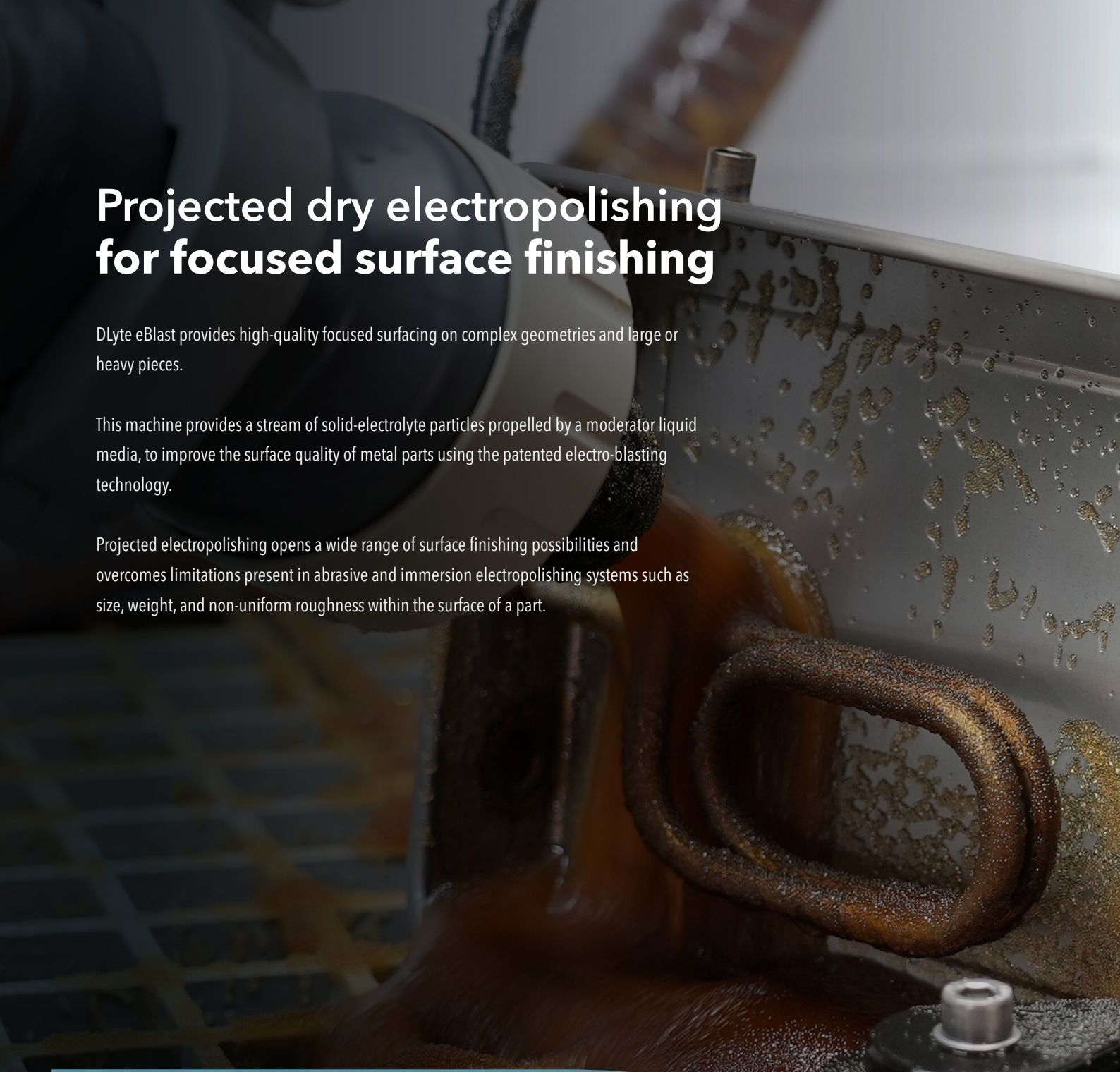
BrochureDLyteeBlast_V.3ENG_01/2024

DLyte eBlast

Electro Blasting
Surface Finishing

A brand of
GPAINNOVA



Projected dry electropolishing for focused surface finishing

DLyte eBlast provides high-quality focused surfacing on complex geometries and large or heavy pieces.

This machine provides a stream of solid-electrolyte particles propelled by a moderator liquid media, to improve the surface quality of metal parts using the patented electro-blasting technology.

Projected electropolishing opens a wide range of surface finishing possibilities and overcomes limitations present in abrasive and immersion electropolishing systems such as size, weight, and non-uniform roughness within the surface of a part.

