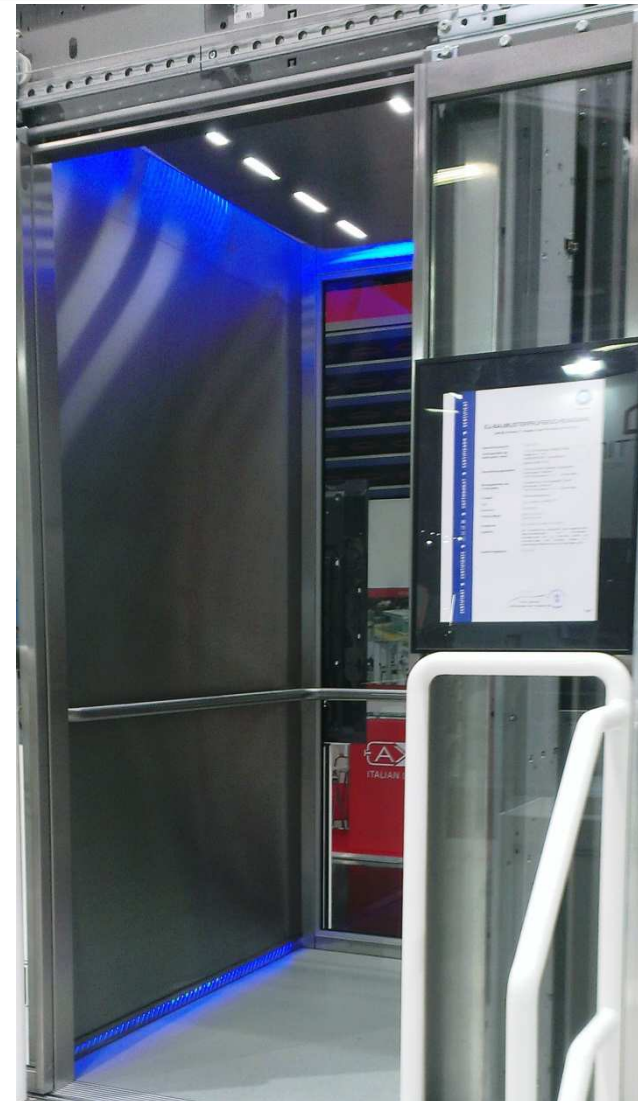


# Type-Examination Tested Lift Systems with Components Available in the Market

## Lösungen bei LiftEquip

### Test Certificate LEA Comfort

	
<b>EU-BAUMUSTERPRÜFBESCHEINIGUNG</b> gemäß Anhang IV, Absatz B der Richtlinie 2014/33/EU	
Bescheinigungs-Nr.:	EU-ML 210
Zertifizierstelle der Notifizierten Stelle:	TÜV SÜD Industrie Service GmbH Westendstr. 199 80686 München - Deutschland Kennnummer 0036
Bescheinigungsinhaber:	LiftEquip GmbH Elevator Components Bernhäuser Straße 45 73765 Neuhausen a. d. F. - Deutschland
Montagebetrieb des Prüfmusters:	ThyssenKrupp Aufzugswerke GmbH Bernhäuser Straße 45 73765 Neuhausen a. d. F. - Deutschland
Produkt:	Treibeisbenaufzug
Typ:	LEA Comfort mit MPK 411
Richtlinie:	2014/33/EU
Prüfgrundlage:	EN 81-20:2014 EN 81-50:2014
Prüfbericht:	Nr. EU-ML 210 vom 16.10.2017
Ergebnis:	Der Mustersaufzug entspricht den wesentlichen Gesundheitsschutz- und Sicherheits- anforderungen der o.g. Richtlinie, sofern die Anforderungen des Anhangs dieser EU- Baumusterprüfbescheinigung eingehalten sind.
Ausstellungsdatum:	16.10.2017
 Achim Janocha Zertifizierstelle der Fördertechnik	
	
