

HAWX



Class-leading robustness and repeatability

High dynamic 5 Axis vertical machining centre with gantry modular design and expandable configuration.

The right combination of robustness and stability makes it ideal for high-speed milling and trimming operations on elements with complex three-dimensional shapes made of light alloys, polymers and resins or composite materials.

breton

EXCLUSIVE TECHNOLOGIES

Breton Hawx is optimised through the most advanced technologies to guarantee excellent performances.

Hi-speed milling



Monoblock



Box-in-box



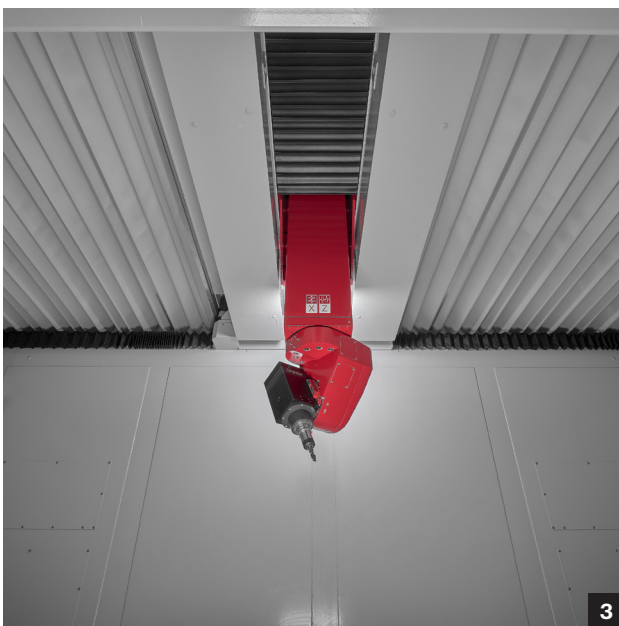
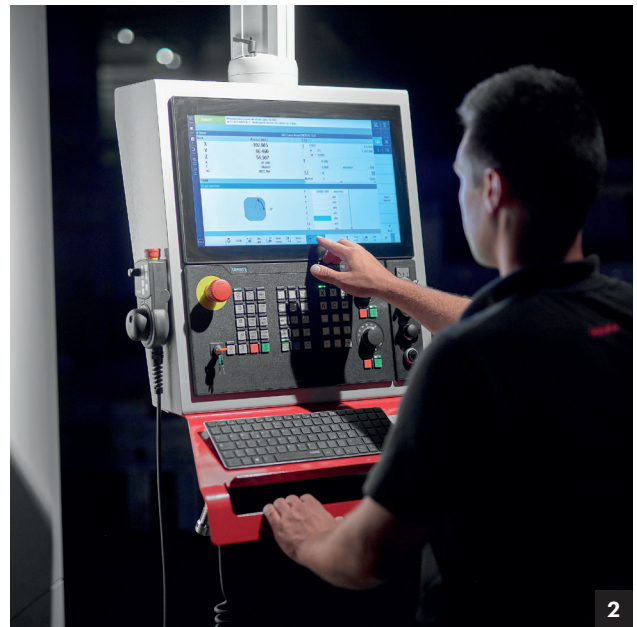
1. Unique orthogonal head design with double spindle axis offset, increasing degrees of accessibility to the workpiece and ensuring the highest level of rigidity and precision

3. Box-in-box architecture for increased rigidity of the bridge-RAM assembly

2. Latest generation Siemens Sinumerik One numerical control

4. Available in more than 4 different configurations of work-loading automations, including automatic pallet change

Scan the QR code to discover more



Breton Hawx

Designed to **overcome the common limits of this product category**: reduced robustness and poor repeatability over time.

Thanks to its optimised design, Breton Hawx is not only more rigid and stable but also guarantees an **excellent size-to-work area ratio**.

It is easily integrated into all production environments, it's delivered already assembled and tested; it does not require special foundations and has minimal commissioning times.

