

EUROCOLD

| industrial | cleaning | solutions |

TermoVide

EXCELLENCE
IS NOT AN
ACCOMPLISHMENT.
IT IS A SPIRIT,
A NEVER-ENDING
PROCESS

卓越
并非
一种成就，
而是一种精神，
一个永无止境的过程。

劳伦斯·米勒 (Lawrence M. Miller)





COMPANY LOCATION
公司位置

Established in 1987 to produce cooling systems for ultrasonic cleaning plants, the company chose in 1992 to build on the knowledge it had acquired and its creativity to develop proprietary industrial cleaning solutions, such as its first PLURITANK ultrasonic cleaning line. But the real revolution came to be in 1995 with its first single-chamber cleaning system. In the following years, EUROCOLD honed and harnessed its skills and know-how, until in 2000 it developed the new TermoVide® line of single-chamber cleaning plants. Its goal was to reduce production costs, energy consumption and environmental

impact, while offering innovative solutions and processes capable of making the most of the machine and ensuring excellent results even on complex surfaces. The single-chamber line has been evolving ever since with new models and technologies, while keeping design and versatility into account. While developing the TermoVide® line, the company kept on working on other projects and between 1998 and 1999 it came up with the LAC line's first multilayer coating machine. The coating machine uses the Pluritank ultrasonic cleaning technology in the cleaning section and the dipping process in the coating

section, while lacquer curing is carried out in a continuous oven. The system was designed for batch coating of sun lenses, stock ophthalmic lenses and visors, and may work with any type of dipping lacquer. The coating line was completed in 2001 with the development of the stripping treatment unit. In 2006, the V80+ was conceived to complement the TermoVide® single-chamber line with entry-level machines featuring the same technology but easier to use. The ease of use of these units both in operation and processing is balanced by the advanced customization capabilities

of the "EU2000" series. The company moved to its current headquarter building in Tezze sul Brenta in 2008. The building is continuously modernized just like the production department and the shop machines, in line with the company's innovative spirit embodying its professional approach. The ISO 9001 accreditation achieved in 2010 certifies the organizational control of all enterprise processes and is a part of the company's path towards ensuring the confidence of its current and future clients. With its dynamic and future-oriented approach, EUROCOLD entered the Industry 4.0 world in 2013

by developing a dedicated and customizable software to be installed on all of its machines, therefore increasing their efficiency and uptime while also improving the quality of its remote assistance service (data collection and subsequent value analysis also allowed improving processes). In 2015, EUROCOLD created its biggest plant: the V1700. This member of the TermoVide® family is the largest of its kind to date, with its single chamber measuring 1,900×8,300×3,020 mm specifically developed to clean hydraulic cylinders. But excellence is a never ending process.

COMPANY OVERVIEW

公司概况

发端1987年，EUROCOLD致力于生产超声波清洗机冷却系统。1992年，得益于初期经营经验和活跃创意，EUROCOLD扩大探索领域，研发专有化工业清洁解决方案，包括首个PLURITANK超声波清洗生产线。1995年，公司再次研发出首款单腔清洗系统，真正的改革由此拉开序幕。接下来几年，EUROCOLD砥砺前行，不断磨练技能和专有技术。2000年，TermoVide®清洗生产线和TermoVide®单腔清洗系统等新产品横空出世。公司以降低生产成本和能耗，减轻对环境造成的影响为目标，

同时提供创新的解决方案和工艺，充分挖掘机器利用效率，确保对复杂曲面的应付自如。自此之后，新型号和新技术不断涌现，助力EUROCOLD单腔清洗生产线的创新演进和更新迭代，同时兼顾产品的设计和多功能性。研发TermoVide®清洗生产线的同时，公司也一直致力于其他产品的研发。1998年至1999年，EUROCOLD推出了LAC生产线的首台多层涂布机。该涂布机的清洗装置采用了Pluritank超声波清洗技术，在涂布上采用了浸渍工艺。

涂固化在连续式烘箱中完成。该系统专门为太阳镜镜片、眼科透镜和遮阳板的批量涂膜而设计，并可与任何类型的浸渍设备兼容。随着光阻剥离装置的成功研发，涂布生产线于2001年如期问世。2006年是V80+诞生之年，作为采用同一技术制造的入门级机器，V80+是TermoVide®单腔清洗线的得力助手。且更简单易用。但随着公司在EU2000系列产品上的高级定制能力也不断提升，此类装置的设计也变得日益复杂。

