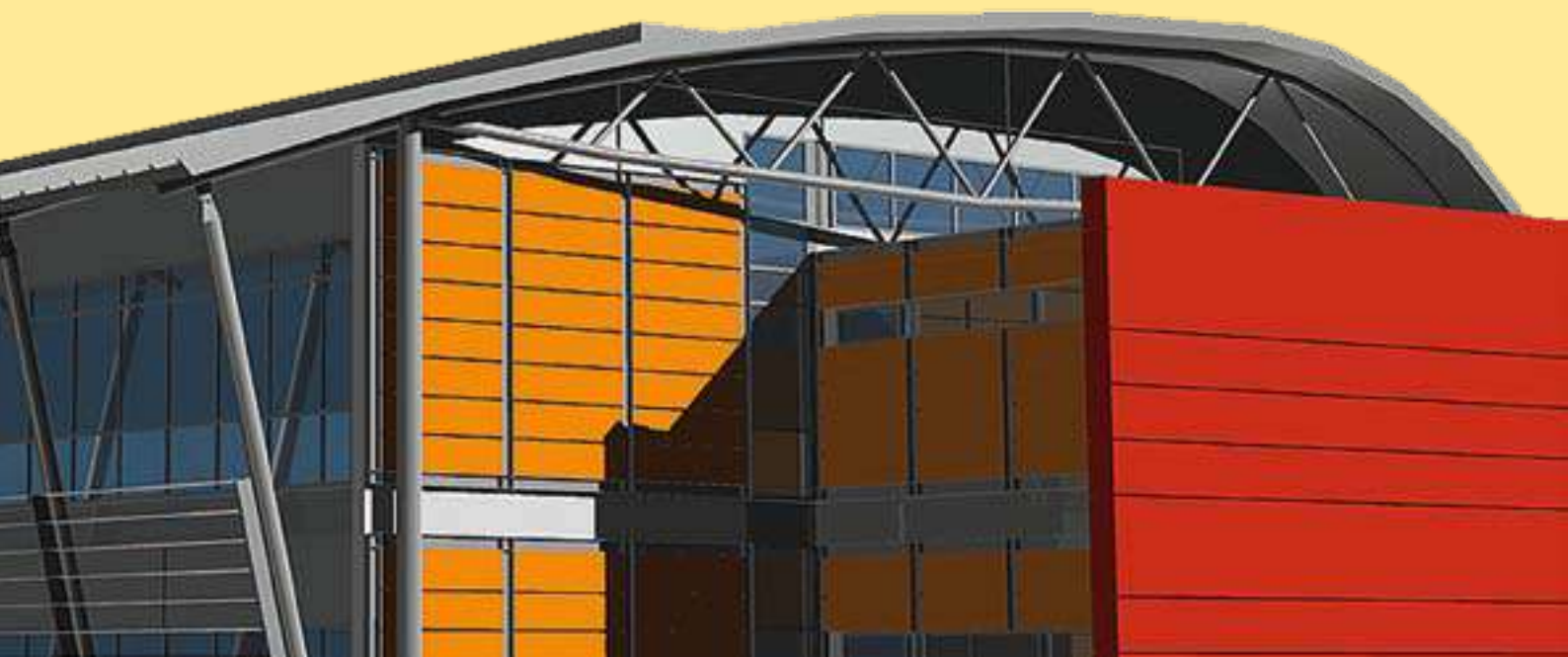
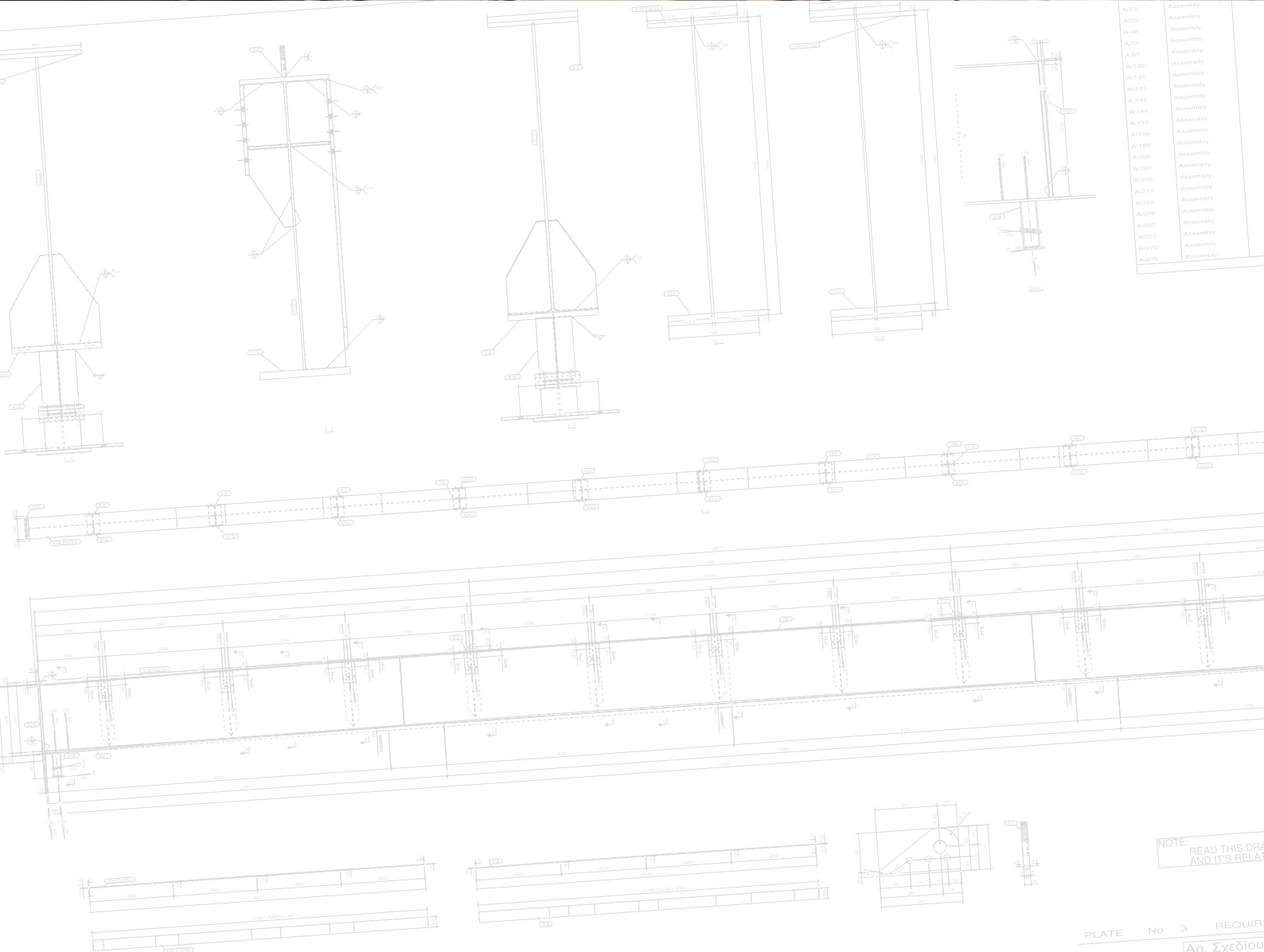