TUV®	



# Type-Examination Tested Lift Systems with Components Available in the Market

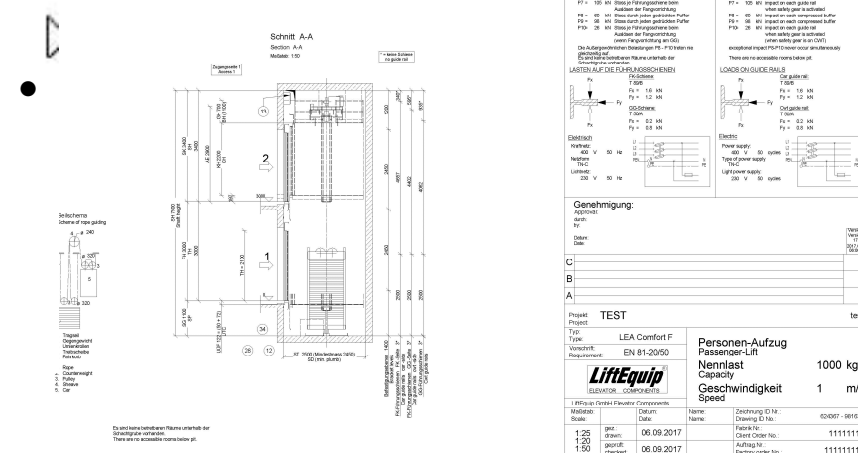
Solutions by LiftEquip

## Type Examination Certificate – LEA Comfort



Complete System delivered:

- Mechanical kit LEA Comfort
- Control system and control box Kollmorgen MPK411
- Operating and indicator elements
- External control panels
- Type Examination Certificate
- Documentation



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Volker Lenzner

More than you expect... **LiftEquip**  
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# Type-Examination Tested Lift Systems with Components Available in the Market

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## Type Testet Lift System – LEA Comfort (Testequipment)



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**Controller**  
Kollmorgen MPK411

**Inverters**  
MFC, MFR, CT, ZA oder Fuji



More than you expect.... **LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

## Assembly concept LEA Standard and LEA Comfort

The assembly concept is based on the requirements for safe installation and supported by suitable equipment and assembly tools

As far as technically possible, the work is carried out using the frameless assembly procedure, based on a certified solution.

Training occurs with the tools and lifting equipment in specially prepared assembly shafts