2008年，公司搬迁至其位于布伦塔河畔泰泽（Tezze sul Brenta）的总部大楼，也就是现在的总部所在地。生产车间和车间机器日益现代化，总部大楼亦是如此。与公司“通过创新精神体现专业性”的理念高度契合。2010年，EUROCOLD通过ISO 9001认证，有力证明了公司所有企业流程的组织控制能力，也增加了新老客户对公司的信心。秉承着充满活力和面向未来的企业精神，EUROCOLD于2013年步入工业4.0时代。

公司研发了一款专用定制软件，可安装在其生产的所有机器上，从而提升机器的工作效率和正常运行时间，并提高远程协助服务质量（数据收集和随后的价值分析也促使工艺不断得到精进）。2015年，EUROCOLD制造出有史以来的最大型设备：V1700。这款机器是迄今为止体积最大的TermoVide®系列产品，单腔尺寸达到1,900×8,300×3,020 mm，专门针对清洗机液压油缸开发制造。但卓越是一个永无止境的过程。

INNOVATION AND RESEARCH

Guided by a robust innovative spirit, Eurocold chose to differentiate its production by developing its technology and - above all - its vision in the industrial cleaning industry. To increase its process mastery and therefore always be able to react with increasing effectiveness to the needs of the market, every year the company invests major resources in R&D, both on new projects and staff training.

创新与研发

在强劲创新精神的驱使下，

EUROCOLD不断开发新技术，

更在工业清洗行业的愿意支持

下，实现了差异化生产。为了提高

对工艺流程的掌握程度，以有

能力更高效地针对市场的需求做出

反应，公司每年都在研发方面

投入大量资源，包括在新项目和

员工培训上的投入。

ENVIROMENTAL CARE

Eurocold pays utmost attention to protecting the environment: as such, optimizing the use of natural resources such as electricity, gas and water is one of R&D's primary goals.

环保

EUROCOLD极其重视环保：电、

气、水等资源的优化利用是公

司研发的首要目标之一。

CUSTOMER CARE AND SATISFACTION

The company is very attentive towards modern technologies that enable it to offer real time support.

But in Eurocold, it's the people that take care of it all. Clients deserve an expert, dynamic and professional team capable of readily addressing doubts or special requests with no digital receptionists, on-line tutorials or standard sentences: real people addressing real needs.

客户关怀与客户满意

EUROCOLD密切关注能够提供实时

支持的现代技术。

但在EUROCOLD，员工才是让企业

永葆活力的基础。经验丰富，

活力四射的专业团队。能够在

没有数字语音服务、在线教程或

客服标准用语的情况下，轻松解

决客户的疑问或特殊要求——真实

的人在真切地解决客户的真正需求。

THE ISO 9001 CERTIFICATION

Eurocold achieved the ISO 9001 certification to meet recognized international standards attesting the enterprise management quality. This includes monitoring all activities, to make sure the client's needs and desires are always met.

ISO9001认证

EUROCOLD荣获ISO9001认证，达到国

际公认标准，进一步证实了公司的

优越管理质量，包括对所有生产活

动的监控，以确保客户需求总是得

到满足。

THE TERMOVIDE® PROCESS

The ability to generate an idea and then to entirely design it and build it in-house as with all products means offering the clients "standard" industrial cleaning systems that may be partially customized to meet their needs, even when very specific. Offering advanced solutions to the requirements of even just one client is an excellent testimony to Eurocold's know-how.

TERMOVIDE®工艺

EUROCOLD的所有产品，历经想法萌

芽到诉诸实际设计，再到内部大规

模生产，强大的实力使得我们能够

为客户提供标准工业清洗系统，部

分系统可实现定制化，满足客户需

求，甚至是非常复杂的需求。

EUROCOLD能够根据客户需求（即使

只是单个客户的需求）提供先进的

解决方案，极大地证明了公司的技

术实力。

LOCAL MANUFACTURING, GLOBAL THINKING

In its over 30 years in business, the company continued extending its commercial presence, moving from a typically national customer base to the global market. 75% of its production is currently sold and distributed abroad.

本地化制造， 全球化思维

在30余年的经营中，EUROCOLD继续

深耕商业市场，从一开始主要为国

内客户服务，到进军全球市场。目

前，公司75%的产品都销往国际市场。

MISSION:
OUR
VALUES

企业使命：
实现公司
价值

OUR HISTORY, TRADITION, SOLUTIONS, SUCCESS

公司发展史、传统、
解决方案与成就

Eurocold is established by Antonio Scalco in 1987. The company begins its activity as a producer of cooling systems and heat pumps to be used mainly in industrial cleaning plants, then still using solvents.

