

Control Systems and Software



ESAB Vision Controllers

The ESAB Vision product family comprises of various numerical control systems. All cutting parameters are set and controlled by the NC control.



The control systems have interactive fault diagnostics which can be linked to remote systems to aid trouble shooting.

The bus connection system reduces cabling and conduit requirements eliminating sources of electrical interference while aiding the ease of upgrading equipment at a later date.

The numerical control systems from ESAB are efficient, function-oriented and easy to operate.

- Integrated cutting data base for fully automated production cycles.
- Dynamic speed regulation for optimum cutting results
- Fixed program library



Columbus Software

In the increasingly complex surroundings of a demanding production environments it is essential to have an efficient 2D programming system.

COLUMBUS is a proven software package with a modular structure for 2D cutting which consistently adapts to your individual cutting requirements.

Your partner ESAB, your partner in welding and cutting

About ESAB

Almost seventy years' experience of cutting and responding to customers' needs have resulted in an extensive range of products to meet profile cutting applications. Based around the four methods of laser cutting, oxy-fuel

cutting, plasma cutting and water jet cutting, ESAB has developed a range of machines that deliver better cut quality, higher cutting speeds, lower operating costs and allow sophisticated integration into automated production methods.

System Solutions by ESAB

CUTTING SYSTEMS, PROCESSES AND ACCESSORIES
FOR MAXIMUM PRODUCTIVITY



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ESAB Cutting Machines

Ultrarex UXC

ULTRAREX UXC is a cantilever machine with coordinate drive system – ideal for production systems with plate widths of up to 2m. The machine is equipped with a 1:1 photoelectric tracing head and allows for facilitated processing of scribed paper templates or scan drawings.

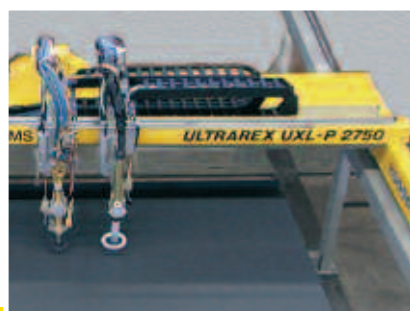
- Easy installation and operation
- An oxy-fuel cutting torch and/or a small plasma unit of 50 – 100 amps can be installed.
- Expansion options from optical control to comprehensive numerical control



Ultrarex UXL-P

ULTRAREX UXL-P is a multi-purpose, CN-controlled portal machine designed for restricted working areas, which can be used for both plasma and oxy-fuel cutting.

- Cutting widths up to 2m
- Oxy-fuel cutting up to 50 mm material thickness
- Plasma system up to 100 A
- Installation of 2 automatic torch carriages possible
- Integrated functions such as capacitive height control, automatic ignition and hole piercing for working convenience and optimum cutting quality.
- Efficient work preparation by ESAB Vision control, high dimensional accuracy and exact repeatability.



Ultrarex UXD-P

ULTRAREX UXD-P provides for flexibility and versatility. This is an extremely productive CN-controlled portal machine and allows for both plasma and oxy-fuel cutting. The low dead weight and the high stiffness of the machine ensure rapid acceleration and deceleration – two considerable factors for high-quality cutting processes.

- Operating speeds up to 20 m/min
- Cutting widths up to 2.5 m
- Plasma and/or oxy-fuel cutting applications
- Up to two torch carriages can be used fully automatically
- Double rack and pinion drive for highly precise cutting



Combirex CXL-P

The solid COMBIREX CXL-P can be fitted with up to four cutting tools – both plasma and oxy-fuel cutting torches. Due to its special design, the machine is remarkably versatile and flexible. Its modular concept renders COMBIREX CXL-P fit for future production challenges.

- Modular design with versatile CNC system
- Three sizes available (2,500, 3,000, 3,500 mm)
- Runway rail extension up to 18 m
- Plasma and/or oxy-fuel cutting



E-Vent

E-Vent is a new type of plasma cutting system with NC control and software, especially designed as an integrated solution for automated production processes in the fields of heating, ventilation air conditioning and insulation.