The **Hawx E1** is built using a **self-supporting monolithic structure**, which is one of the main characteristics of the machine, making it robust and enabling easy handling for delivery and installation.

The **Hawx E2** foresees a pre-assembled starting module made from a U-shape monoblock structure which is expandable longitudinally using one or more pre-arranged and calibrated extra U-shape supporting frames.

Both versions of the machine are built with a **box-in-box architecture** that guarantees a significant increase in rigidity of the bridge-ram assembly. The high strength, characteristic also of the new Hornet head, enables a remarkable increase in material removal performance and accuracy, all with the greatest dynamics.

The **innovative offset geometry of the head** allows for an outstanding increase of the machinable volumes while minimizing the external footprint of the machine and enabling a considerable accessibility to the workpiece on the undercuts.



5 reasons to choose Hawx

1 / Robustness and stability over time

The monolithic self-supporting structure and the bridge-RAM assembly with its box-in-box architecture have been designed to raise the **level of accuracy and repeatability over time** while maintaining high acceleration and speed. The result is the creation of a new, clearly superior benchmark in machining centres of this category.

Hornet, the head developed by Breton for this machining centre, is extremely rigid to guarantee greater accuracy on the most stress-sensitive part, even in the most demanding machining operations.

2 / Unbeatable footprint ratio

Up to 29% more working area for the same external dimensions.

Both versions of the HAWX are built with one-piece structures, calculated using FEM methodology to optimise structural strength with respect to weight and footprint. Thus, thanks to its ultra-compact design compared to its main competitors, Hawx guarantees greater workable volumes for the same area occupied. Essential to this was the integration of the mechanical parts and options in dedicated spaces within the supporting structure.

3 / Perfect for both wet and dry processing

Hawx is designed to be **able to work both wet and dry** to ensure proper handling of dust, chips and liquids generated during machining.

The axis guides are well protected by bellows, and the main drive components are pressurised so as not to be contaminated. The overhead bellows prevent dust from falling out of the working area and reaching the axes drives. The Z-axis ball screw is closed and well protected. In addition to the labyrinth, the head is also equipped with a V-ring scraper that provides complete protection when machining aggressive, abrasive materials or with coolant.

The tool store is outside the working area to keep the tools holder protected.

4 / Top-class security

Breton Hawx has a **double safety system** as standard, which also includes an emergency brake on the Z-axis to prevent the axis from falling. All servos and pneumatic actuators are controlled by valves and extra safety contacts.

The integration of top-class components allows operations to be performed with open guards, such as tool verification and workpiece checks with the spindle moving at low rpm, in complete safety. The **ECO collision avoidance system** prevents accidental collisions between components, not only in automatic cycles but also during JOG movements.

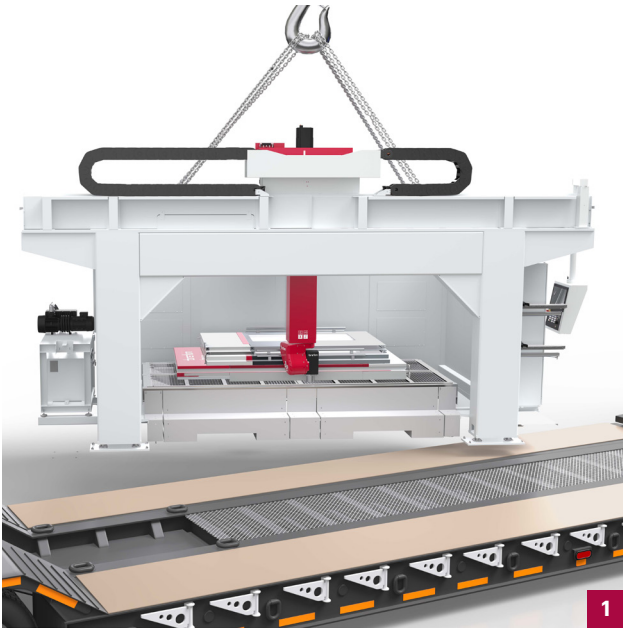
5/ Energy efficiency and reduced running costs

The goal is to maximise ROI, taking into account the entire life cycle of the machine.