STEEL BUILDINGS
CRANES
SPECIALIZED STEEL CONSTRUCTIONS





A/03	Assembly
A/05	Assembly
A/08	Assembly
A/51	Assembly
A/67	Assembly
A/129	Assembly
A/131	Assembly
A/141	Assembly
A/142	Assembly
A/144	Assembly
A/175	Assembly
A/186	Assembly
A/188	Assembly
A/205	Assembly
A/207	Assembly
A/208	Assembly
A/210	Assembly
A/266	Assembly
A/268	Assembly
A/271	Assembly
A/272	Assembly
A/276	Assembly

NOTE: READ THIS DRAWING AND ITS RELATIONS

PLATE No 3 REQUIREMENTS

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Αρ. Σχεδίου
 Πίνακας
 Στοιχείων
 Εργασίας
 Ονομα
 Διεύθυνση



External View of Facilities

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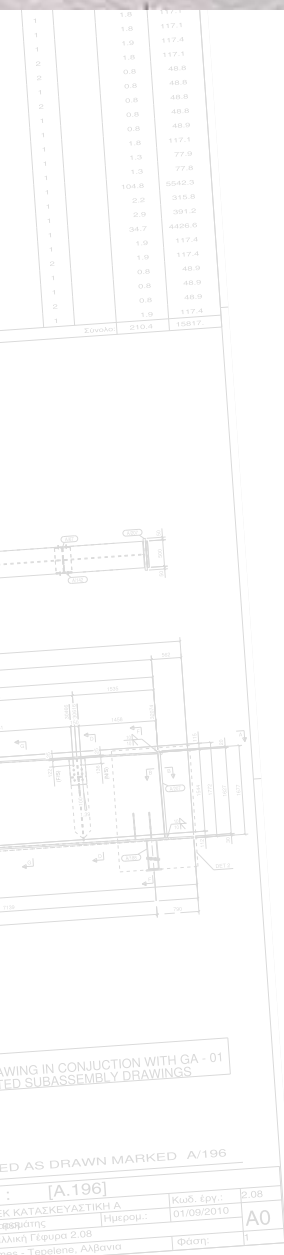
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INTRODUCTION

The K. Liaromatis S.A. company holds a strong place in its field and is well known for its reliability and flexibility in designing and manufacturing steel buildings, E.O.T. cranes and specialized steel constructions.

The K. Liaromatis S.A. policy and goals are based on customer demands. The company manufactures the highest quality products by integrating advanced designs, latest manufacturing technologies and years of experience into a seamless production process.

The K. Liaromatis S.A. is capable of handling any significant steel construction in its premises quite easily. The constructions and the premises are ruled by very strict health and safety regulations. The company applies ISO 9001:2008 techniques to minimize the impact on the environment.

BACKGROUND

1974 ESTABLISHMENT OF THE COMPANY

Establishment of Konstantinos Liaromatis company located at Lappa Achaia.

1995 CHANGE OF LEGAL FORM

The Constantine Liaromatis changing its legal form and converted to S.A Company with the discreet title Industrial Steel Constructions – K.Liaromatis S.A.

1999 NEW PREMISES

The company moved to modern-owned facilities in the industrial area of Patras.

2001 EXPANSION OF ACTIVITIES IN ATHENS

The company expands its activities in Athens by identifying and recruiting branch.

2002 - Today EXPANSION OF FACILITIES AND UPGRADING OF MECHANICAL EQUIPMENT

The company is constantly expanding with new installations and upgrades in equipment to meet the growing requirements in Greece and abroad.



Production View

VISION

We have gained our customers trust and confidence by meeting or exceeding their demands and by understanding their needs as well as responding to their expectations.

Our vision is the constant development and improvement of our dynamic and financially stable place in the market, by investing in human resources, in equipment as well as in research and development.

MISSION

We have a significant manufacturing know-how and experience, we provide an excellent quality-price relation, service, reliability and transparency in our relations. Our aim is therefore the total satisfaction of our customers and of our employees.

Our mission as well as our constant commitment is the continuous effort for improving the quality of our constructions and of our services in all levels. We justify therefore Enterprises and Organisations that have chosen us.

VALUES

- **Satisfaction:** The most important value of our company is the satisfaction of our customers and we are always eager to understand their requirements and to act proactively.
- **Commitment:** We set objectives and commit ourselves in achieving them.
- **Cooperation:** We have a team spirit in all levels and we take advantage of any information or idea.
- **Transparency:** We foster an ethically correct environment and we manage internal and external relations in a way that allows maximum transparency.
- **Innovation:** We develop innovative solutions and sponsor improvements in existing systems and processes.
- **Proactivity:** We think forward and influence events by being aware of opportunities leading to formulation of proposals that may assist to achieve our objectives.



FACILITIES

In our modern facilities we are able to manufacture high-volume of steel structures. With continuous expansion of our facilities and upgrading of machinery, the company covers any requirement.

The company has engineering and design departments offering the best solutions. The production of metal components is driven by sophisticated design software systems that allow three-dimensional modeling, ensuring the seamless flow of information during the construction and erection.

The production equipment consists of modern machinery for cutting, drilling, welding, molding and painting of metal

components characterizing separately for ease of transport, delivery and erection with significant benefits in cost, speed and quality. Qualitative superiority is the fact that parts of the construction follows shotblasting to ensure a net free area before finishing and coats. For the painting of metal products there is a specific provision in an enclosed controlled environment using the most advanced techniques covering the most stringent specifications. Where necessary apply project management plan and the construction phases are organized and monitored continuously by an engineer. The elite teams and construction meet the latest requirements and implement security systems design.

