**Oil hydraulic heavy goods lift for car-transportation**

**Type: CARRICO**

**Technical design after machine directive 2006/42/EC**

With the help of the Carrico planning guide, you can customize and fill in the cabin dimensions listed under point 1 "Technical Description". For the design of the Carrico, all the information you need is listed in the planning guide and explained in detail.

1. **Technical specifications**

Payload: max. 3.500 kg (max. 46 Passages)

Axel load: max. 2.100 kg, no forklifts allowed.

Lifting height: 3.500 m

Lifting speed: 0,15 m/s

Number of stops: 2

Entrances: 2

Arrange of entrance: Through car loading

Cabin width: 2.800 mm

Cabin depth: 5.800 mm

Cabin height: 2.100 mm

Clear door width: 2.500 mm

Cabin- & shaft doors: 6-part Meiller TTK / S telescopic sliding door, central opening

1. **Lift shaft**

On-site reinforced concrete shaft with built-in parts according to Lödige plant planning. Installation parts are provided by client. Internal insulation on site possible, if necessary, change the shaft dimensions.

Shaft pit\*: 850 mm (\*Reduction possible on request)

Clear shaft width: 3.600 mm

Clear shaft depth: 6.600 mm

Clear shaft head height\*: 2.850 mm (\*Reduction possible on request)

A reduction in dimensions can be selected under "additional options". To reduce the shaft pit or shaft head, a technical check on the part of the construction is always required.

1. **Power unit & supporting elements**

**Power unit**

Direct-acting ALGI hydraulic drive in a low-noise design with a flexibly suspended screw pump including pulsation damper and flanged oil motor. The control block ensures smooth, load-independent driving and exact stopping positions at every stop. The catch-up device automatically compensates the deflection when the load is picked up.

* Unit with pump-motor sub-oil unit, including oil filling
* Electronic control block with safety valve
* Soft start to limit the starting currents
* Pressure switch (overload, minimum pressure), hand pump, ball valve, manometer
* Pressure line between the hydraulics, including pipe rupture protection, distributor and connecting line to the unit

**Supporting elements**

Two direct precision hydraulic cylinders located on the side of the cabin. The car is raised and lowered directly with a 1: 1 ratio.

1. **Connection values & machine room**

**Connection values/drive sizes**

The connected load or drive size of the Carrico car lift can vary slightly depending on the lifting height. Based on the planning guide, a preselection can be made based on the amount of funding and the corresponding values can be found in the table. You are welcome to enter your preselection here.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lifting height | Lifting speed | Motor output | Nominal current | Rated fuse current |
| 3.500 mm | 0,15 m/s | 16 kW | 36 A | 50 A |

**Machine room/ Machine control cabinet**

The machine room is located directly next to the lifting shaft on the lowest level. The machine room corresponds to variant 1 of the planning guide with the following min. dimensions:

Area: Min. 2.000 mm x 2.000 mm

Height: Min. 2.100 mm

The optimal ambient temperature in the machine room and machine cabinet should be between  
+ 15 ° C and 30 ° C. In the elevator shaft, min. 5 ° C.

1. **Elevator doors**

Our elevator doors are from a well-known and high-quality German manufacturer and meet the fire protection requirements of EN 81-58. Our doors are therefore also suitable for installation in fire-resistant shafts in accordance with DIN 4102.

**Product:** Meiller TTK/S Telescopic sliding door

**Cabin doors**

Execution: 6-part, central-opening

Cabin door leaf: Zinc-Magnesium steel plate\*,\*\*

Occupancy/Color: without (Prefabricated paint on the side)

Door sill: Full aluminum (max. 10to)

Cabin door engine: Siemens AT 40 TM1-V

Door locking system: Yes

**Shaft doors**

Execution: 6-part, central-opening

Shaft door leaf: Zinc-Magnesium steel plate\*,\*\*

Shaft door frame: Zinc-Magnesium steel plate\*,\*\*

Occupancy/Color: without (Prefabricated paint on the side)

Door sill: Full aluminum (max. 10to)

Door apron: 300 mm, galvanized

Door opening on site: according to EN 81-58 circulation max. 60 mm for the clear door opening, circumferential gap on site close after installation

Fire protection: with fire protection according to EN81-58 E120

Other: reinforced continuous threshold angle, primed.

\*) Sheet steel with hot dip coating made of zinc-magnesium as corrosion protection. We recommend an additional coating. Surface is well suited for subsequent painting.

\*\* ) Editing traces may be visible. When painting, a pretreatment must be carried out with a primer! Primed lamellas can show signs of wear, galvanized lamellas can also have streaks or white zinc spots. If you are looking for high-quality optics, a top coat is recommended.

**Door monitoring**

* Light grids between the shaft and the cabin door
* Closing force limitation via the door drive
* Radar motion detector (IP54) for vestibule monitoring, 1x per shaft access. Arrangement above the shaft doors on the masonry (surface).