1987年，安东尼奥·斯卡尔科创办Eurocold。成立之初，公司主要生产用于工业清洗设备的冷却系统和加热装置，此时都还在工厂使用。

1987

Eurocold decides to diversify its business focusing on the development of environment-friendly ultrasonic cleaning plants, using water-based detergents and lowering energy and water consumption.

Eurocold决定实现业务多元化，开发环保超声波清洗设备，使用水基洗涤剂，降低能源和水消耗量。

1991

The first PLURITANK ultrasonic cleaning plant is built.

首款PLURITANK超声波清洗设备诞生。

1992

Launch of the TermoVide® line prototype. Eurocold patents the TermoVide® cleaning process.

推出TermoVide®清洗生产线原型，申请TermoVide®清洗工艺专利。

1995

The first lens solid or graduated tinting semi-automatic machine is built for mass production in the optical segment. The first in-line ultrasonic cleaning plant with dipping and curing is built for the optical segment. The machine is designed for batch coating of sun lenses, stock ophthalmic lenses and visors.

第一台染色镜片或渐变色镜片半自动染色机诞生，实现了光学镜片的大批量生产。首款为光学镜片生产的带浸渍功能、固化功能的内嵌式超声波清洗设备问世，适用于太阳镜片、眼镜片、遮阳板的大规模生产。

1998

The first dipping and pre-curing semi-automatic machine for the ophthalmic segment is built.

首款用于眼科透镜的带浸渍功能和预固化功能的半自动机器诞生。

1999

Eurocold registers its second ThermoVide® patent.

EUROCOLD注册第二个ThermoVide®专利。

2000

Coating machines for the ophthalmic segment are completed, also introducing stripping machines.

完成眼科透镜涂布机的制造，引入光阻剥离设备。

2001

The first lens solid or graduated tinting semi-automatic machine for the ophthalmic segment is built.

首款用于眼科透镜的纯色镜片或渐变色镜片半自动染色机诞生。

2004

Eurocold standardizes the production of ThermoVide® machines and introduces basic V80+ models.

首款用于眼科透镜的纯色镜片或渐变色镜片半自动染色机诞生。

2006

The company moves to the larger headquarters in Tezze sul Brenta. The first in-line cleaning - dipping - pre curing machine for the ophthalmic segment is built.

公司总部搬迁至布伦塔河畔泰泽，实现规模升级。
首款用于眼科透镜的内嵌式清洗—浸渍—预固化设备面世。

2008

Eurocold is achieves the ISO 9001 certification.

EUROCOLD荣获
ISO9001认证。

2010

The first lens solid or graduated tinting automatic machine is built for mass production in the optical segment.

首款用于光学镜片批量生产的有色镜片或渐变色镜片超产线染色机面世。

2011

Cleaning machines are upgraded with an automatic pH adjustment system fitted on the discharge.

清洗装置安装pH值调节系统，清洗机升级。

2012

Eurocold upgrades all new machines with an intuitive and user-friendly HMI interface, upgrading the management software to make it Industry 4.0-ready.

EUROCOLD引入直观的、用户友好的人机界面，升级了所有新机器，管理软件也更新换代，为公司进入工业4.0时代打下基础。

2013

The company adopts an automatic magazine as well as a machine spare parts/components reordering system. Eurocold is granted the F GAS certification.

EUROCOLD引入料盒和机器零部件/备件自动订货系统，荣获温室气体（F-Gas）认证。

2015

KNOW-HOW ACCORDING TO EUROCOLD

Eurocold's philosophy springs directly from its DNA. Right from the start, the company's activities were characterized by its spirit, which sets it apart from the rest also thanks to the founder's versatility and desire to evolve. Eurocold's know-how is based on the combination between creativity, practicality and experience acquired in the cooling industry, and is what allowed the company to move from

cleaning plant component supplier to builder of machines that are unique on the market thanks to their thermodynamic management, sophisticated control systems and unique attention to design. Moreover, its choice to refrain from using solvents right from the start to adopt water-based detergents shows its inclination to follow individual paths also

in the quest for alternative solutions that may offer better performance and be more environment-friendly. Moreover, the company's thorough knowledge of the industry allows it to supply a few additional services, complementing its offer to the client with all materials, informed advice and therefore the best possible results.