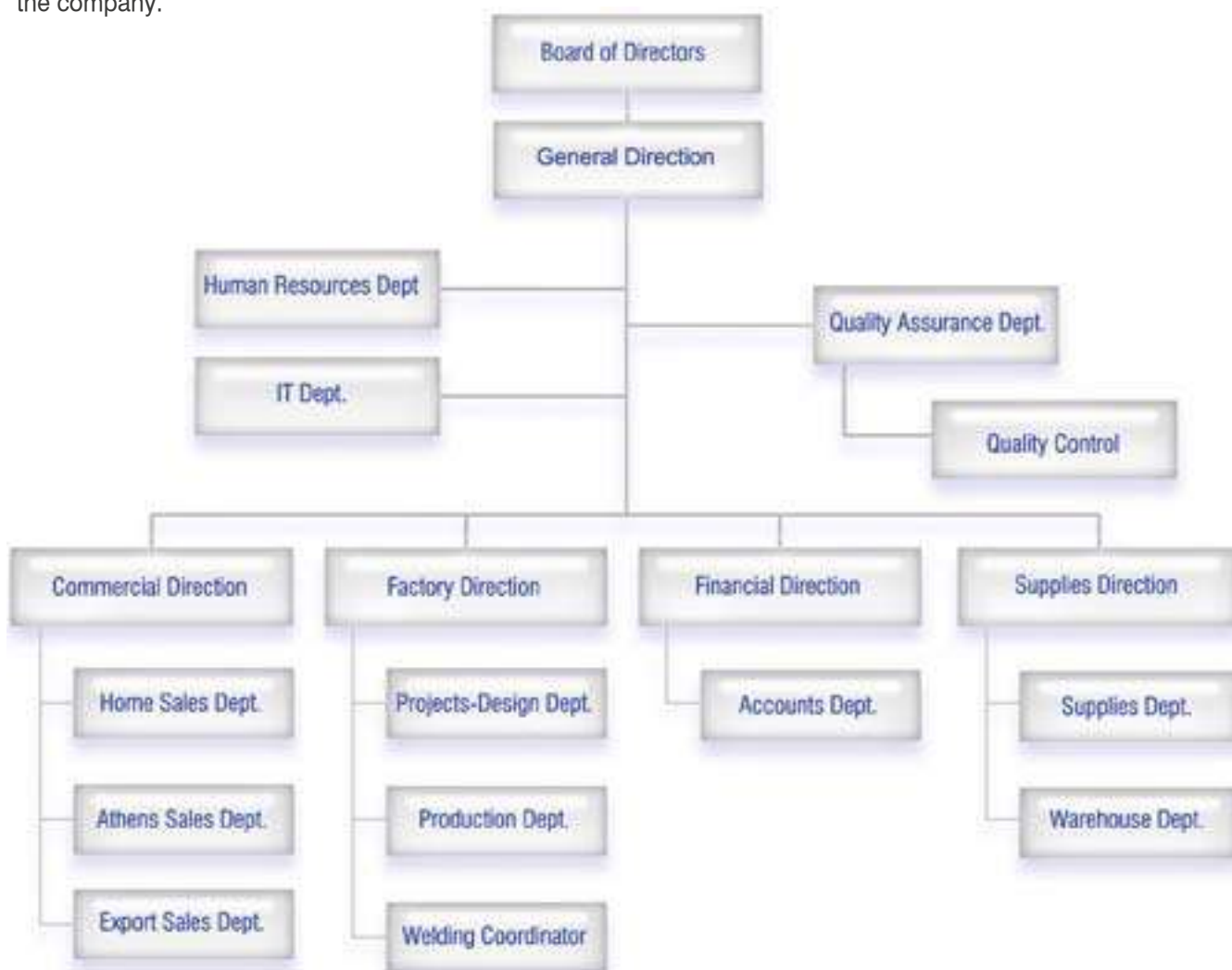


HUMAN RESOURCES

We have a significant place in the Greek market and we provide complete high quality solutions. The company thus recognizes the contribution of its human resources and their value to the achievement of its strategic objectives.

We recognize that the human resource is the most important factor for strengthening and developing our company. This is why we cooperate with the most capable executives with whom we share our vision of the company.

The employees of our company are dynamic, dedicated to our objectives and passionate for their work. We have great confidence in their excellent training and years of experience. All of our mechanics, engineers, technicians, economists and top executives put forward their best efforts to make this the top company in the Greek market.



QUALITY

The main feature is the company's commitment to quality. Applicable quality management system for the design, manufacture and installation of industrial steel structures, industrial buildings and cranes in accordance with EN ISO 9001:2008, and also is certified to carry out weldings in accordance with the requirements of standard ISO 3834-2 certified by TUV NORD.

The company has own certified personnel to perform Non Destructive Tests (NDT), also participate as elected member in bodies of AISC, SCI and AWS to provide expertise in areas relevant to its activities.

K.Liarmatis S.A company included among the leading fabricators having contract agreements with international award companies, contributing in the growth of local society and the international promotion of Greek business. Drawing with accent in high quality standards and safety our constructions enjoy high reliability and long lasting, covering with the most completed way the constructional needs in all sectors through various applications.





EQUIPMENT

Our production infrastructure is one of the most modern in the particular industrial sector and we continuously upgrade it through our policy of new investments. Using equipment with exceptionally technical characteristics allocating specialised softwares in the analysis and designing, we program various phases of treatment via

CNC machines, constantly controlling the factors of time & cost for projects. For the transportation, installation and erection of our produced products we use high technology equipment of handling, ensuring the delivery in the desirable specifications.

DESIGN – SUPPORT SOFTWARE

Company has the appropriate know-how, experience and equipment to handle any project with high speed and reliability, using specialized software for analyzing and designing steel and composite constructions.

Our department reliability for designing and researching in high added value constructions operating closely with Factory's Direction. Also collaborated with production section in studying, designing and developing new systems as well to provide applicable drawings.

This section is characterized by specific procedures such as:

- Receiving and collective the information in accordance with the project demands, which are analyzed using software adaptable to the valid regulations.

- We accurately administer our projects through three dimensional modelling design, where we compare reality with the modelling design to raise our productivity and eliminate mistakes.