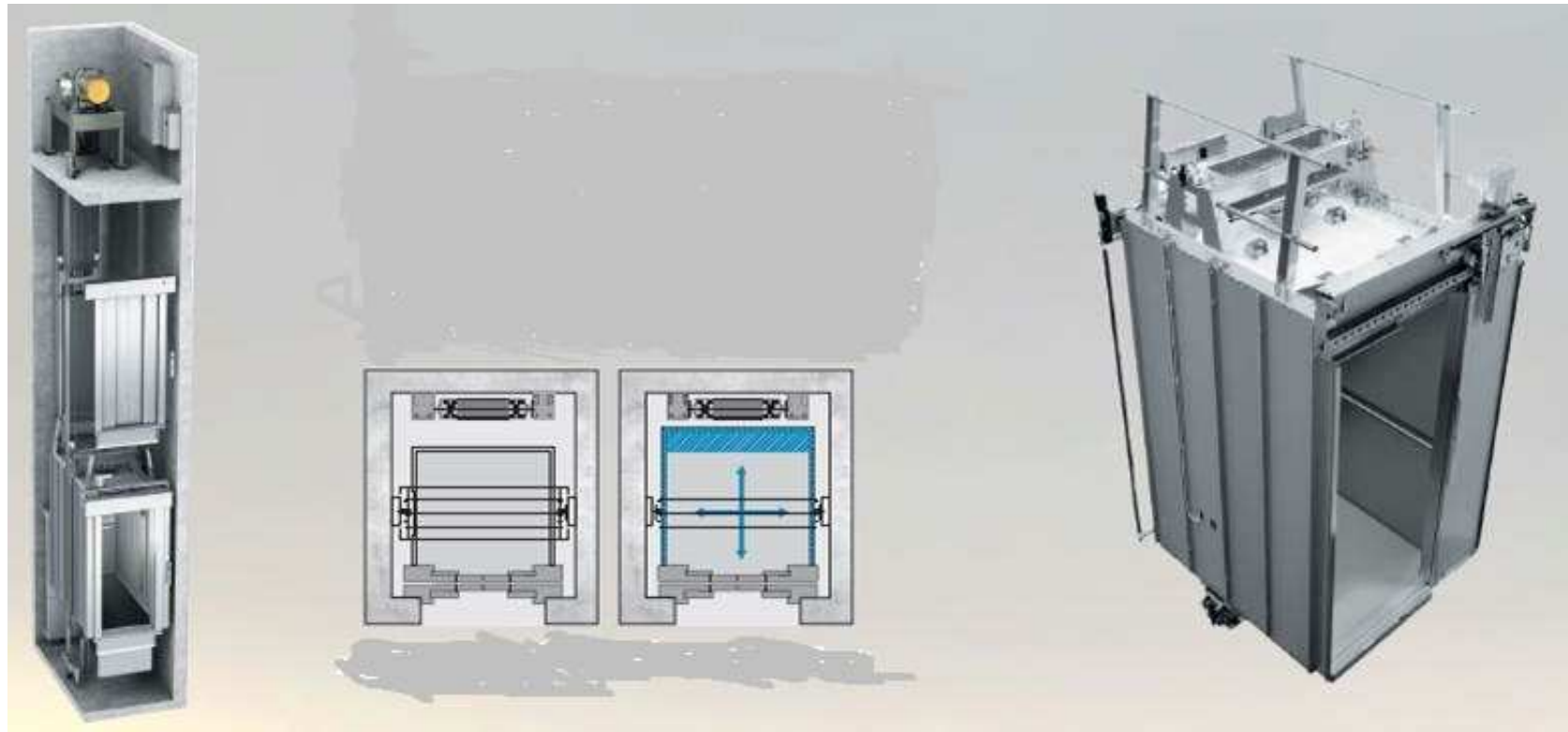




Solutions by LiftEquip

**Solution for Modernization**

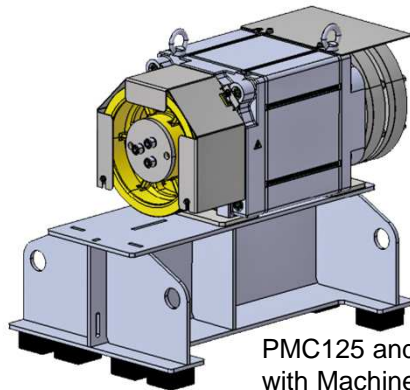
**LEMoS – Modernization solution with machine room**



# Type-Examination Tested Lift Systems with Components Available in the Market

Solutions by LiftEquip

## Drive Solution für Modernization



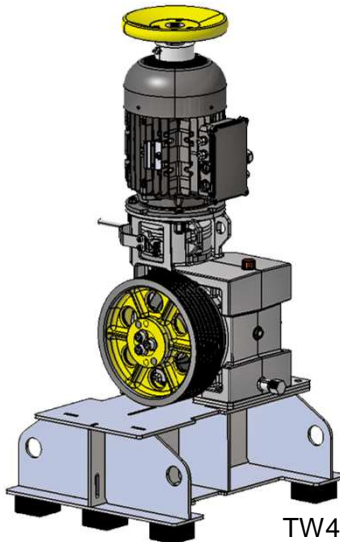
PMC125 and PMC145  
with Machine Frame



Machine Frame for  
PMC 125, PMC145, PMC170,  
FAD 210 M7L und DAF 270M/L



Flexible Machine Frame  
for PMC125 and PMC145



TW45C or TW63B  
with Machine Frame



Traction sheave in Shaft  
with DAF210



Flexible Frame  
for PMC145 with  
Plastic Coated Ropes

Solutions by LiftEquip

## Drum drives

### Area of use

- Small shaft dimensions and cramped space
- Max. shaft use through elimination of counterweight
- Modernisation of existing lifts, e.g. in stairwells
- Replacement of hydraulic lifts

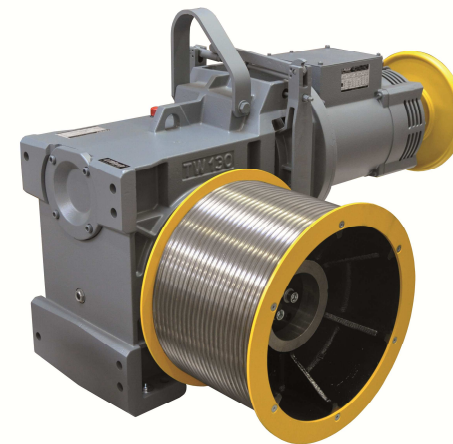
### Components

- Gear with drum instead of traction sheave
- Optionally with regenerative rectifier unit  
balance sheet

