

ESAB CUTTING SYSTEMS



NUMOREX NXB

Flexibility, Durability, Reliability



Machines



Processes



Numerical Controls



Programming



Environment



ESAB, YOUR PARTNER IN WELDING AND CUTTING.



ESAB NUMOREX NXB

The NUMOREX machine is extremely versatile and flexible. Longitudinal and transverse axes are guided by proven systems with maintenance-free brushless motors, in conjunction with high-dynamic planetary gearboxes. These guarantee a high degree of accuracy in guidance and positioning as well as high acceleration. The machine can be equipped with the most advanced cutting tools.

General description



The NUMOREX is a heavy duty and massive gantry machine designed to work in extreme conditions. By automating the cutting and marking operations it consistently and reliably delivers the highest standard of work. The NUMOREX machine is designed to be fully integrated into a PLC (Programmable Logic Control) environment where the highest accuracy cutting system is required. The machine controller can be easily connected to the local network via an ethernet board, meaning higher communication rate and flexibility.

The NUMOREX guarantees unbeatable cutting repeatability for its whole operational lifetime. The first cut will be like the last cut.

- Individual and automatic flame ignition per carriage avoiding manual ignition
- Set of solenoid valves per carriage reducing the gas consumption by switching on/off the burner when needed
- Automatic flame check monitoring which detects potential ignition failure and restarts automatically up to 5 times the ignition sequence avoiding permanent standing close to the machine
- Automatic flame cut adjustment and cut monitoring enables the machine to adjust the flame to the appropriate value for optimal cutting quality



Versatility - Modularity

The NUMOREX machine can be equipped with any combination of oxy-fuel, plasma or marking process and always integrates high automation equipment. Typical equipment includes:

- **Multi-carriages oxy-fuel burners** which enable the mirror image or congruent cut possibility for the cut of up to 12 parts at the same time. These stations can integrate all advanced automated devices such as:
 - Automatic capacitive height control which guarantees constant height between the plate and the burner enabling perfect cut quality

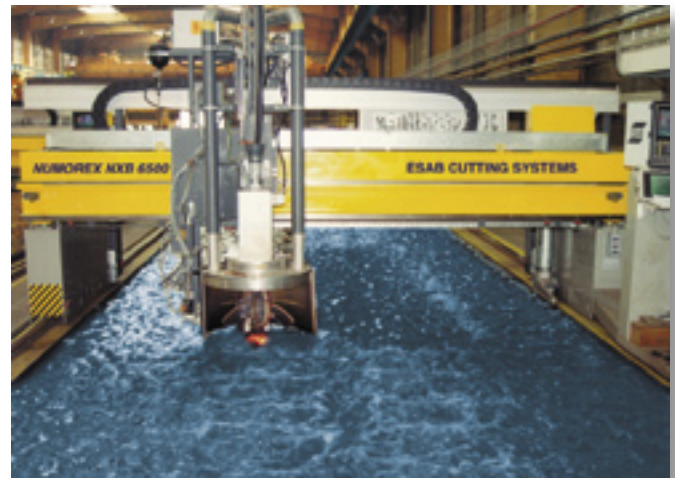
- **Different oxy-fuel bevelling heads** for a wide range of bevel profiles:
 - Bevel cutting of V-, Y-, K- and X- joints, covering the full range of -49° up to $+49^\circ$ bevel angle, accuracy of less than one degree for better tolerances
 - Cutting height sensing is via a responsive sensor foot, giving highly accurate bevel height control of less than $\pm 0,3$ mm for absolute cutting straightness. The perfect straightness of the part and the exact bevel angle greatly reduce the production time with regard to secondary welding processes



Most of the plasma solutions can integrate a power source up to 1000 Amps to cut thicker and faster. The NUMOREX can be equipped with an automatic gas console where the gas selection and gas settings are directly adjusted and set by the NCE controller. This feature will consistently save time and money.