Benefits

Both DryLyte and Electro-Blasting Technologies offer similar advantages, including:

- Consistent, homogeneous, and repeatable results
- Geometry preservation
- Improved bearing ratio and reduced friction
- Enhanced corrosion resistance
- Easy waste management, and safe for workers

The main benefits of the Electro-Blasting technology are:

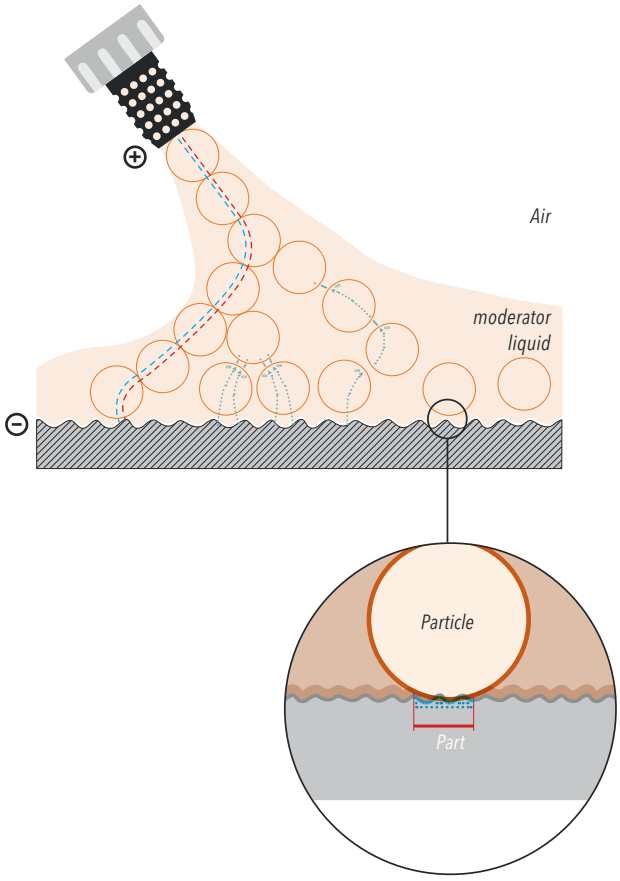
- Focused surfacing on targeted areas that require localized action, making it well-suited for complex parts or areas difficult to be treated.

- Treat the part without the need of motion, as needed with abrasive and inmersion electropolishing systems.

Electro-blasting process

Electro-Blasting is a process that smooths metal surfaces using a mixture of moderator liquid and solid polymer particles in an electrochemical reaction. The solid polymer particles act as conductors, transmitting current between the electrode and the metal surface. This triggers an electrochemical reaction at points of contact, eroding only rough peaks and creating a smooth, polished finish. The metal is removed as cations are trapped within the polymer matrix of the particles.

This moderator liquid is not directly involved in the surface finishing process. Its main function is carrying the particles; its specifically developed composition contributes to maintain the connectivity and conductivity between particles during the process. Additionally, this liquid creates a protective layer over the metal surface, accumulating especially in roughness valleys, thus protecting the surface from pitting.



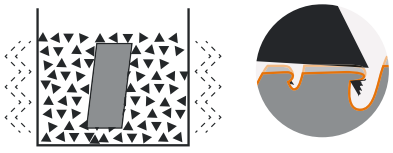
Electro-blasting vs DLyte immersion systems

The Electro-Blasting Technology differs from immersion-based DLyte systems,as in electro-blasting, the piece remains static, while the movement is applied in the electrolyte as it is projected.

Electro-blasting vs abrasive

Electro-blasting differs from abrasive blasting as it relies on electrochemical reactions, not high pressure, to remove surface roughness. This method only works on conductive surfaces, does not cause surface stress, scratches on smooth areas, or produce inclusions like abrasive blasting does.
Additionally, it offers a safer working environment as it doesn't produce dust, noise, or pose risks of breathing difficulties or rebounded abrasive injuries.

ABRASIVE FINISHING



+ Plastic deformation of roughness peaks
+ Inclusion of broken abrasive
+ No improved resistance to corrosion
+ Rounding of peaks and geometry harm

Integrated **robotic system**

The integration of an Omron collaborative robot (Cobot) enables continuos and uniform polishing of large and heavy pieces that can´t be treated with state-of-art automated polishing methods.

The Cobot allows to configurate repetitive and consistent movements for hours on large pieces which significantly reduces labor time and human error.