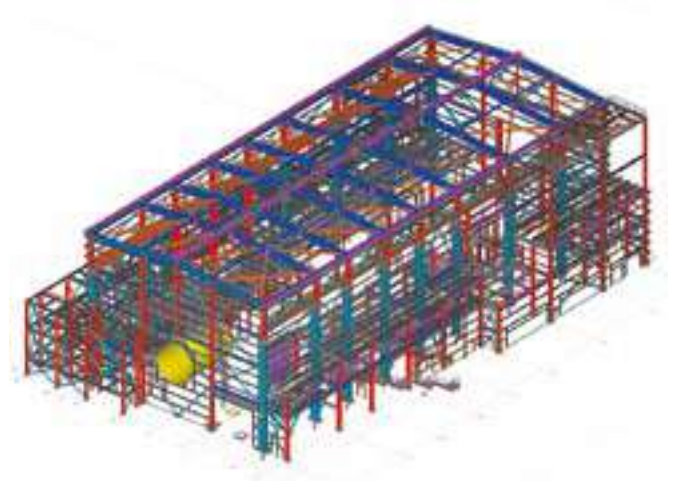
- Use the most modern procedures of project supervision and production reporting to strictly schedule for cost estimating, bids and budgets.

- Our software is continually being upgraded to allow us to improve the crucial points of linking design with the materials supply section that allows us to reduce material waste and improve material procurement.

Designing programs and our supply section are connected directly with our CNC machines and production floor. This allows us to go from design to manufacture in a seamless fashion.

The most important characteristics of our designing programmes are:

- Designing speed in three dimensions.
- Easy modifications.
- Automatic production of designs.
- Automatic connections.
- Material catalogues.
- Plate nesting & CNC.



We consider Research & Development as the principal ingredient for our future growth. Our company is actively participating in internationally recognized programs.

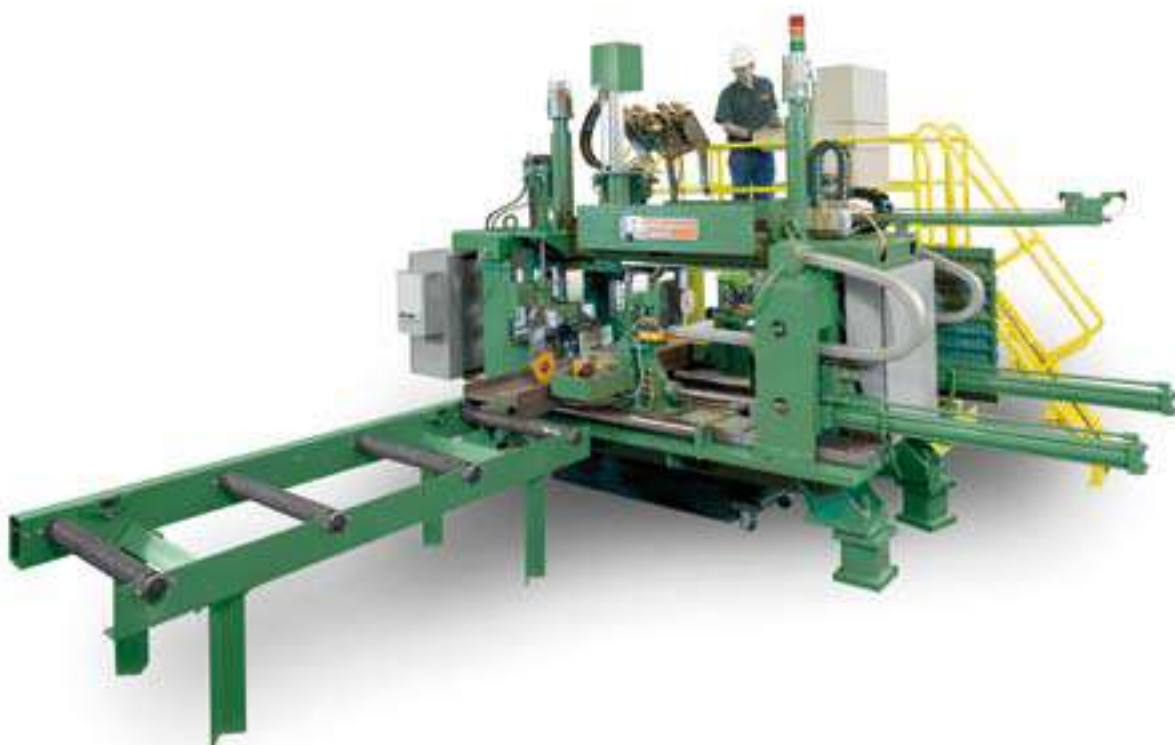
PRODUCTION EQUIPMENT

- CNC double miter bandsaw, equipped with marking system. Max. Beam Width 1.250 mm The machine is equipped with all the necessary material handling equipment in the infeed and the outfeed. It is connected with rollers and cross transfers with the beam drilling line, the structural burning machine, the sandblasting machine and the storage.
- High Speed, Carbide beam drilling line equipped with nine (9) spindles and marking unit. The machine can process beams up to 1.250 mm web height. The machine is connected with material handling equipment with the other machines for fast and efficient flow.
- CNC structural burning line, for maximum width beam of 1.250mm, suitable for burning various types of cuts, via Oxygen such as cut off, weld prep, coping, haunches, beam splitting, compound miters, castellation, miter cut etc.
- CNC plate processing center for plates with max. width 2.500mm, thickness 80mm and unlimited length. The machine is equipped with multi – spindle, high speed drilling carbide head, multi punching triple head. Cutting is made via Oxyfuel or plasma and part marking is made via carbide scribe.
- CNC pipe cutting machine with 5-Axis. Maximum diameter of pipe is 815mm and length 12.000mm. The cut is made by Oxyfuel or Plasma process
- Blasting machine, suitable for plates, beams and assembled structures. The machine is equipped with ten (10) high efficient and adjustable turbines for perfect blasting. Maximum tunnel dimensions 3.100 x 1.700mm. The machine is equipped with infeed and outfeed rollers and cross transfers for efficient material handling
- CNC triple punching, marking and double shear cutting line for processing, flat, angle as well as channel up to 305 mm wide. The machine is equipped with infeed and outfeed rollers for efficient handling of parts
- CNC high speed – carbide drilling, punching machine for pre-cut plates. Max. Plate thickness 60 mm, width 1.000 mm and unlimited length. The machine is equipped also with marking and debburing unit. The integrated tool changer ensures more effective drilling of holes with different diameters.
- CNC flame and plasma cutting machine equipped with four oxyfuel torches, one plasma torch and one marking head, for plates with max length 15.000mm, width 6.200mm and thickness 200mm..
- Automatic Submerged Arc Welding machine suitable for beam and box sections with max. Dimensions 2.500 x 3.500mm and maximum length 35.000mm, equipped with two Submerged arc welding heads current 1.250A each.