### EN 81-20 requirements

- $D/d > 40$  (drum / rope)
- Rope diameter  $D > 8$  mm
- Rope safety  $> 12$
- $v_n < 0.63$  m/s

**Joint solution by LiftEquip and Fuka (exhibits in Hall 7 Stand 7115)**



## Training courses in LE Centre at LiftEquip

### Complex solutions require training

To ensure cost-efficient and safe assembly, training and the right equipment and tools are needed

We offer courses on the following subjects in the LE-Centre training facility:

- product courses
- assembly courses for LEA systems
- course with the assembly tools for LEA systems
- inverter courses
- drive courses
- courses on the LEKalk 3.0 and Genesis configuration tools
- individual courses on customer request

# Type-Examination Tested Lift Systems with Components Available in the Market

Solutions byLiftEquip

## Tools and support

### Genesis – the online tool for LEA systems

- With Genesis, you configure the systems LEA Standard, LEA Comfort and LEA Comfort Plus
- You receive your offer online with lift drawing
- If you have any questions or need technical advice, we would be pleased to advise you and adjust the calculation to your requirements.
- The interfaces to third-party components are defined
- If you place an order, in addition to the lift drawing, we supply the documentation, calculations and assembly documents for the entire system or for the components ordered in the case of mechanical kits.
- Our technical support assists you in assembly and start-up

Use the tool, contact us, we will set up access to the tool and train you.

Summary

All parties involved have an obligation to adopt the same approach in the interests of our customers in the face of the comprehensive changes brought about by the new **Lift Directive 2014/33/EU**, the new requirements of **EN 81-20/-50** and at the national level by the **Operational Safety Ordinance**.

Get advice and comprehensive information to enable you to make the right decisions at the right time.

**LiftEquip would be pleased to assist you here:**

- **advice on technical questions**
- **preparation of technical solutions**
- **support in questions regarding regulatory standard requirements**
- **support on queries regarding the acceptance tests of the systems**
- **support during use of our components and systems, including spare parts service**

**LiftEquip is your expert partner for components, kits and complete systems as well as in after-sales service**



# Type-Examination Tested Lift Systems with Components Available in the Market

## Summary

### 35 Years LiftEquip Elevator Components

COMPONENTS  
Komponenten

MODERNISATION  
Modernisierung

NEW INSTALLATIONS  
Neuanlagen

HOME LIFTS  
Home Lifts

**LiftEquip®**  
ELEVATOR COMPONENTS



## Any Questions



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More than you expect.... **LiftEquip®**  
ELEVATOR COMPONENTS

Fazit

Visit us on the both interlift  
Hall 1 Stand 1110

**Volker Lenzner**

**Technical Director**

Tel. +49 7158 12 2967

Mail [volker.lenzner@liftequip.de](mailto:volker.lenzner@liftequip.de)

Bernhaeuser Straße 45

D-73765 Neuhausen auf den Fildern

mail: [kontakt@liftequip.de](mailto:kontakt@liftequip.de)

internet: [www.liftequip.de](http://www.liftequip.de)

## LEA® - Family

### Standard

#### At home in the standard range

The economical and space-efficient solution for medium travel heights in the standard range. Reduced safety spaces available.

Type: MRL      Rated Load: 450 – 1.000 kg  
Travel height: 40 m      Speed: 1.0 m/s

### Flexible

#### Variable and functional

Flexible dimensions for medium travel heights. Available with many equipment variants.

Type: MRL      Rated Load: 450 – 1.000 kg  
Travel height: 40 m      Speed: 1.0 m/s

### Comfort

#### The all-rounder

Superior technology for exacting requirements and more heavily frequented buildings.

Type: MRL      Rated Load: 450 – 4.000 kg  
Travel height: 100 m      Speed: up to 2.5 m/s

### Comfort Plus

#### A classic

Tried-and-tested elevator system with machine room and with geared or gearless drive.

Type: MR      Rated Load: 450 – 2.500 kg  
Travel height: 135 m      Speed: up to 2.5 m/s

### Cargo

#### Robust and reliable

Sturdy freight elevator with machine room and with geared or gearless drive.

Type: MR      Rated Load: from 1.800 kg  
Speed: up to 1.0 m/s

### Home

#### Personal and individual

The Gulliver and Orion home lift, in accordance with 2006/42/EC, up to 5 landings, over 70 platform variants and design options.

Travel height: 15 m      Speed: 0.15 m/s