EUROCOLD的企业理念与生俱来。

自成立伊始，企业精神就贯穿公司各项生产活动，造就了EUROCOLD的与众不同，当然创始人的多才多艺和强烈进步意愿亦功不可没。

在冷却行业磨练得到的创造力，

实用性和经验完美融合，EUROCOLD专有技术正积累于此。

先进的热力管理技术、成熟的控制

系统和对设计的高度重视，使得它得以从一个小小的清洗机部件供应商转型为市场上独一无二的机器制造商。除此之外，EUROCOLD从成立初始就避免使用溶剂，采用水基洗涤剂，体现了公司倾向于探索自己的道路的理念。同时也在寻找性能更佳也更环保的替代解决方案。

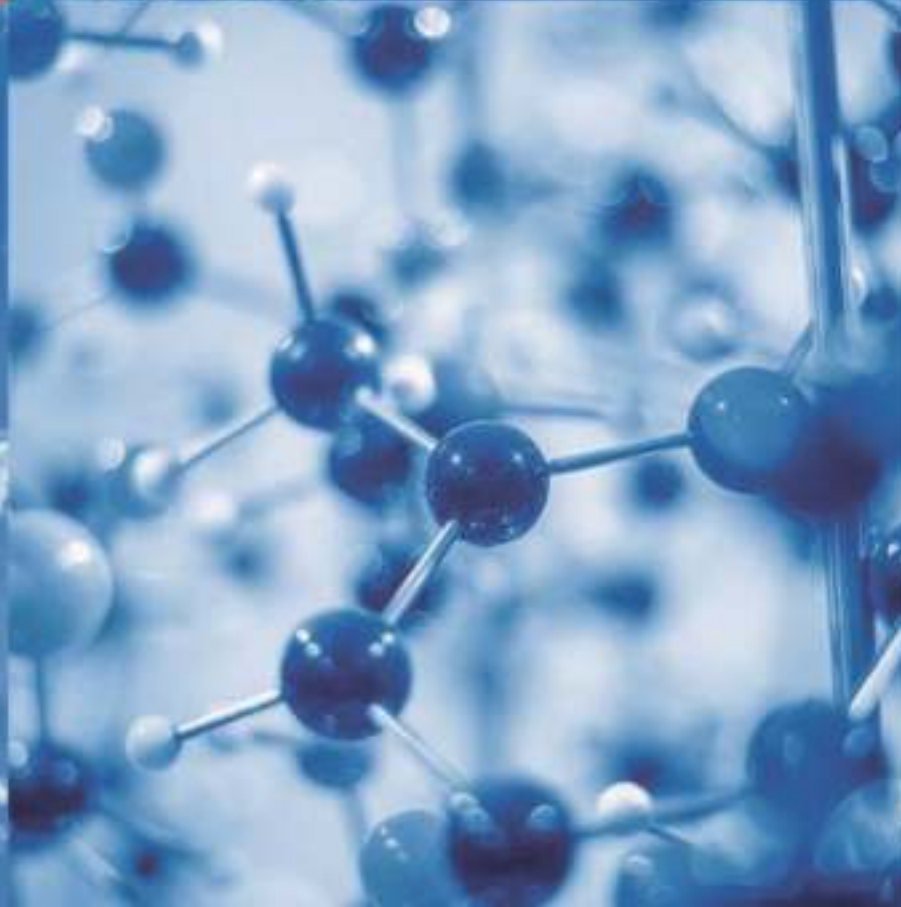
不仅如此，公司还掌握了全面的行业知识，不仅可以为客户提供所有材料、明智的建议和最大的效益，还可以提供一些额外的服务。

EUROCOLD 的专有技术

EUROCOLD

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CONTROL OF THE ELEMENTS

生产元素 控制

Having moved away from the inadequate performance and environmental unsuitability of solvents right from the start, Eurocold identified biodegradable detergents as a better alternative. But the real key to achieving its excellence goals is the use of natural elements. Our efficient machines that can manage and use the energy of water - for cleaning, of air - for drying and creating vacuum, of heat - for thermodynamic treatments, are our pride and allow us to offer you high quality and reliability standards. So you can turn your ideas into reality.

EUROCOLD从一开始就摆脱了溶剂性能不佳和污染环境的问题，认定生物可降解洗涤剂是更好的替代品。但实现其卓越目标的真正关键是自然元素的使用。

EUROCOLD的高效机器可以使用水能进行清洗，使用空气能进行干燥、产生真空，使用热能进行热力处理，这些都是EUROCOLD公司取得的骄人成绩，也使得我们能够为客户提供高质量且可靠的标准解决方案。

因此，客户的想法得以转化为现实。

All EUROCOLD machines are equipped with electronic supervision. The customizable software that fully controls all processing phases registers each individual process and highlights possible problems. This allows the client to analyse the whole corpus of gathered information, which is an important added value especially in processes requiring high precision standards,

such as the automotive or health care industry. Moreover, this management software allows Eurocold technicians to offer real-time remote assistance, wherever the machine is located in the world. This solution reduces machine downtime, therefore improving plant efficiency and productivity.