- CNC plate bending machine for sheets with maximum length 10.000mm, width 1.500mm and thickness 3,0mm.
- Cut to length and slitting unit for steel coils with max. width of coil 1.500mm and thickness 3,0mm. The line is composed from Uncoiler, insertion table, cut to length and slitting unit.
- CNC beam saw cutting line. The line consists of a mitre bandsaw and infeed – outfeed system completely automated controlled from the modern software of the machine.
- Hydraulic press brake, maximum capacity 250t, with table dimensions 1.200 x 1.000mm.
- CNC Hydraulic press brake capacity 200 t and maximum working length 4.000mm
- Hydraulic guillotine maximum width of plate 3050mm and maximum material thickness 19mm.
- Hydraulic multistation steelworker (2 pcs) for flat and angle shearing, bending and notching.
- CNC horizontal bending, straightening and cambering machine, maximum capacity 300t.
- CNC horizontal bending and straightening machine, maximum capacity 75tn.
- Hydraulic, variable angle notcher including punching capacity 20t.
- Forty (40) welding machines MIG-MAG, welding current max 500 Amos.
- Two (2) welding machine TIG.
- Two (2) Drawn arc stud welding machine for max. shear connector diameter 25mm.
- Radial with max. drilling capacity 50mm.







HANDLING EQUIPMENT

- Eighteen (18) Electrical overhead travelling (EOT) cranes with the following capacity:
 - ▶ 2 x 20 / 5t (2 pcs)
 - ▶ 20t / 5t - (1 pc)
 - ▶ 25 / 5t - (2 pcs)
 - ▶ 2 x 12 / 3,2 tn - (2 pcs)
 - ▶ 16t / 5t - (6 pcs)
 - ▶ 2 x 6,3t - (2 pcs)
 - ▶ 10t - (1 pc)
 - ▶ 5t - (2 pcs)
- Fourteen (14) wall mounted jib cranes, capacity 1,6 tn, span 12 m.
- Forklift of 4 ways drive direction with lifting capacity of 5t.
- 3 Axis trucks equipped with loader crane.
- 4 Axis truck equipped with loader crane.



- Telehandler with lifting capacity 3,2t and max. working level of 12m.
- Four 4WD hydraulics motor-driven personnel operation platforms with lifting capacity up to 500Kg & max. working level of 12,5m.
- Two (2) hydraulics motor-driven personnel operation platforms with lifting capacity up to 500Kg & max. working level of 12m.
- Forklift of 4 ways drive direction with lifting capacity of 12t.
- Forklift trucks with lifting capacity 7,5 tn.
- Two (2) Forklift trucks with lifting capacity 5 tn.
- Weigh-Bridge with weight capacity of 80t.
- Conventional product handling and production support machines.





Logistics Center, 35.000m²,
Aldi, (Alpine Bau GmbH)



Complex of Offices
(NotosCom)



Industrial Warehouse
of Paints Vivechrom
(Aktor S.A.)

STEEL BUILDINGS



Turbine Building,
Corinth Power
(ELEMKA S.A.)

Compared to other material and methods choosing to construct buildings out of steel is faster and cheaper. Their advantages are high quality and aesthetic reasons, durability and stability, lower maintenance costs, identity, environmental friendly etc.

The possibility of present or future uses of the building is significant. The size of the building, the height, the openings, the internal decoration, the lofts, the external roofs, the insulation demands and the colour combinations are also very important evaluations.

All buildings are constructed according to Greek Regulations, Eurocodes 3 & 8 as well as the New Hellenic Seismic Regulation. We design, construct and install steel buildings for a wide range of activities non dependent on their size such as:

- Industrial and commercial use,
- Residential & Public sector constructions,
- Multi-storey buildings, (Composite structures)
- Super markets,
- Cash and Carry,
- Logistic centers,
- Laboratories,
- Offices,
- Exposition areas,
- Hangars,
- Storage rooms,
- Hangars-Sheds,
- Parking lots,
- Athletic premises,

whereas they can be fully equipped (turn key) whenever demanded. Our projects are distinguished for the quick time completion due to the bolt connection design followed, for the highly trained staff, the modern equipment and the experienced erecting teams we have.

The most important strategic partners of company and their offered solutions of high and stable equipment quality are constantly assessed.





Unit for construction of toolkits
and other metal parts
(Victoria S.A.)



Mercedes-Benz
facilities workshop
(Theodoropoulos P.)

Harbour Warehouses
(Joint Venture Astakos Terminal)





Unit for electrostatic painting of aluminum
(Basic Metals Company)



Multistorey car parking
(ANTOXI S.A.)



Super Market,
Carefour – Marinopoulos,
(Aktor S.A)



Press Facilities
(PressPack S.A)

Industry for professional catering equipment
(VISVARDIS S.A.)



Multistorey
Commercial Building
(Chatzis D.)



Distribution unit
for milk utilization products
(ZERVAS S.A.)



BUILDINGS TYPE

Tailor made steel buildings designed to conform to business necessities. Most often used basic building types according to the spans which are used are:

- a) single span,
- b) multiple span,
- c) multiple span with supporting columns,
- d) with or without mezzanines as well as multi storey buildings.

We can also manufacture castellated or variable section beams.

MAIN CHARACTERISTICS

The following dimensions are applied by the design engineer wherever the business operation is affected.