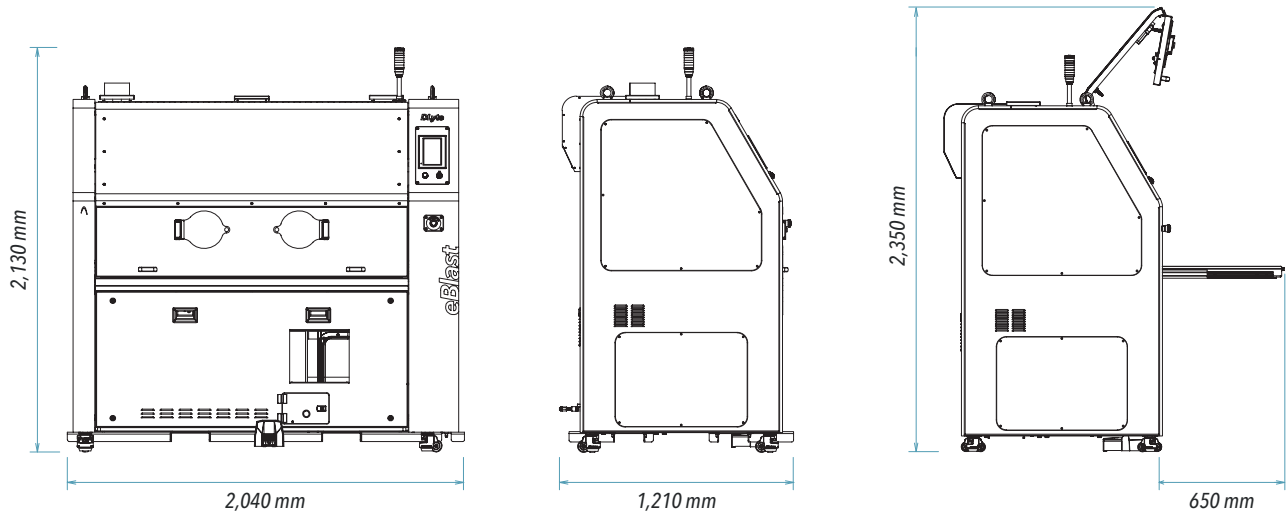
By setting up the Cobot's polishing path routine and the parameters once by product ensures an accurate, consistent finishing. Its focused projection polishing allows it to treat areas difficult to be polished such as internal corners.

The use of accessories as a mass finishing drum or rotative motor streamlines the polishing process for large volumes of small parts and complex geometries.

01. MACHINE SPECIFICATIONS

TECHNICAL DATA	MACHINE	Machine dimension	*2,040 x 1,210 x 2,130 mm*
		Window dimension	*1,450 x 600 mm*
		Machine weight	*900 kg*
	ELECTROLYTE	Electrolyte capacity	*90 l*
	PIECE CAPACITY	Piece volume	*1,000 x 500 x 500 mm*
		Piece weight	*200 kg*
	ELECTRIC	Rated power (P)	*3.5 KW*
		Rated voltage	*230 ± 10% Vac (P+N+PE)*
		Frequency	*50-60Hz*
		Full load current	*16 A*
		Power cord plug	*CETAC 32A*
	ELECTROLYSIS GUN	Electrolysis power	*0 - 120 VDC* *0 - 120 V ~ (symmetric)* *0 - 60 V ~ (asymmetric)*
		Electrolysis consumption	*0 - 60 A*
		Electrolyte pressure	*1 - 2 bar*
	AIR CONSUMPTION	Air pressure	*4 - 6 bar*
		Air flow consumption	*Min: 200 l/min* *Optimum: 400 l/min*
		Air tube	*Ø 10 mm*
	EXHAUST GAS	Exhaust gas hose	*Ø 130 mm*
		Air flow	*105 m3/h (X2)*
	OPERATING	Operating (environment)	*5 °C to 35 °C*
		Humidity	*30-70%*
		Noise	*<70 dB (A)*
	STORAGE	Machine storage	*-10 °C to +70 °C*
		Electrolyte storage	*5 °C to 40 °C (Check expiration date)*

02. TECHNICAL DRAW



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Powered by DryLyte® Technology

The patented DryLyte Technology, electrochemical polishing which uses active solid particles, is protected by patents owned by DryLyte S.L. GPAINNOVA owns the exclusive right to sell the DryLyte Technology, and only companies authorized by GPAINNOVA have the right to utilize or distribute the equipment and consumables using the DryLyte Technology.

This product is protected by one or more of the following patents and patent applications:
Patents https://www.gpainnova.com/patents

Founded in Barcelona in 2013 and settled in Sunrise (Florida, USA), Hong Kong and Shenzhen (Mainland China), GPAINNOVA specializes in surface finishing solutions for metal and alloy parts through DLyte.

The group designs, manufactures, and markets advanced surface finishing machinery, accessories, and consumables based on their patented dry electropolishing technology, DryLyte.

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