EUROCOLD生产的所有机器均配备有定制的电子监管软件，能够完全控制所有工艺阶段，它对每个单独的工艺进行记录，并突出显示可能会产生的问题，便于客户对收集到的全部信息进行分析，这是一个重要的附加价值，对汽车行业或医疗保健行业等具有高精度标准要求

的工艺来说尤其如此。另外，该管理软件使EUROCOLD的技术人员能够为客户提供实时远程协助，无论机器位于世界的哪个角落。该解决方案减少了机器停机时间，因此提高了清洗机的工作效率和生产力。

MACHINE CONTROL



机器控制



SINGLE-CHAMBER ULTRASONIC CLEANING

单腔超声波清洗机

TermoVide® is the name Eurocold chose for its single-chamber ultrasonic cleaning machines. The TermoVide® cleaning system, a result of the company's innovation and R&D policy, is protected by three international patents. With its single cleaning chamber, it can achieve excellent results, also when the characteristics, the geometry or the required quality level of the materials to be cleaned cannot be achieved using traditional ultrasonic cleaning plants. Besides innovation and performance, attention to constructive details and care for design are other features of the TermoVide® that helped raise the technical quality of industrial cleaning. Combining such vital elements in a single product, together with

the company's attitude to problem solving, allowed it to make a further step forward, consolidating the clients' confidence even more. The machine works with water-based detergents. TermoVide® machines are divided in two categories: one using a single detergent, the other one using two. Thanks to Eurocold's many years of experience, more than 200 TermoVide® machines are operating all over the world, while the testing lab supports clients in identifying the best possible machine version based on the product to be cleaned. The cleaning process is a sequence of several phases, from pre-cleaning to ultrasonic cleaning, from spray cleaning to rinsing with demineralized or hard water, from drying to the use of vacuum

EUROCOLD将其单腔超声波清洗机命名为TermoVide®清洗系统。该系统是公司创新和研发政策的结晶，受三项国际专利保护。单清洗腔的设计使产品性能和清洗效果达到最佳。当使用传统的超声波清洗设备进行操作无法满足清洗的材料特性、几何形状或要求的清洗质量水平时，TermoVide®清洗系统就成为了不二之选。

除了创新和产品性能，公司也十分注重在设计上体现创造性的细节和关怀，这也是TermoVide®清洗系统的特点，同时也有助于提高工业清洗的技术质量。

集众多重要元素于一个产品，再加

上公司解决问题的态度，公司继续向前大步迈进，进一步巩固了客户的信心。清洗机使用的是水基洗涤剂。

TermoVide®清洗系统分为两类：一类使用一种洗涤剂，另一类使用两种洗涤剂。凭借多年的经验积累，200余款TermoVide®清洗机被销往世界各地。EUROCOLD的测试实验室支持客户根据需要清洗的产品寻找最佳的机器版本。清洗过程分为几个阶段，从预清洗到超声波清洗，从喷淋清洗到用除盐水或硬水漂洗，从干燥到使用真空

and controlled atmospheres. The sequence of cleaning process phases may be customized. Process phases may be added or removed, as well as repeated several times. All process parameters used during each phase may be customized, such as cycle time, temperature, ultrasound power, ultrasound operating time, detergent to be used, controlled atmosphere, vacuum, etc. The machine is extremely flexible, thanks to the ease with which customized processes may be created and reused. TermoVide® can manage a cleaning process for each product without jeopardizing its productivity. Such a flexibility is impossible to achieve in average ultrasonic cleaning lines.