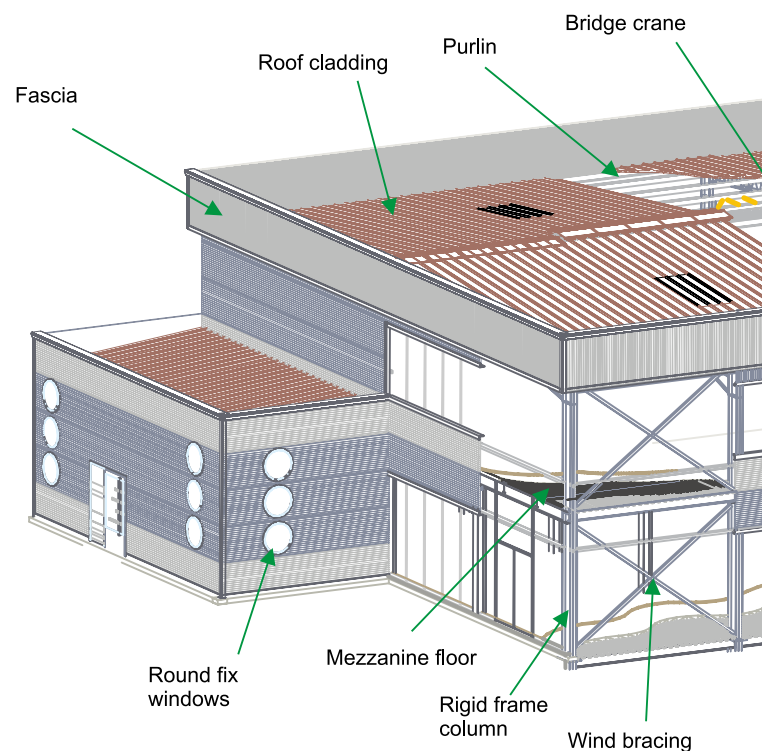
Building width: assigned as the distance from outside sheeting of one sidewall to outside sheeting of the opposite sidewall or the width of the structural frame.

Building length: assigned as the distance from outside flanges side of endwall columns till the outside flanges side of the endwall columns. Building length is divided by interior bay lengths.

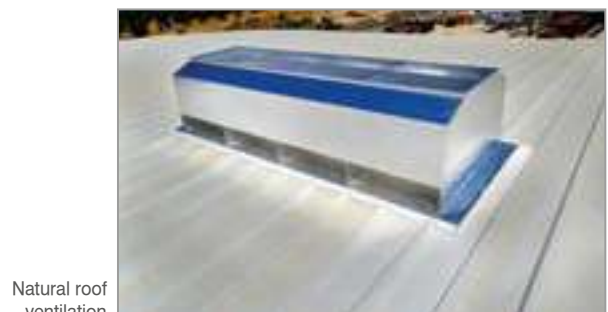
Interior bay length: it is the distance between the axis of an interior column till the axis of next interior column. The most common bay lengths are between 5m and 7m.

Column height: assigned as the distance from the anchorage base of the main column till the highest point. In cases that columns are recessed or elevated from finished floor, then measurement begins from finished floor level. The most often heights come from divisions of 12m and 15m.

Roof slope: assigned as the angle of the roof constituted by rafters with respect to horizontal axis. Usually the roof slope for roof sheeting from panels is 6° or 10%.



Syphonic
Drainage System



Natural roof
ventilation

BUILDING COMPONENTS

According to the most often cases which our company has indicatively come up with the following are to mention:

Foundation/Anchorage/Concrete Works: They are not company's responsibility but should be designed from a licensed engineer with our collaboration.

Wall – Roof Claddings: Consists of insulated composite panels from polyurethane or Rockwool or appropriate sheet metal.

Apertures/Openings: the most common types of doors are of industrial type: roll-ups, personnel, sliding, dock shelters, etc. Window types are of aluminium unlatch or sliding with single or double glass.

Fascias: the main purpose is to hide the roof slope for a better building appearance.

Trims: they offer finishing and waterproofing at building edges. Manufactured by uniform pieces of maximum

length 10m from galvanized or color sheet metals.

Gutter: manufactured by uniform pieces of maximum length 10m from galvanized, aluminium, inox or color sheet metals.

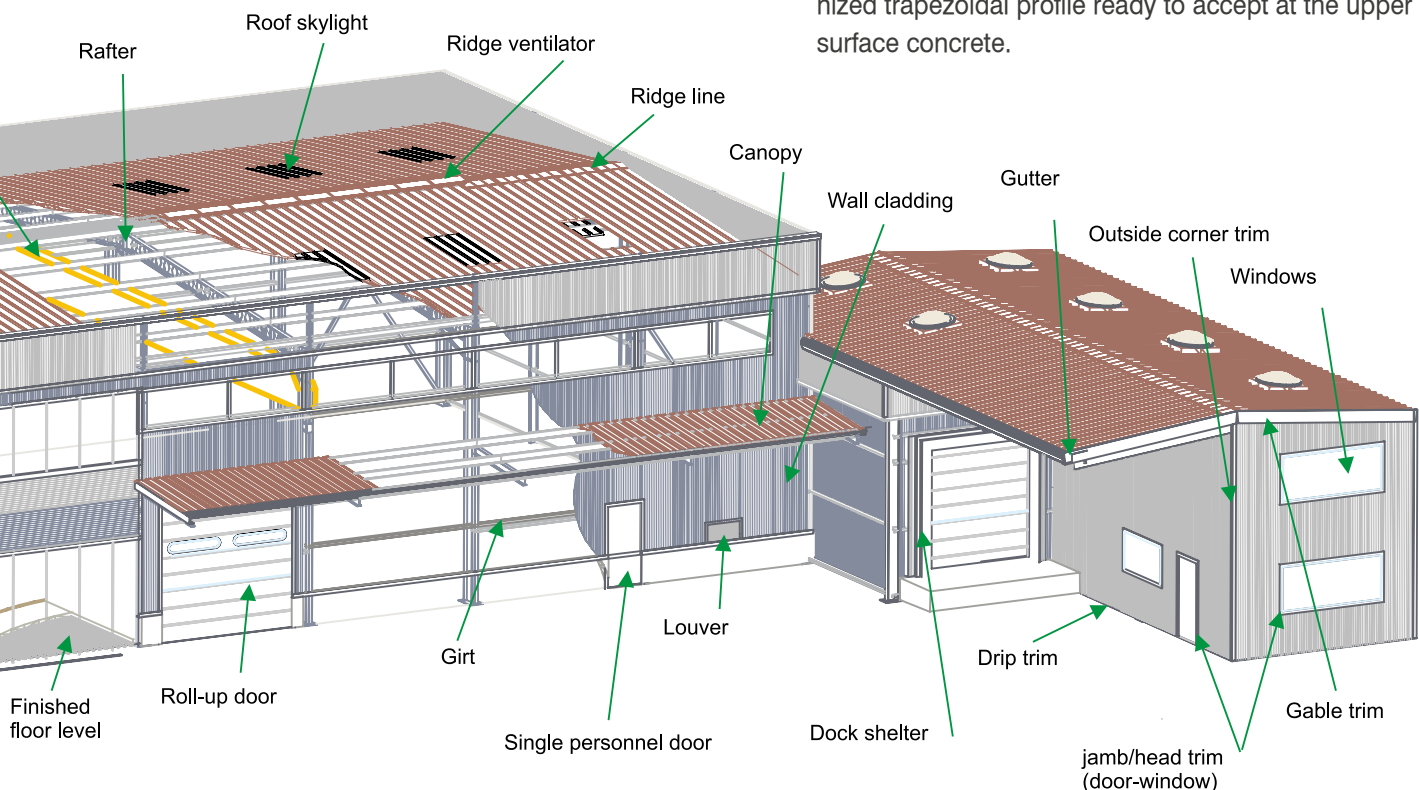
Roof Skylights: consists of fiberglass they offer natural floodlight at working area. They come down by percentage of the total covered roof area.