1. **Cabin**

Platform: Torsion-rigid steel construction, primed in RAL 7032, without vibration insulation

Cabin floor:  The cabin floor consists of aluminum extruded profiles with a cross-sectional profiled surface. These are inserted into the platform frame and screwed together.

Cabin walls\*: Lamellae construction made of 1.5 mm sheet steel, sendzimir galvanized.

Indents: Lamellae construction made of 1.5 mm sheet steel, sendzimir galvanized.

Deflector strips: Single row of hardwood, 100 x 20 mm, distance bottom edge of cabin floor: 250 mm

Cabin lighting: Square energy-saving LED panels embedded in the cabin ceiling, light color is 840 - neutral white - color temperature 4000 K, power 18 W, 1200 lm

Ventilation: About punches in the side wall slats

Cabin ceiling\*: Slat construction made of sheet steel, sendzimir galvanized, not accessible

Entrance: 6 part central-opening telescopic sliding doors with zinc-magnesium melt immerse coating for optimum corrosion protection. On request, variants with lacquered steel sheet or stainless steel are possible. Fire protection according to EN 81-58-E 120. Monitoring of the entrances with light grid type LT40, according to EN 81-20.

Cabin tableau: Basically, two cabin tables are installed in the Carrico® car elevator. The cabin tables are made of stainless steel and integrated into the side walls of the cabin. Due to the diagonal arrangement, a convenient operation from the car is always possible. Furthermore, a 7" TFT display, the position display, door-on button, emergency call buttons, floor buttons and a key switch [housemaster control] are installed as standard.

Positioning system: The positioning displays are integrated in our cabin tables by default. If one of the two direction arrows of the positioning indicator is lit, the vehicle must be moved in the direction indicated. When the correct position is reached, the direction arrow goes off and the "STOP" font box lights up. Now the doors close automatically, and the elevator goes to the respective stop selected by the operator. The position of the vehicle in the elevator cabin is recorded by several light barriers in the cabin side walls.

Cabin frame: in torsion-stifold steel construction, primed in RAL 7032

**\*** Slats can have processing traces, galvanized slats additionally streaks or white zinc stains. If you are entitled to high-quality optics, a finished coating may be recommended.

1. **Electrical equipment**

**Control system**

Our elevator control is designed as a push-button control as standard. Thus, we only store and processed one command or call at a time. The cabin command o'taries over the outside calls. After entering the command or call, it is saved and processed, all further calls are blocked until the end of the journey.

This is advantageous in a car elevator, as it avoids unnecessary stops and call processing with occupied cabin, where it is not possible to drive in with another car. This greatly increases the comfort of use.

* Control positioning system
* Control part with error memory
* Soft start-up device / current limiter for hydraulic drive
* Safety function against unintentional movement of the car in the stops
* Evacuation control with existing mains voltage, cabin automatically goes to the lowest stop with potential-free notification and parks with open door
* Digital shaft copying according to SIL3
* Evaluation of digital shaft copying
* Power saving mode - Time adjustable, by command the elevator is activated again.
* Emergency call system
* Intercom - engine room, pit, cabin and cabin roof
* Emergency power supply for cabin light, intercom and emergency call system
* 2 potential-free contacts
* Suspension cables, all other electrical cables, control panels, fastening material
* Hand lamp, manhole lighting as LED - light strip
* Emergency horn, cable hand lamp, shaft lighting
* Main switch in the control cabinet (> 63 A with separate housing)

**Fully automatic ride**

For systems with only two stops, the fully automatic journey is standard. This means that the driver does not have to dial the stop, but the desired stop is automatically approached after the doors have been closed.

**Automatic ride**

For systems with more than two stops, automatic travel is standard. This means that the driver must dial the stop after entering the lift cabin. The desired stop is then automatically approached after the doors have been closed.

**Cabin tableau**

In the cabin, a cabin tableau is integrated on each side wall.

**Level tableau**

In the CARRICO® car lift, the floor tables are made of stainless steel and always to the left of the door. For use in external access, the function of the pick-up button is replaced by a key button. The elevator can also be picked up/called with hand-held transmitters as a radio remote control, ceiling pull switches or control columns in the respective parking floors. Outside, the tableaus are spray-proof.

**Emergency call incl. GSM**

Intercom in the car via mobile phone - receiving module incl. antenna. Storage of up to 4 phone numbers possible. The device corresponds to the EN 81-28.

The following building requirements are required:

* Existing mobile network
* Provision of the corresponding SIM Card (no prepaid)
* Assumption of the monthly costs for the required SIM Card

**Traffic lights**

The availability of the elevator is visually simplified by LED traffic lights and avoids unnecessary maneuvering and traffic disturbances. The traffic light is installed in a clearly visible position in the respective stop in front of the shaft gates. Meaning of the different traffic light signals:

All signals are out — lift is “ready"

Lift is stationary at parking level.