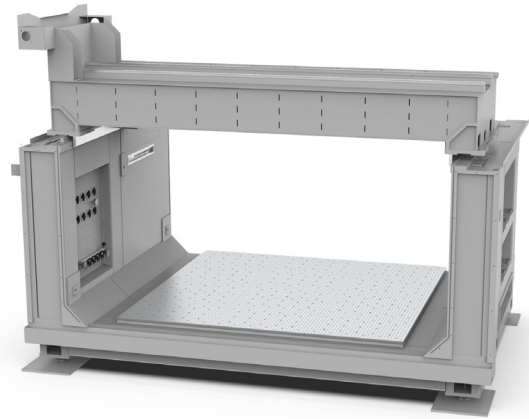
The use of IO-Link **low-consumption** modular system allows for simple and quick replacement or installation of additional sensors, thus **reducing service time and costs**.

Maintenance costs are reduced by using the VCS Rotary package, which automatically monitors and calibrates the machine.

Protection of servo drives by means of bellows and pressurisation increases reliability and extends the working life of the components, while for wet applications, the use of self-cleaning or consumable-free filter systems significantly reduces downtime and additional costs for filter replacement.



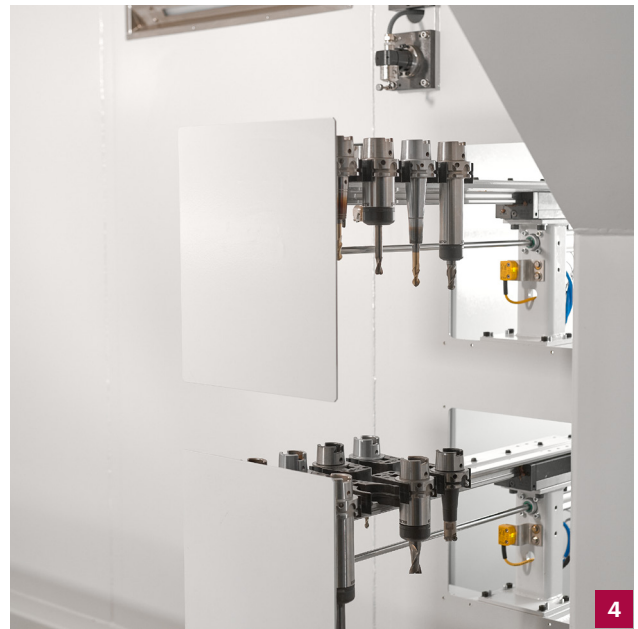
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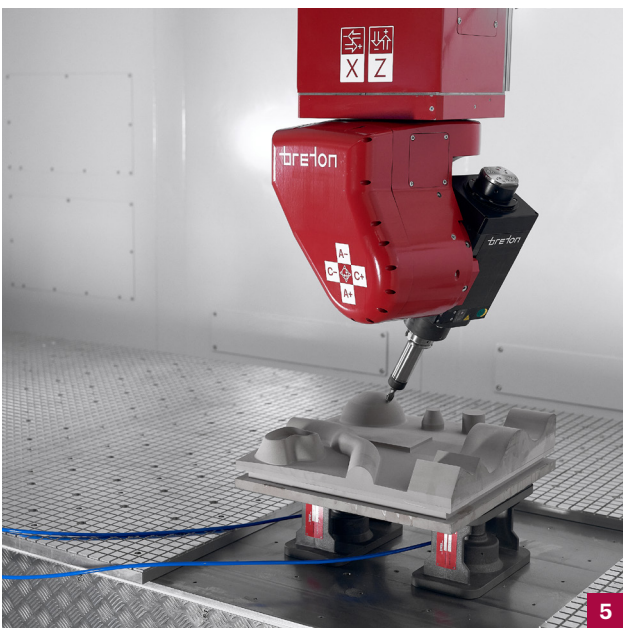
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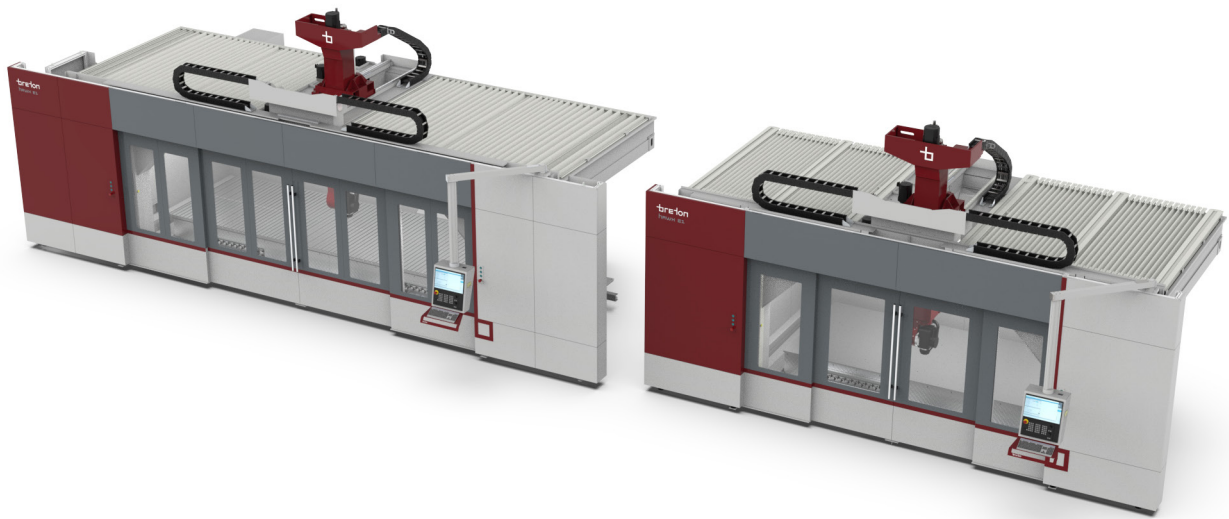