Purlin - Girt: consists of hot rolled sections or thin wall cold formed (Z-C-Σ) galvanized steel sections.

Wind bracing: consists from hollow or angle section beams providing stability against wind or earthquake forces.

Canopies: consists from hot rolled sections covered either from panel, sheet metal, polycarbonate sheets or glass.

Mezzanine: the main purpose is to utilize the height of the area. It consists by a combination of hot rolled sections profiles and profiled steel sheeting with a galvanized trapezoidal profile ready to accept at the upper surface concrete.



Curved
castellated roof

Outside corner
& Drip trims



E.O.T. CRANES

Wherever there is the need of transporting heavy material we design, manufacture, equip and install cranes, E.O.T. cranes or any elevation system needed according to the particularity of the place or the preference of the customer. At the design stage the appropriateness of the intersections is checked, based on the calculated tension sizes, the marginal failure condition and the marginal condition of functionality as well as on the risk of failure due to overstress.

At the stage of manufacture all DIN and FEM specifications are applied, whereas all relevant products are certified with CE.

The use of equipment from the French manufacturer VERLINDE S.A. during manufacture of E.O.T. cranes, contributes to the high quality standards set forth by our company.



Gantry cranes 2 x 10t
(Hochtief)



Double girder cranes
32-25-20t x 29m
(Sidma S.A.)



Πυλώνες 2 x 10t (Hochtief)

Double girder crane 100/32t x 32m (Elval S.A.)

The department of E.O.T. cranes includes the following activities:

E.O.T. CRANES

- Single girder.
- Double girder.
- Gantry Crane.
- Semi gantry crane.
- Jib cranes (wall mounted or pillar).
- Under slang crane.
- Light crane system based on hollow special profile UKA ideal for production lines.

PROCUREMENT & EQUIPMENT

- Electrical Crane components.
- Electric chain, wire belt hoists.
- Hand operated chain hoists.
- End carriages, Electric cubicle and accessories.
- Explosion proof hoists and crane components.
- Load suspension equipment.
- A big variety of lifting equipment.
- Supply of spare parts.

Inspection and maintenance of cranes as also high quality Service.



Double girder cranes 2x8t x 29m (Sidma S.A.)



Double girder cranes 2x12t x 28m (Elastron S.A.)



Double girder crane 45t x 34m (Elval S.A.)

EQUIPMENT TYPES

Cranes with their lifting equipment play a significant role in transportation of loads especially in industry and construction fields. Depending on transportation nature or production procedures for moving or lifting loads we have some possible choices.

Overhead cranes come in two basic types:

Top Running: The crane bridge travels on top of rails mounted on a runway beam supported by either the building columns or columns specifically engineered for this purpose.

Under Running: The crane bridge travels on the bottom flange of the runway beam which is usually supported by the roof structure.

Subclasses of the above categories are mentioned below:

Single Girder: The crane consists of two end trucks, a single bridge girder and the trolley hoist unit.

Double Girder: The crane consists of two end trucks, two bridge girders and the trolley hoist unit. The trolley runs on rails on top of the bridge girders.

A variation of these types of overhead crane are Gantry Cranes. These cranes have similarities with overhead cranes, however, the bridge girder(s) are connected to "legs. In some cases a jib crane can be adapted on a column with a max. rotation up to 360°.

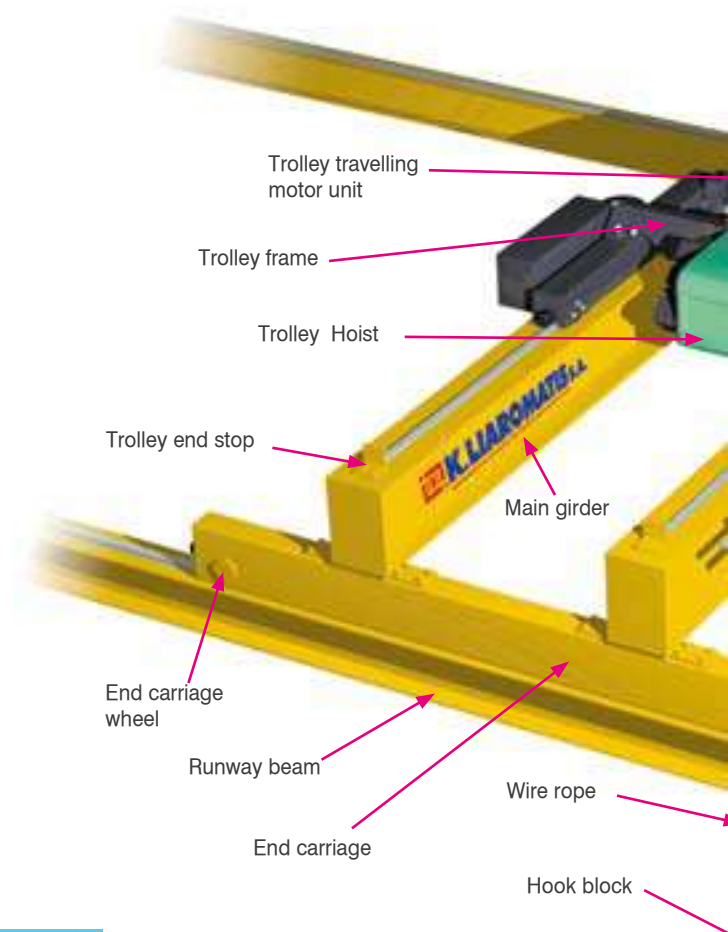
MAIN CHARACTERISTICS

Span: The horizontal distance between the rails of the runway on which the crane is to travel.