The lift can be called at any time.

Signal light flashes red – lift “occupied”

Clear the entrance area/cabin occupied.

Signal light illuminates red – lift “coming”

Cabin is empty, call is being processed.

Signal light illuminates green – “Enter”

Door fully open, vehicle may enter.

1. **Technical documentation**

Upon delivery of the lift, you will receive a complete documentation of the system in the form of a test book. The documentation is created by our company's internal solution format. No customer-side equipment regulations are taken into account unless explicitly agreed otherwise.

This test book contains the following documents:

* Technical documentation
  + Description of the lift system
  + Electrical schematic
  + Hydraulic schematic
  + Operating and maintenance instructions (1-fold in English)
  + Descriptions of the lifting components
* CE – Declaration
* Signs
* Acceptance certificate / acceptance protocol
* Health and Safety test report

1. **Additional options (please mark with a cross)**

**( ) Hand remote control system**

The control system of the Carrico is additionally equipped with a radio remote control. The radio remote control can be carried directly in the car. Without leaving the car unnecessarily, the user can request the elevator.

**( ) Assembly equipment**

Assembly equipment with set-up shoes for dowels for one set-up level in each including delivery and assembly, dismantling and removal.

**( ) Oil cooler**

If higher rated speeds as well as a high number of journeys are required (e.g. from 30 trips per hour) an oil cooler may be required.

* possible heat dissipation from the unit max. 8.5 kW\* (alternatively 13 kW)
* necessary cooling capacity approx. 1.2 kW at 30 trips/h
* maximum cable length 2 m to the unit - height max. 800mm above oil level in the unit
* Room temperature maximum 30° C

\*) Sufficient cross ventilation of the machine room must be ensured on the construction side.

**( ) Tank heater**

If the specified ambient temperature in the engine room cannot be met for any reason, we recommend the use of a tank heater.

* Oil heating, incl. thermostat (700 W / 230 V) in hydraulic unit

**( ) Pull switch**

* Pull switch with console for ceiling fastening
* Switch with pull rope 2m long
* Plastic pipe, electrical connection line\* 10m of terminal socket in the shaft

\*) max. cable length 10 m, pitch: 2m. If special fortifications are required due to the construction situation, these must be provided on the construction side.

**( ) Preparation of plant planning**

At the customer's request, a plant planning can be created before the main order is ordered. This includes all relevant information for the implementation of the project or the transfer of the plant. You will receive the costs of plant planning when ordering the main order, fully credited.

The following points are taken into account/presented in the standard plant planning:

* Plant planning is created in Lödige format
* Schematic representation of the elevator shaft
* All elevator components in the shaft
* Raw construction relevant details and interfaces to other trades are presented schematically
* Consideration of thermal insulation in the shaft if necessary
* Load hook
* Door openings and doors
* Verbal reference to smoke-insifiersystems
* Acting Forces
* Engine room according to planning guide variant 1 to 5

A change/adjustment of the plant planning is incl. All further changes as well as the presentation of a higher level of detail are subject to a surcharge.

**( ) Reduced pit**

On customer request, the depth of the shaft pit can be reduced from 850 mm or 1,250 mm to 350 mm or 950 mm by means of defined and type-tested measures/components.

The reduction of the pit depth depends on the head. A reduction to a minimum of 350 mm is possible up to a head of 9 m. From a head of 9 to 25 m, the pit can be reduced to at a time of 950 mm.

A reduction of the shaft pit may result in changes to the other shaft dimensions, especially the shaft head dimensions. Therefore, this option always requires an internal technical check to detect the impact on the shaft head.

**Cabin floor**

Optionally, further versions of the cabin floor are possible.

( ) Smooth sheet primed RAL 7032

( ) Tear plate aluminum

( ) 2K-Anti slip coating\*

\* Epoxy resin-based, solvent-free and non-slip coating is sprinkled with quartz sand of grit 0.3-0.8 mm.

**( ) Door sill heating**

Self-limiting heating tape for outdoor manhole door threshold\* for safe operation of the lift system during the frost period.

**( ) Key tresor**

Complete. With 3 keys, fuse card: series 600 834 EFEFBF, with wall anchor

Dimensions: 145 x 46 mm

Internal dimensions: 78 x 36 mm

Construction services:

* Core hole bore for key vault
* Installation of the key vault

**( ) Standard maintenance lift system**

Maintenance cycle: 4x per year

According to DIN13015. Testing of safety functions and system functions, adjustment work, lubrication and cleaning of operational impurities.

Warranty: 2 years

**( ) Full maintenance lift system**

Maintenance cycle: 4x per year

According to DIN13015. Testing of safety and plant functions, adjustment work, lubrication maintenance and cleaning of operational impurities.

Spare parts and repair service (reasons for responsible only by Lödige)

Warranty extension: 5 years