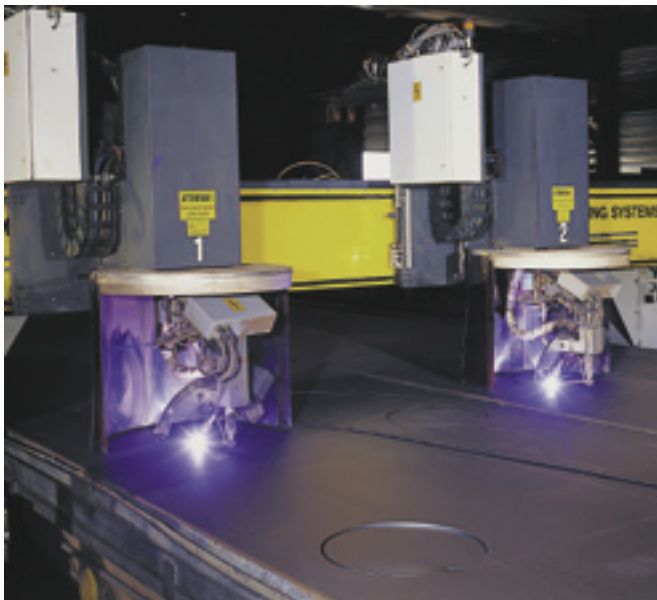
- **Various robust and precise plasma bevelling heads are available depending on the application.**

All electrically conductive material can be bevel cut from -45° to $+45^{\circ}$. Most of the plasma bevelling heads are endless rotating plasma heads. It allows cutting of any shape many times faster than the oxy-fuel process. The part is cut and bevelled at the same time, avoiding secondary manual operation.



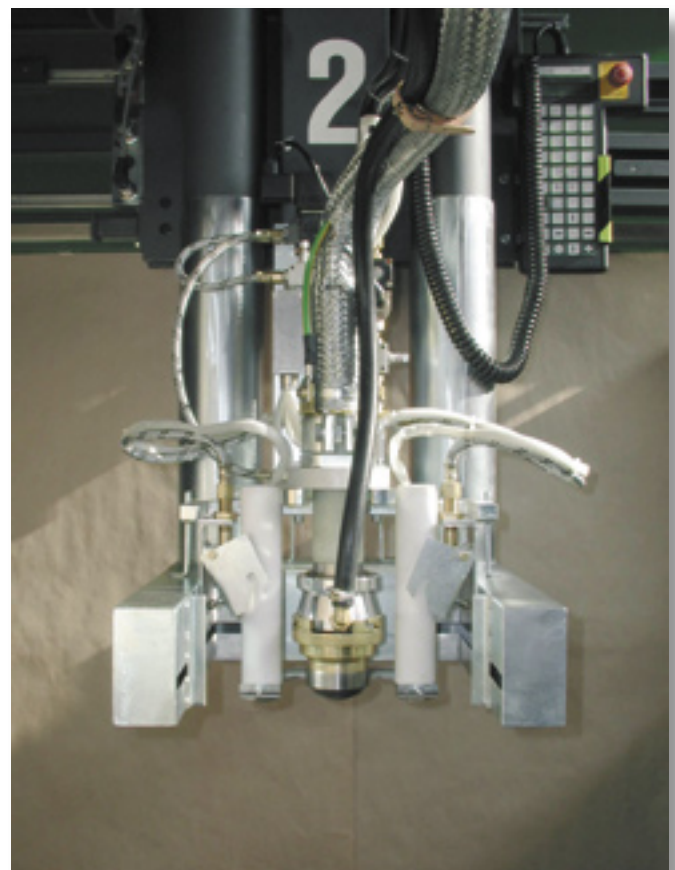
- **Advanced plasma torch stations**

The plasma stations are designed to incorporate all the latest enhancements in plasma cutting to give a sophisticated fully automatic torch height control together with latest technology in collision protection and operator convenience:



The NUMOREX is designed to integrate any or all of the below:

- Under water plasma equipment which reduces the fume, noise and ultra violet emission
- Dry plasma units which enable higher productivity
- Precision plasma giving laser like cut quality



- Initial torch height setting via external sensor – positioning the height of the plasma torch within a very short cycle time, greatly reducing arc off time. This increases the consumable lifetime by having the correct height for ignition.
- Responsive arc voltage height sensing to maintain the optimum height during cutting.
- ESAB's unique anti-collision system offers the following advantages:
 - Immediate stop of the machine on a collision
 - Breakaway of the torch in the event of a catastrophic collision to avoid damage
 - Easy consumable change by removal of the torch from its mount
 - Highly accurate alignment sensor which always guarantees perpendicular alignment of the torch
- A variety of counters, that inform the operator of the number of pierces, length of cut, and arc on time since the last consumable change.

• **Marking tools devices:** To gain in productivity, the marking of letters, references, bar codes, lines for bending, positioning marks... can be produced in fully automatic mode before cutting the part. All available marking devices such as powder, punch, arc marker, inkjet marking are available options on the NUMOREX. The marking sequence is managed by the CNC performing all offsets between the cutting tool and marking tool.

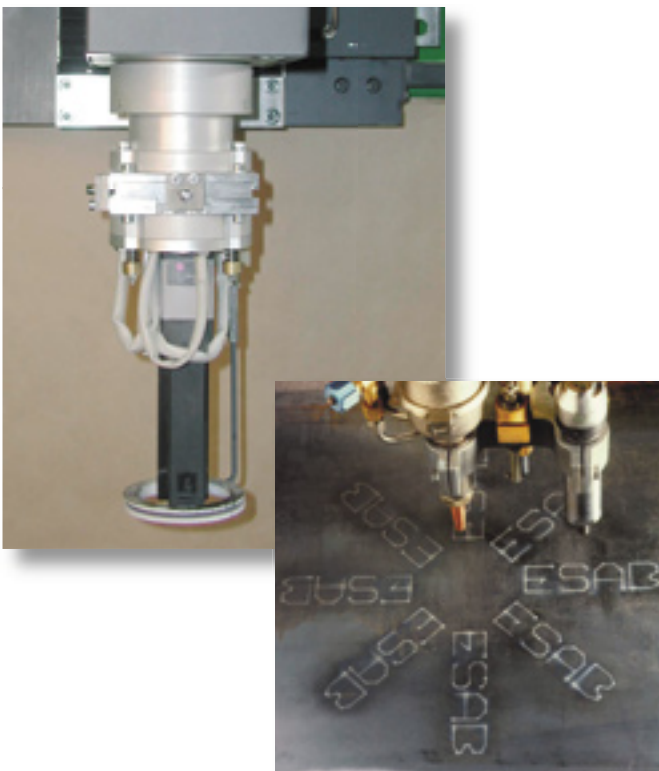
Durability & Accuracy

- **Heavy duty machine tool design – built for longevity and high duty cycle**
The transverse beam is a heavy reinforced welded square beam with front side mounted transverse guiding-ways and rollers. The linear guiding system on top and bottom of the transverse beam is employed when heavy tools such as bevelling stations are installed. The NUMOREX machine features a transverse drive with precision rack and pinion, zero backlash gearbox, AC Motors and digital amplifiers. This promotes the highest positional accuracy within the full working area. For higher productivity applications, the NUMOREX can be delivered with up to 4 (8) driven cross carriages boosting productivity with fast, programmable positioning of the stations.



Over sized wheel

Four hardened steel oversized wheels (2 per side) which are wider than the track, carry all the machine weight effortlessly to ensure smooth movement and avoid grooving on the track surface. Wheel scrapers and air blast keep the rail and wheels free of debris to help maintain integrity of the rail and wheel bearings.