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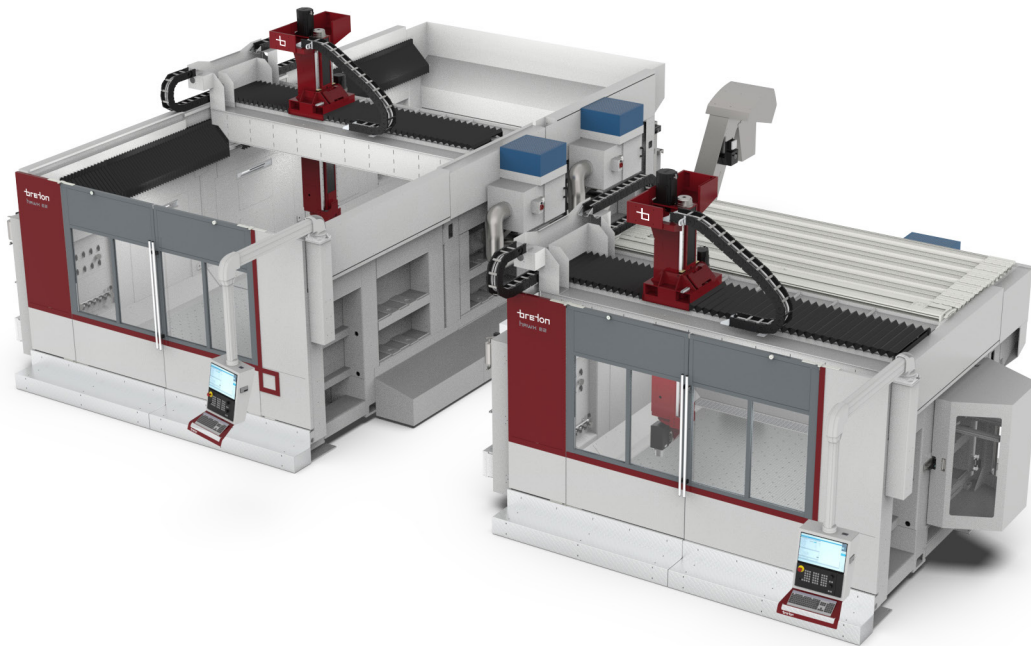