- Can be installed and commissioned in only one day
- ESAB plasma for cutting of steel plates (even galvanized), stainless steel and aluminium smooth and dross-free *

* depending on material

- High cutting speed of up to 20 m/min
- Maximum cutting range of up to 2,000 x 8,000 mm
- Maximum cutting thickness 8 mm
- Extensive software with many industry-specific functions
- Optional connection to networks



Eagle

The versatile EAGLE portal cutting machine is perfectly adapted to ESAB precision plasma systems and is available for numerous plate sizes. The entire design combines many functions and features optimized efficiency as well as an improved plate handling. It is distinguished by up-to-date design and the integration of advanced technologies while combining high productivity, extraordinary accuracy and progressive process integration with highest

cutting quality in a cutting thickness range from 0.75 to 30 mm.

- Cutting widths up to 3,000 mm
- Pre-selection of cutting parameters via data base in compliance with plate thickness
- Operating speed up to 35 m/min
- Optimum dynamical values

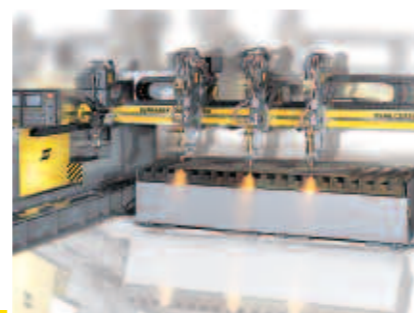
ESAB Cutting Machines

Suprarex SXE-P1

SUPRAREX SXE-P1 is a high-performance heavy-load portal machine with CNC and a modular design perfectly meeting most various client's requirements. The machine provides driving precision and a strong beam design. This gives the machine flexibility to adapt the different processes of oxy-fuel cutting, plasma cutting and marking.

- Operating speeds up to 24 m/min
- Cutting widths up to 3,700 mm
- Up to 6 tool carriages
- Areas of application: oxy-fuel cutting, plasma cutting, marking tools for fully automated processes

- Automatic functions: automatic tool carriage positioning, automatic ignition, automatic height control, automatic gas adjustment and regulation

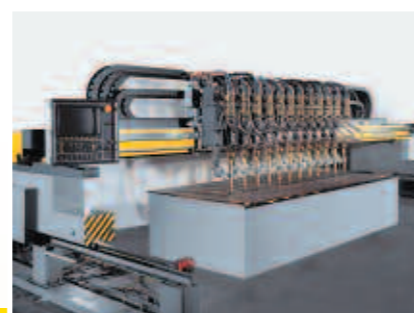


Suprarex SXE-P2

SUPRAREX SXE-P2 is based on the same modular functional concept and was extended on this basis. The advantages of this machine are its flexibility for solutions regarding specialized client's requirements.

SXE-P2 is recommended for specialized tools, in particular bevelling units.

- Cutting widths up to 4,700 mm
- Up to 8 tool carriages



Suprarex SXE-P3

SUPRAREX SXE-P3 is the ideal choice for cutting widths of up to 7,200 mm. The strong beam design is suitable for all conventional cutting processes, in particular also for oxy-fuel cutting. This machine has been designed for multi-shift service,

requiring only a minimum of operation and ensuring a high degree of availability.

- Cutting widths of up to 7,200 mm
- Up to 12 tool carriages

Numorex NXB

NUMOREX, which can be fitted with highly advanced cutting tools, is remarkably versatile and flexible. Maintenance-free, brushless motors in combination with highly dynamic planet gears smoothly drive longitudinal and transversal axles. They provide an absolute guiding accuracy and exact positioning as well as high acceleration values.

- Operating speeds of up to 25 m/min
- Machine size up to 8,000 mm
- Heavy-load tool carriages: automatic multiple-tool/process carriage, plasma VBA, triple oxy-fuel cutting torch units



Telerex TXB

With regard to size and capacity, TELEREX rounds-off the ESAB product range towards the high end. The leading and most efficient system in the field of large cutting systems, which is used in the shipbuilding industry, for bridge construction and in pressure vessel production meets

the requirements of highest precision, productivity and economic efficiency.

The large number of TELEREX portal cutting machines successfully commissioned worldwide emphasizes this achievement.