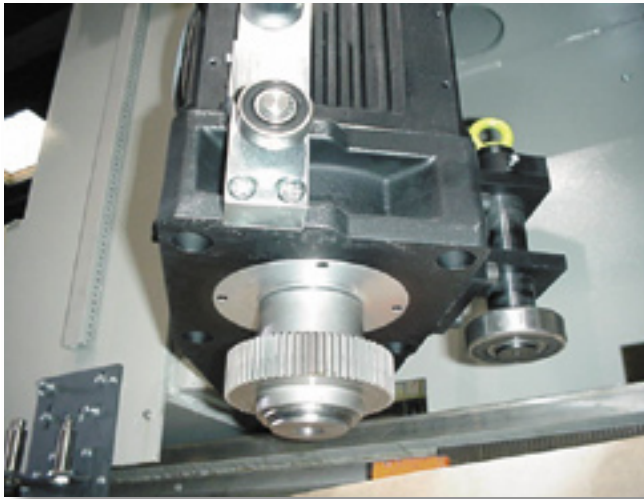


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Digital AC brushless drive



All axes feature digital AC brushless motors and planetary gear-boxes that provide high torque and high speeds. These gear-boxes provide the lowest backlash values in the industry. This results in an extremely smooth motion together with high positional accuracy. The drive is swivelable for easier maintenance. Also it is fully protected by its mounting inside the side carriage.

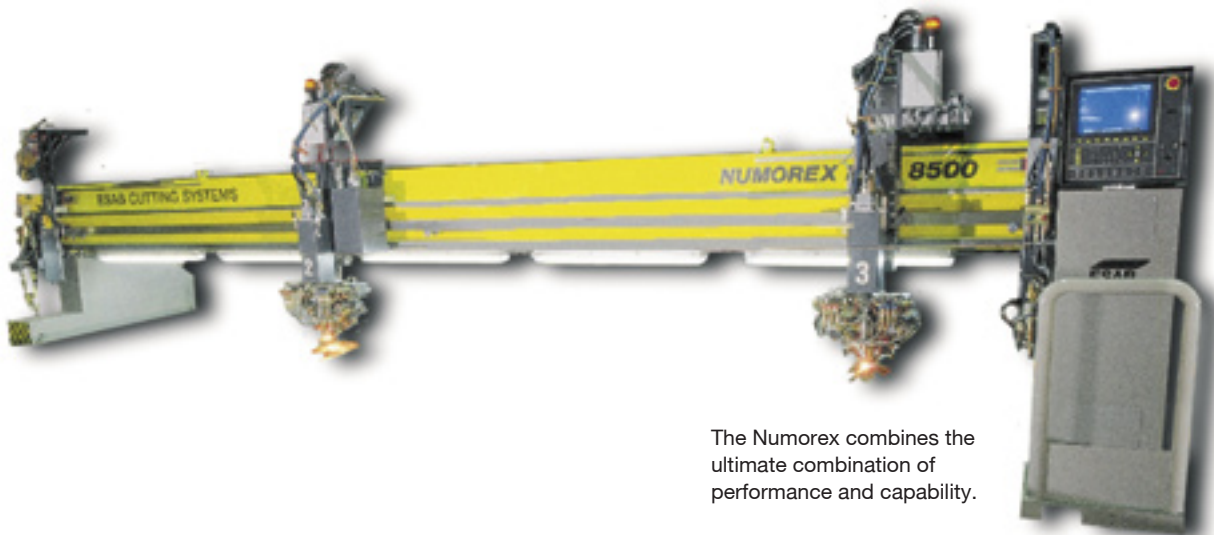


The high power and dynamic servo drive system gives profiling speeds up to 25 m/min. The drive system also delivers high acceleration for optimum performance on detail work and small holes. Dual side drive rack and pinion in longitudinal or X axis combined with ESAB's NCE control software enable absolute positioning and accuracy.