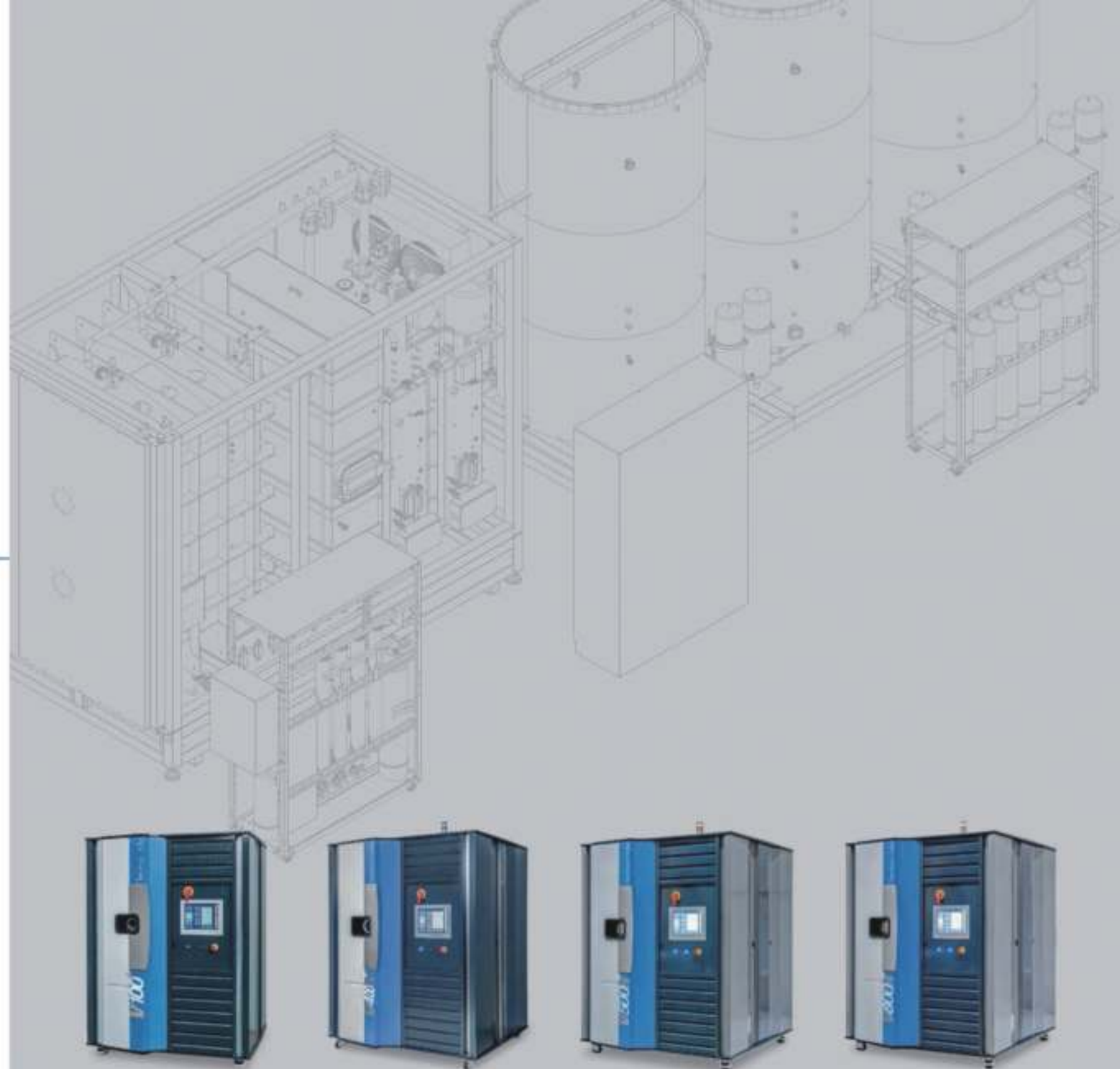
The machine's HMI interface and management software are intuitive and user friendly. The TermoVide® cleaning process can clean products from the residues of mechanical or chemical processing, cutting oils, dusts, etc., with better results than traditional ultrasonic cleaning lines. Thanks to its specific characteristics, TermoVide® thoroughly removes dirt, ensuring surfaces are clean and suitable for subsequent coating processes such as PVD, CVD, PCD, PECVD, PACVD, CHROMATION, CHROMIZATION, etc., or thermal treatments such as NITRIDING, CARBURIZING, NITROCARBURIZING, etc. The achievable vacuum level in the machine's sealed chamber ensures the perfect drying of products.

