ALPHATOME² HPi
High precision plasma cutting
Lincoln Electric proposes ALPHATOME HPi as a new cutting machine for carrying out high precision work. ALPHATOME HPi also takes into account increased safety for the operator and his environment against the effects of the electric arc emitted when cutting the plasma.

ALPHATOME HPi

It is equipped for its full protection, the machine fits perfectly in the environment of the workshop reducing the visual problems.

Wearing goggles or masks is not necessary for the machine operator or for the personnel working nearby.

Design

The design of this machine allows one to combine all the characteristics that are necessary for the operation of the machine tools:

- **precision of the guides** by ball-bearing systems on the X, Y and Z axes,
- **quality of the drive** by brushless motors,
- **robustness** of a roller track of a rigid structure which is adapted to the process constraints.

The transverse beam, which comprises of two components, on which the transverse guide rails are laid, facilitates high precision in positioning the torch.

The separation of the two components of the transverse beam provides the option of receiving a bonded chamfering assembly or a mechanical drilling device.

The general design of ALPHATOME HPi brings with it all the advantages required for cutting plasma:

- **efficient control** of the trajectories,
- **repositioning precision** (+/- 0.1 mm measured to the height of the cutting site) whatsoever the position is on the site (length or width),
- **perfect interactivity** between the movements of the machine and the management of the process.

ALPHATOME HPi was designed in such a way that it can be installed in a workshop. Thus, depending on the choice, the guiding chains will be placed right or left, conditions of use will determine where the control console is placed.

ALPHATOME HPi is a single-torch installation (or two-torch option) for cutting plasma of carbon steel (unalloyed or with low-alloys), stainless steel or light alloys, on sheets with a maximum thickness of 50 mm. According to the usage you require, you can choose a machine with a useful width of 2 m, 2.5 m, 3 m, 3.5 m or 4 m. The length can be modulated by 2 m or 3 m components.

This machine is driven by the HPC DIGITAL PROCESS system and controls the NERTAJET HPi cutting systems from 150 to 450A.
ALPHATOME® HPi is an installation particularly used in industry sectors for metal cutting, boiler making, shipbuilding and railway construction, sub-contracting, ventilation, sheet steel for precision and cutting quality.

ALPHATOME® HPi is offered in 2 versions for protective equipment:

- **Essential PROTECT**: integrated version particularly noted for its optimised protection of longitudinal slide rails.

- **Advance PROTECT**: a version that is completely equipped with side doors, a non-detachable front curtain, a rear curtain and a complete safety guard of the roller tracks.

The common denominators of these 2 declinations are:

- The guidance precision and fluidity along the cutting tracks ensuring optimum HPi plasma quality.
- Machine safety integrating several standardised devices that are in accordance with the machine regulation 2006/42/EC.

### NERTAJET HPi

Next generation high precision plasma, it implements the latest advanced features developed by Lincoln Electric in order to increase the cutting quality while optimising production costs:

- **CYCLE BOOST & INSTANT MARKING** for reducing the production time.
- **MASTER HOLE & CDHC** for increasing the cutting quality.
- **SOFT IGNITION, SOFT PIERCING & TWIN DETECT** to simplify usage and integration.

ALPHATOME® HPi uses all the plasma cutting and marking process of the NERTAJET HPi installations of the HP150, HP300 or HP450 version.
High quality plasma cutting requires more and more precision. L’ALPHATOME® HPi facilitates the cutting and marking of carbon steel through the plasma process (unalloyed or with low-alloys), stainless steel and light alloys, on sheets of 0.5 mm to 50 mm.

**ALPHATOME® HPi and its casing Advance PROTECT**

**Machine safety guards**
The beam is delivered with a package «casing» which mainly comprises of:
- a protective curtain that can be lifted at the front, controlled from the control panel,
- a fixed rear curtain,
- two side doors that can be opened quickly, to allow easy access to the torch (or torches) for quick replacement of worn out parts [thanks to its ergonomic design].

This protective package "beam casing" visually protects against the plasma arc. The operator can control the lifting of the curtain at any time to see the state of the cut.

**Installation of roller tracks safety guards**
The roller tracks are protected by a steel safety guard which provides increased protection of the equipment and operators.

L’ALPHATOME® HPi is therefore an aesthetic, functional machine which is extremely safe to use.

**Safety devices**

5 emergency stop buttons:
4 located at each corner of the machine and 1 on the control panel.
The operator can work in a totally safe environment.

2 photoelectric cell emergency stop devices are located at the front and at the rear of the beam which allows one to work in complete safety.

2 switches to stop the machine cycle are located in the opening side doors and connected to the key locking. It guarantees that the machine start in safety condition after wear parts have been exchanged.