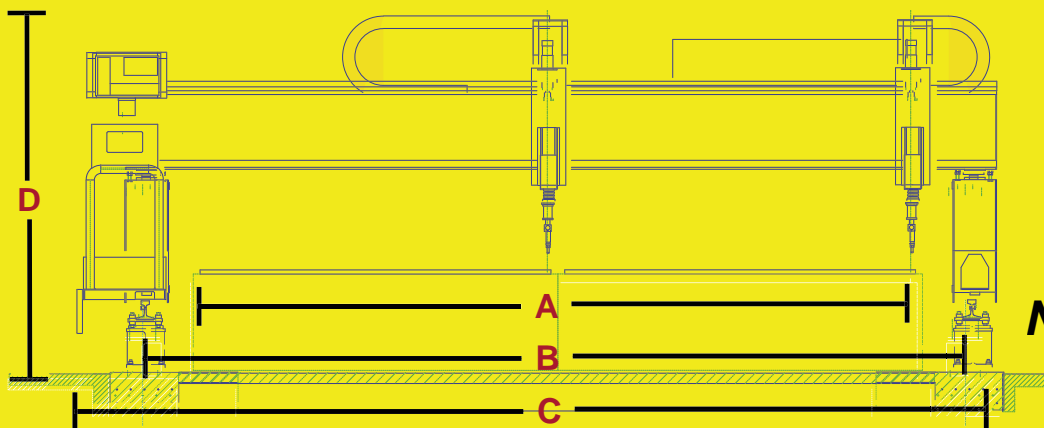
Higher productivity
User independent cut quality



For the oxyfuel and plasma processes, ESAB provides automatic setting of all the machine and process parameters by selection of the appropriate SDP file. This unique system enables the customer to achieve consistent cut quality regardless of the operator's skill level or experience. Set up times between different thicknesses and different materials are extremely reduced ensuring consistently high cutting quality with better productivity.



The Numorex combines the ultimate combination of performance and capability.



NUMOREX NXB

	NUMOREX NXB sizes 1) (B) (All dimensions are in mm)			
	5000	6000	7000	8000
Working Area (A)				
1 x Under water plasma VBA, infinite rotating, plasma marking, mirror image	1 x 3000	1 x 4000	1 x 5000	1 x 6000
2 x Single torch carriage, parallel cut	2 x 2050	2 x 2550	2 x 3050	2 x 3550
2 x Single carriage and marking, mirror image	2 x 2000	2 x 2500	2 x 3000	2 x 3500
2 x Plasma, under-water, parallel cut	2 x 1850	2 x 2350	2 x 2850	2 x 3250
2 x Triple oxy-fuel torch, endless rotating, parallel cut	2 x 1850	2 x 2350	2 x 2850	2 x 3350
2 x Triple oxy-fuel torch, endless rotating, marking, mirror image	2 x 1500	2 x 2000	2 x 2500	2 x 3000
2 x Dry plasma VBA, infinite rotating, parallel cut	2 x 1200	2 x 2200	2 x 2700	2 x 3200
2 x Under water plasma VBA, infinite rotating, mirror image		2 x 1500	2 x 2000	2 x 2500
2 x Under water plasma VBA, infinite rotating, plasma marking, mirror image		2 x 1200	2 x 1700	2 x 2200
Machine width = Machine size + 600 mm (C)	5600	6600	7600	8600

Cutting thickness (One torch) [mm]	3 - 200 (300)
" (triple torch oxy-fuel) [mm]	8 - 100
Working speed [mm/min]	50 - 25000 2)
Positioning speed [mm/min]	up to 25000 2)
Max. number of carriages	12
Connection voltage 4) [V/Hz]	3 x 400 V/50 Hz

- 1) Extension by 500 mm
- 2) Depends on configuration
- 3) Other gases on request
- 4) Other voltages on request

Input power [VA]	~ 7500
Cutting table height [mm]	650
Track height [mm]	490
Fuel gases 3)	Acetylene/Propane/Mixed gases
Machine with or without platform	Depending on configuration
Machine height (D)	2900 - 3250 depending on configuration

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



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The right to make technical modifications and improvements is reserved, configuration might differ.



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