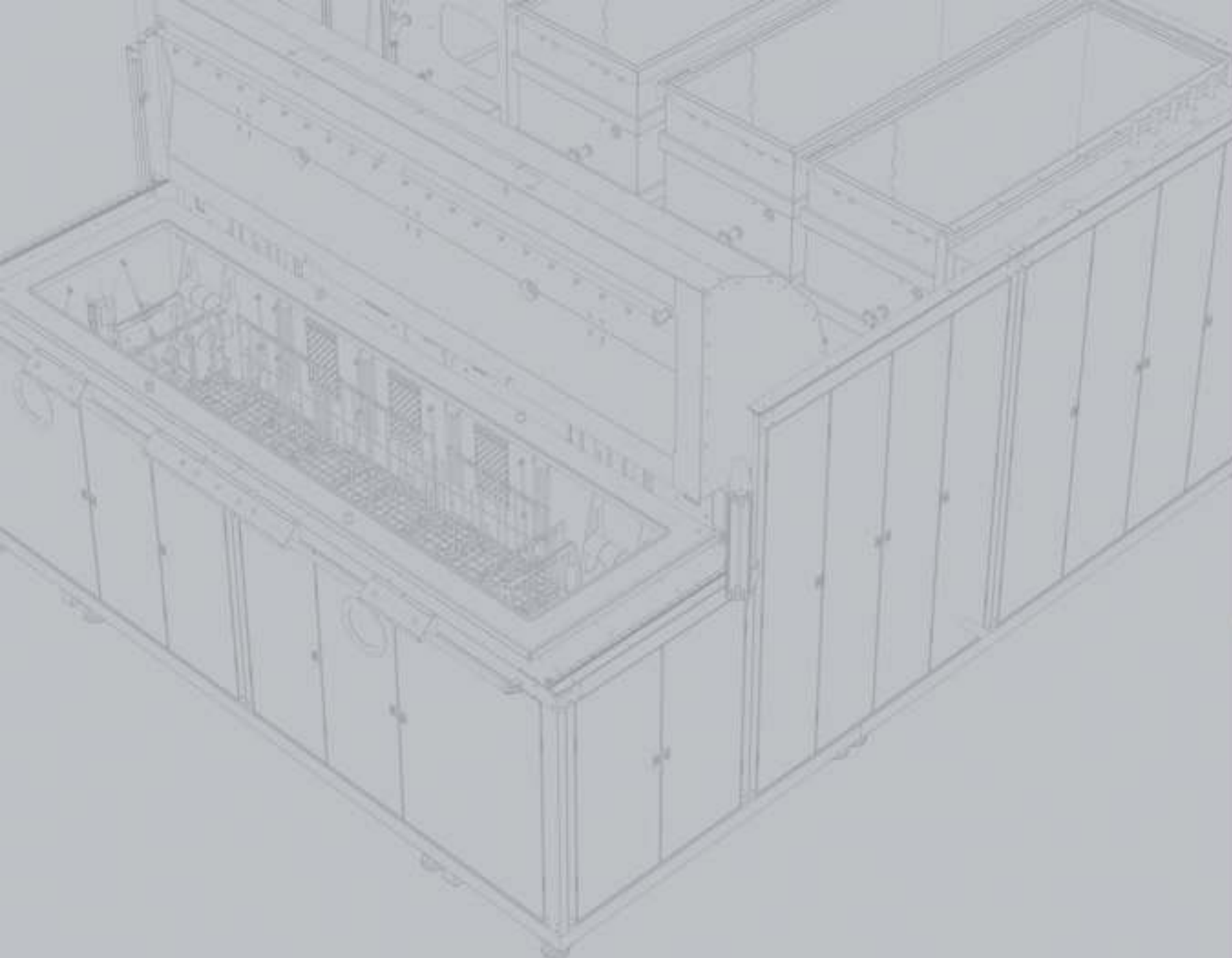
Water residues are thoroughly removed from corners, undercuts, holes, slots and all those areas that are particularly difficult to dry in the hot-air ovens installed in traditional ultrasonic cleaning machines. Vacuum drying is also particularly effective for high specific heat materials, also difficult to dry in traditional ultrasonic plants. Beside ensuring the internal atmosphere's cleanliness, the machine's sealed chamber also allows using controlled atmospheres, which can preserve many products from post-cleaning oxidation without chemical additives. The cleaning chamber's working volume in standard-version TermoVide® machines varies between 60 and 1000 litres, with a washable mass between 150 kg

和受控大气。清洗流程的顺序可定制，步骤可增加或去除，也可以重复数次。每个步骤使用的所有工艺参数均可进行定制，例如：循环时间、温度、超声功率、超声时间、欲使用的洗涤剂、受控大气、真空等。由于定制流程的创建和重复使用非常简单，因此，TermoVide®清洗机极具灵活性。TermoVide®清洗机可以管理每个产品的清洁流程，但不影响其生产力。普通超声波清洗线是不可能实现这样的灵活性的。

机器配备了直观的、用户友好的人机界面和管理软件。TermoVide®清洗机的清洗工艺可以清除产品中的机械或化学加工残留物、切削油、灰尘等，比传统的超声波清洗线效果更好。TermoVide®清洗机所具有的独特特性使其能彻底清除污垢，确保表面清洁且适合进行后续的涂层操作，如PVD、CVD、PCD、PECVD、PACVD、钝化处理等，或者热处理，如氮化、渗碳、软氮化等。机器密封腔内可达到的真空度保证了产品的完美干燥。

在传统超声波清洗机上安装的热风烘箱中，侧孔与侧凹、底边、孔、槽和所有那些特别难干燥的地方的残留水被彻底清除。传统超声波设备很难对高比热容材料进行干燥，而真空干燥在高比热容材料的干燥上就特别有效。除了确保内部大气的清洁，机器的密封腔也可使用受控大气，在没有化学添加剂的情况下防止许多产品在清洗后发生氧化。标准版TermoVide®清洗机清洗腔的工作容积变化范围为60升——1000升，清洗质量相应介于150kg





and 540 kg respectively. Made-to-order cleaning chamber constructions are in any case possible, with tailor-made shapes, volumes and capacity depending on the needs of the user. The chambers of some of the customized versions we have built have several thousand-litre volumes and can contain product lengths of a few metres. The largest one we built to date has a working volume of 47,000 litres and a working capacity of 5,800 kg.

