

Urban elevator

Study, Modernization, Maintenance and Repair

DESCRIPTION

- The URBAN ELEVATOR system makes it possible to carry out the principal modernization and maintenance actions of the elevator operating systems to winch
- The System is delivered complete, with teaching handbook and technical file
- Material resulting from urban elevators (except cabin)
- Teaching concerned: Maintenance and ascensorists formations

UTILITIES

- Electricity: 400 VAC tri – 50/60Hz
- Volume of the installation
L X L X H = 2500 X 2500 X 3500 mm
(useful volume for exploitation = 3500x3500x3500)
- Weight: 800kg approximately



TEACHING APPLICATIONS

- Study of the operation of an elevator
- Maintenance of installation of elevator
- Identification of the origin of electric breakdowns
- Diagnosis and replacement of defective elements
- Modernization of the control device
- Modernization of the safety device

Presentation of the system:

The module of elevator ASC 510 is a complete unit making it possible to reproduce the operation of a real elevator. It consists of elements coming from the world of the elevator. Only the cabin and the sheath are on scale reduced for reasons of obstruction. All the sensors present in a sheath and on the cabin of an elevator are envisaged in this equipment of study and diagnosis. This equipment gathers the whole of the teaching approaches available on the ASC 210, 310, and 410

- **Operative Part:**

- **sheath** made up of a metal structure of section 1080 mm x 930 mm x 3500 mm/**3 levels**
- **cabin** of dimension 500 mm x 750 mm x 700 mm and **counterweight** out of sheath of 80kg approximately
- variable load cabin (cast iron weight) of 50kg with 100kg (for study of precision of the stops)
- the **rate of travel** is of approximately 0.5 m/s
- **winch** of asynchronous motor elevator (4 CV minis.) 2 speeds and brake
- **limps of revision** (or inspection cabin) and **limps of recall**
- **landing button manufacture** and **button manufacture cabin**
- **characterisation** supplements out of **anodic aluminum** and transparent **polycarbonate**
- access to the sheath by **3 large doors** (H * l=3000 * 1000) made safe by contacts of safety allowing an easy adjustment of the various components integrated into the sheath or on the cabin
- deceleration, furthest positions and positions in revision defined by 5 roller sensors + cam positioned out of sheath
- panel equipped with the various **connectors harting type** for connection on the operative part of the various sensors, electrical equipment boxes, doors...)
- **3 types of selectors out of sheath**
 - o **+ optical sensor flag** compatible with cupboards 2 speeds and cupboard with variator
 - o **incremental coder + case of counting** compatible with two-speed cupboards and cupboard with variator
 - o **sensor magnetic+ bar magnets** compatible with all the cupboards

→ → **activities of maintenance associated with the operative part**

- adjustment of the races of deceleration
- adjustment of the positions of revision
- adjustment of the race ends
- adjustment of the brake of the winch in drive of real load
- stop and radial force cabin for taking into account in the adjustments of the decelerations

- **limitings device and parachutes:**

Assembled limitings device partly higher of sheath/parachutes suspended under cabin by 4 fastening screws

available in 2 versions

- o **parachute simple feel** catch with inertial **limiting device** and **cable**/sensors of safety limiting device, rupture of cable and taken parachute
- o **parachute double feel** catch with inertial **limiting device** 2 directions of catch and **cable**/sensors of safety limiting device, rupture of cable and taken parachute

all compatible with the ASC 510. Their connection on the operative part is carried out by connectors harting type.

→ → **activities associated the limitings device/parachutes**

- **maintenance:** checking of the release of the limiting device
- **repair:** replacement of a degraded cable
- **modernization:** physical replacement of parachute 1 feel by a parachute with 2 directions of catch/installation of cable associated and test

- cabins doors + landing doors

on mobile structure of the type of that described on card ASC 310
available in 3 versions

- central opening
- side opening
- carries beating

all compatible with the ASC 510. Their connection on the operative part is carried out by connectors harting type

→ teaching activities associated (according to versions of doors) with the doors

- **study**: Analyze of the subsystem
- **maintenance**: Adjustment of the functional elements (sabers, races...)
- **maintenance**: To carry out planned operations of a maintenance manual
- **repair**: Replacement of defective rollers
- **repair**: Diagnosis and replacement of a shunt of defective door

In option: piloting cabin carries + carries landing by autonomous system to allow a use either as an independent working station or connected to the operative part controlled by the electrical power box.

- electrical power boxes:

on mobile structure with swivelling wheels braked. Available in 3 versions:

- orders from relay
- orders 2 speed with microprocessor with pocket of parameter setting
- orders from variator of frequency with paving stone of parameter setting integrated on variator

all these cupboards are compatible with the ASC 510. Their connection on the operative part is carried out by connectors harting type.

→ → activities associated to the electrical power boxes:

- **maintenance/modernization**: parameter setting of different type of cupboard (temporization, speeds, operating modes, type of winch...)
- **modernization**: replacement of a cupboard with relay by two-speed cupboard or cupboard with variator
- **repair**: diagnosis and replacement of element of defective order (chart or contactor according to versions)
- **study**: influence type of order (standard of cupboard) on the dynamic behaviour of the machine

- kits construction (in option):

- **operator of door** ref. ASC central 030 opening on frame support + **files solidworks**
- **operator of door** ref. ASC 031 opening side mechanized on frame support + **files solidworks**
- **electromagnetic lock** ref. ASC 032 on frame with modelled beating door + **file solidworks**
- **limiting device speed** ref. ASC 040+ **file solidworks**

- zone of machinery containment (in option)

Allows to reproduce on the machine the real conditions of interventions of the technicians in engine room. At the time of the intervention on the cupboards, the technician does not have any visual access to the sheath and the cabin. The diagnoses are thus not skewed by a direct observation of the behaviour of the elevator at the time of an intervention in machinery.