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1. Designed to be delivered already assembled
2. Self-supporting monobloc modular bases
3. Tidy and visible utilities to speed up checks and maintenance
4. External tool store, protected from dust and dirt and easily accessible by the operator
5. Different solutions are available for the work table set-up: mechanical clamping, modular vacuum grid or double-acting vacuum cups



	HAWX E1 K40	HAWX E1 K60
X-axis travel	4.000 mm	6.000 mm
Y-axis travel	1.900 mm	1.900 mm
Z-axis travel	1.300 mm	1.300 mm
X / Y / Z axis rapid speed	80 / 80 / 60 m/min	80 / 80 / 60 m/min
A-axis rotation	- 135 + 105°	- 135 + 105°
A-axis maximum speed	28 rpm	28 rpm
C-axis rotation	-270 + 270 °	-270 + 270 °
C-axis maximum speed	28 rpm	28 rpm
Spindle power S6 S1	18 15 - 25 21 kW	18 15 - 25 21 kW
Spindle torque S6 S1	14.3 12 - 20 18 Nm	14.3 12 - 20 18 Nm
Speed of rotation	18.000 - 24.000 rpm	18.000 - 24.000 rpm
Attachment type milling tool	HSK-A63 / HSK-F63	HSK-A63 / HSK-F63
Table size	1.750 x 3.800 mm	1.750 x 5.750 mm
Table capacity	500 kg/m ²	500 kg/m ²



HAWX E2 K18	HAWX E2 K38	HAWX E2 K58	HAWX E2 K78
1.800 mm	3.800 mm	5.800 mm	7.800 mm
2.700 mm	2.700 mm	2.700 mm	2.700 mm
1.300 mm	1.300 mm	1.300 mm	1.300 mm
70 / 70 / 60 m/min	70 / 70 / 60 m/min	70 / 70 / 60 m/min	70 / 70 / 60 m/min
- 135 + 105°	- 135 + 105°	- 135 + 105°	- 135 + 105°
28 rpm	28 rpm	28 rpm	28 rpm
-270 + 270 °	-270 + 270 °	-270 + 270 °	-270 + 270 °
28 rpm	28 rpm	28 rpm	28 rpm
18 15 - 25 21 kW	18 15 - 25 21 kW	18 15 - 25 21 kW	18 15 - 25 21 kW
14.3 12 - 20 18 Nm	14.3 12 - 20 18 Nm	14.3 12 - 20 18 Nm	14.3 12 - 20 18 Nm
18.000 - 24.000 rpm	18.000 - 24.000 rpm	18.000 - 24.000 rpm	18.000 - 24.000 rpm
HSK-A63 / HSK-F63	HSK-A63 / HSK-F63	HSK-A63 / HSK-F63	HSK-A63 / HSK-F63
2.700 x 2.550 mm	2.700 x 5.100 mm	2.700 x 7.200 mm	2.700 x 9.300 mm
500 kg/m ²	500 kg/m ²	500 kg/m ²	500 kg/m ²

Breton - a pioneer in the development of advanced technologies and materials - is an international group specialized in the design and production of state-of-the-art industrial machinery and plants.

Founded in 1963, Breton has established itself on the global market thanks to its trustworthiness and its philosophy of innovation combined with reliability. Over its history, it has registered more than 1700 patents, devoting the equivalent of around 5% of its turnover to research and development each year.



The Breton Institute of Technology, expression of Breton's DNA and pioneering attitude, is the department where new technologies are explored and created. Several teams devoted to research design and develop new sustainable materials and technologies for different industrial sectors.