- Machine size up to 32,000 mm
- Specialized tools: Vacublast jet, grinding devices, plasma marking systems, plasma and/or oxy-fuel bevelling units



Alpharex

ALPHAREX laser cutting systems are equipped with laser resonators and optics from Trumpf, the leading provider of laser technology. Depending on the area of application, 3 kW, 4 kW or 5 kW CO₂ lasers are used.

ALPHAREX is not only capable of cutting sheet material, but also of thick structural steel plates, stainless steel and aluminum.

- Constant cutting quality over the entire working area
- Cutting widths of up to 5,000 mm; 25 mm cutting thickness for structural steel
- Bevel cutting
- High dynamics and speed, since all movements are performed by the cutting head
- Optimum adaptation of the entire system



Cutting processes

Oxy-fuel cutting

Oxy-fuel cutting is the flame cutting process most frequently used for cutting structural steel and large plates. Oxy-fuel gases are used for cutting low-alloy steels with thicknesses between 3 mm and 600 mm. ESAB has gained comprehensive experience for this process in the industry.

On this basis, ESAB carries on its development efforts and continuously brings improvements to market maturity.

- CoolJet torches cool the cutting chamber during cutting and thus ensure an extended service life of wear parts.
- Flame control and monitoring of cutting process

- The "cutting parameters" option of the ESAB Vision control system exactly adjusts all data relevant to cutting in accordance with the given plate thickness.



Plasma Cutting

A plasma cutting process is suitable for conductive metals and allows for highest cutting speeds. If efficient energy sources of up to 1,000 amps are used, metals with thicknesses of up to 160 mm can be cut.

For more than 40 years ESAB has been a pioneer in plasma technology. Many thousands of ESAB plasma systems have been commissioned all over the world. Our extensive product and accessories ranges transport our expertise directly to the client and provide clients with highest cutting quality at the lowest possible cost.

The design philosophy behind is oriented towards manless operation to the largest possible extent, with control of all cutting parameters by the automated files of the ESAB Vision control system.

Targets are:

- Cutting quality independent of operator
- Constantly high-quality work pieces
- Shortened setting times between different orders
- Optimum relation between cutting quality and cost



Precision Plasma

ESAB Precision Plasma Cutting produces excellent cutting qualities and an extremely high degree of accuracy for cutting thicknesses of up to 30 mm. The generated plasma jet provides absolute precision, narrowest cutting joints, low angular deviation and minimum distortion due to heat.

The low consumption of wear parts and the long service life of the system furthermore reduce operating cost. One single plasma torch is used for marking and cutting. This additionally lowers cost and increases the accuracy between the two processes.



Laser Cutting

The 3 kW, 4 kW or 5 kW CO₂ laser cutting system is a very flexible tool. The significant advantages are cutting of thicknesses up to 25 mm, marking

with the same tool, high process speed, narrow cutting joint, minimum distortion due to heat and extremely high accuracy.



Waterjet Cutting

Cutting with a high-pressure waterjet is an alternative to conventional thermal cutting processes. By adding

abrasive substances to the cutting jet, many materials, also non-metal, may be cut with excellent precision.



Bevel Cutting

ESAB has developed a large number of tools for bevel preparation:

- Triple oxy-fuel cutting torch units for V, X, Y, and K-cuts in structural steel with thicknesses of up to 75 mm

- VBA-Wrist is a rapid bevel cutting tool for accurate V-cuts of $\pm 50^\circ$.

- Laser bevelling allows for precise bevel cuts due to the high laser beam quality

Marking

ESAB has introduced marking systems for the most different tasks of line and text marking on the market. The automation of these marking applications has significant advantages for work processes and reduces cost.

- Plasma marking for line widths between 0.6 mm and 3 mm. The largest advantage is the marking speed of up to 18 m/min, a short

start-up time and permanent metal marking.

- Inkjet marking represents the most rapid marking solution and is capable of line, text and bar code marking in manifold shapes and sizes.

- Pen marking is used on polished aluminum and stainless steel surfaces if the surface is to remain unaffected.

- Pneumatic signing is an alternative marking method if the plate concerned is to be drilled subsequently (pneumatic hammer device).



Environment

ESAB have supplied environmentally compatible flue gas and dust filter systems for many years. ESAB offer

complete turnkey plants with integrated cutting tables for flame cutting, submerged and dry plasma cutting.

For automatic loading and unloading, a specialized conveyor technology is offered.