* The purchaser is responsible for ensuring that the equipment produced in his workshop conforms to the requirements. As a conceiver and constructor Lincoln Electric, produces machines in conformity with the machine directive 2006/42/EC and provides advice and recommendations that meet the obligations of the employer directive.
HPC digital process EtherCAT

Numerical control equips numerous Lincoln Electric machines. It completely controls the cutting machine: from the trajectory to the process. Its user-friendliness and ease of use makes it a unique and recognised tool on the plasma thermal cutting market.

How does the automatic process regulator work on the HPC DIGITAL PROCESS?

Phase 1:
After selecting his programme the operator chooses the material to be cut.

Phase 2:
The HPC offers one or several cutting solutions adapted to its application.

Phase 3:
After having accepted the proposition, all the parameters are set automatically.

Phase 4:
When the plasma tool is equipped with recommended consumables the machine is ready to cut.

ALPHATOME® HPi and its Essential PROTECT casing

In this version, ALPHATOME® HPi retains all its dynamic qualities and fluidity of movement which facilitate obtaining the best HP cut.

Safety is ensured by:

- 4 photoelectric cell, emergency stop devices: 2 securing access on the sides of the beam when the machine is moving. The other 2 are placed at the front and at the rear of the machine in order to avoid collision risks.
- 3 emergency stop buttons: 2 on each side of the machine and 1 on the control panel.

The longitudinal rails are protected by an upper, robust and integrated safety guard; the rail is thus adapted to work in the most demanding production environments.
ALPHATOME® HPi implements advanced features to simplify the use and monitoring of the machine but also to increase the longevity of the guiding performances: VISIO PROCESS, remote control and new motorisation pack.

**VISIOPROCESS**

A camera allows one to see the position of the torch on the control screen. The controlled area, approximately 250 mm in diameter, facilitates the positioning before and during cutting and monitoring of the arc. Whatever the location of the control panel the operator can control the cutting and position its torch. This camera is protected against the dazzling effects of the plasma arc. According to the choice of the operator, the view will be black and white or coloured.

**Remote control**

To facilitate the work of the operators, a remote control option, that has a compact design, is proposed. This option facilitates the control of the main operations of the machine, avoiding the to and fro movement of the operator from the control console in the work area. It is also a complementary element for safety that allows one to stop the machine, at a distance.

**New motorisation pack**

This pack comprises of gearless geared motor equipped with 750W EtherCAT servomotors and an innovative brake system of pinion in the racks. The geared motor is equipped with a large diameter pinion which facilitates fluid movements of the machine. The gear unit is permanently lubricated and the replacement of the pinion is quick and easy. On the longitudinal axes, the pinion is engaged on the rack thanks to an innovative system which:

- compensates the alignment imperfections of the tracks,
- makes the clutch clearance constant along the tracks,
- reduces the wear of the pinions and gear racks thanks to the minimum effort applied on the contact area.

This system allows the reduction of maintenance costs and extends the machine’s quality of movement and therefore the cutting quality.
Specifications and options

ALPHATOME® HPI is a machine designed to suit the most complex requirements in the sheet metal cutting market. The options described hereafter are developed and industrialised for standard equipment for years. These are solutions tested in real production conditions of numerous clients. We offer them to you in order to improve your installation performance even more.

Main characteristics:

- High speed: 22 m/min (15 m/min for the Essential PROTECT version).
- Cutting speed: from 0 to 10 m/min.
- Number of tools: 1 or 2.
- Transverse drive: 1 motor per torch.
- Numerical control: HPC DIGITAL PROCESS.
- Roller track: by components of 2 m or 3 m.
- Cutting table: not fixed to the machine, its dimensions are adapted by means of the sheet dimensions.

The table will be coupled to a suction and cutting smoke processing system.

Options:

- Micro-percussion marking.
- Felt marking.
- Pneumatic marking.
- Extension of the roller track with components of 2 or 3 m.
- Positioning of the control panel and of chains to the right or left of the machine.
- Possibility of receiving two NERTAJET HPI plasma cutting installations of version 150, 300 or 450.
- The two carriages can be motorised on the transverse axis. This option allows the HPC DIGITAL PROCESS to automatically control the tool spacing in case of a two-torch installation.
- Tube cutting option.
- Remote beam.

Dimensions (in mm)

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<th>Model</th>
<th>A (mm)</th>
<th>B (mm)</th>
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*Essential PROTECT version
BEING PRESENT LOCALLY
MAKES US MORE AWARE GLOBALLY

Benefit from the Market Leader

CUSTOMER ASSISTANCE POLICY
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