Bridge runway: is the covered distance on runway rails.

Capacity: The maximum weight the crane will be required to lift.

Lift or Hook Height: The required distance from the floor to the upper part of crane hook.

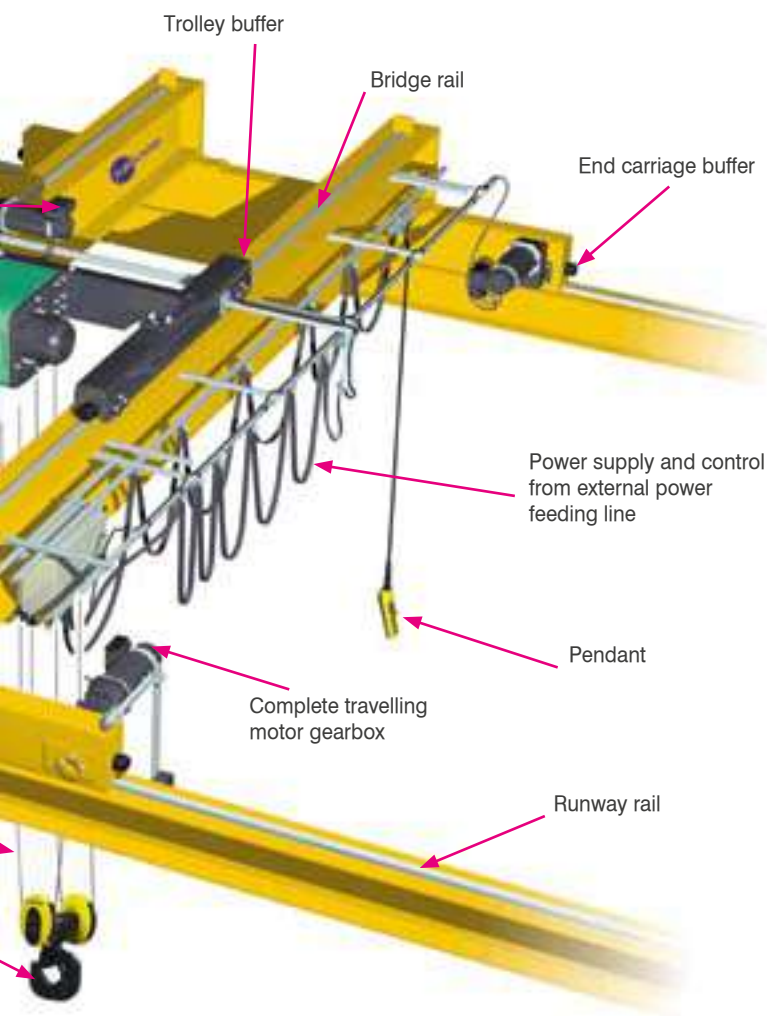


Transport of crane

CRANE PARTS

Maximum vertical deflection: assigned as the maximum permitted vertical deflection of the crane under full load.

Bridge, Trolley and Lift Speeds: The rate at which the bridge or trolley travels, or at which the hoist lifts, usually in meters per minute.



VERLINDE
Powered by

End trucks: Located on either side of the span, the end trucks house the wheels on which the entire crane travels.

Bridge Girder(s): The principal horizontal beam of the crane bridge which constitute by end carriages and trolley.

Trolley Hoist: The unit consisting of both the hoist and the trolley frame. In situations where more than one hoist is required on one crane, both hoists can be supplied on a single trolley or on separate trolleys.

Trolley: The trolley carries the hoist across the bay along the bridge girder(s) traversing the span.

Hoist: The hoist is mounted to the trolley and performs the actual lifting function via a hook or lifting attachment. There are three basic types of hoist: Chain Hoist, Wire Rope Hoist and Belt Hoist.



Construction of crane box

STEEL BRIDGES

The bridges of today show the advancements in steel technology and design which have occurred over the last century. Using the latest technology and automated production lines are not only an economic solution, but offer very little construction time, perfect aesthetic balance and flexibility. The high strength of steel than the same weight is able to provide major sections of low and high exposures.

During the planning phase of three-dimensional modeling is carried out offering the seamless flow of information during the construction as well as necessary lifting controls. The constructions with the use of new technologies in all manufacturing processes ensure high quality. The prefabricated sections of bridge accomplish in new specially designed and equipped facilities. The part of the main beams can be manufactured in single lengths up to 37 m.



Bridge KK 01, Sarande to Kranje road, Αλβανία (AEGEK S.A.)

Bridge T8, Egnatia Highway Road (AEGEK S.A.)



Bridge T8,
Egnatia Highway Road
(AEGEK S.A.)



Bridge Luftinja BR 2.08,
Dames Tepelene road, Αλβανία
(AEGEK S.A.)



SPECIALIZED STEEL CONSTRUCTIONS

Our many years of accomplishment and experience coupled with up to date manufacturing equipment allows us to design and produce a wide range of high standard specialized constructions. The highest quality is ensured by adhering to the absolute specifications of our customers and applying our high technology production procedures to reduce the construction time and reduce or eliminate any errors. The superior quality of raw material in combination with our highly trained and experienced staff guarantees the total quality and long life of our constructions.

Harbour control tower
(Astakos Terminal Joint Venture)





Carriers workshop (Astakos Terminal Joint Venture)



Harbour main gate (Astakos Terminal Joint Venture)



Steel retaining wall (Gefyra Joint Venture)



Staircase
(Gefyra Joint venture)



Strengthening
plates
(Gefyra Joint
venture)



Aggregates
lift system
(Mintech)



Hotel Unit (Horizon S.A.)



Staircase
(Mihaniki S.A.)

CUSTOMERS' LIST

We offer advanced and complete solutions to our customers, their confidence is thus a fundamental and all-time value. Covering a great range of building needs for our customers, in public or private sector, we offer constructions characterized by reliability, perfection, durability, velocity, accuracy, high aesthetics

The complete understanding of the customer's requirements, the quick time response and our quality constructions are our basic aim and commitment. Developing and renewing continuously our projects we mention indicative customers' list:



Rely on confidence...





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