Main features of the machine:

- front-loading with cart as standard; it may be customized with automatic loading systems
- built to work with one or more detergents, depending on process

- needs
- horizontal loading; customizable for vertical loading
- compact, easy-to-install (just a few hours) single-block machine, smaller footprint when compared to traditional ultrasonic cleaning machines
- available in standard or customized version
- can clean small (a few mm and grams) as well as large (some metres and tons) products
- environment-friendly machine, Industry 4.0-ready SW
- equipped with intuitive and user-friendly HMI
- only includes one sealed chamber, within which all cleaning process phases are carried out
- prevents the evaporation of cleaning and rinsing liquids,

- reducing direct and indirect electric energy consumption
- extends the duration of detergents by reducing their consumption
- uses controlled atmospheres when needed, both to increase cleaning phase efficiency and to prevent material oxidation without using chemical products
- uses steam during the rinsing phase to increase its efficiency, uses vacuum to increase drying efficiency
- cleans and dries difficult material such as those with high specific heat
- cleans and dries complex features such as holes, cavities and undercuts, also at low temperature, speeding up subsequent surface treatment processes.

至540kg之间。在任何情况下都可以根据用户的需求定制清洗腔结构，包括清洗腔形状、容量和生产能力的定制。一些定制版的清洗腔容量可达数千升，能够容纳长达数米的产品。迄今为止，我们制造的最大型的清洗机的工作容积为47000升，工作量为5800kg。

该清洗机的主要特点如下：

- 前置式手推车为标准特点，可根据客户要求定制自动载荷系统；
- 基于工艺需求，可使用一种或多种洗涤剂；

- 水平载荷，可定制垂直载荷；
- 结构紧凑，易于安装（仅需几个小时）单块清洗机，与传统超声波清洗机相比占地面积更小；
- 有标准版本或定制版本；
- 可清洗（长度为几毫米，重量为几克的）小型产品以及（长达数米，重量为吨的）大型产品；
- 环保，工业4.0 SW；
- 配置直观的、用户友好人机界面；
- 只设置一个密封腔，所有的清洗过程都在其中进行；
- 防止清洗液和漂洗液的蒸发；

- 降低直接和间接电能消耗；
- 通过降低洗涤剂的消耗来延长洗涤剂的使用时间；
- 需要时可使用受控大气，既可以提高清洗流程的效率，又可以在不使用化学产品的情况下防止材料氧化；
- 在漂洗阶段使用蒸汽，提高漂洗效率，使用真空提供干燥效率；
- 清洗、干燥较难清洗的材料，如高比热容材料；
- 清洗、干燥比较复杂的地方，如孔、空腔、侧孔与侧凹，在低温情况下加快后续的表面处理过程。



EUROCOLD



PLURITANK CLEANING TECHNOLOGY PLURITANK 清洗技术

EUROCOLD is also well known for its PLURITANK range of traditional in-line multi-tank ultrasonic cleaning plants. These machines are only built on the client's specifications and specifically designed for the product to be cleaned. The range is based on cleaning processes that use water-based

detergents. Processes are customized per product, while the operating parameters may also be customized for each individual tank. This system is designed to ultrasonically clean a wide range of materials, shapes and dimensions, and can remove dirt such as residues of mechanical or chemical

EUROCOLD也因其传统的PLURITANK系列内嵌式多水槽超声波清洗机而闻名。这类清洗机只按照客户提供的规格进行制造，针对待清洗的产品进行特别设计。PLURITANK系列清洗机基于使用水基洗涤剂的

清洗流程。每个产品的清洗流程都是定制的，每个水槽的运行参数也是定制的。该系统可对各种材料、形状和尺寸的产品进行超声波清洗，并可清除机械加工或化学加工的

processing, cutting oil, dusts, etc. The products to be cleaned are moved from a tank to the other with a dedicated basket and a two-axes robot. The number of tanks and the accessories in each of them vary based on machine design and the products to be cleaned. Only one cleaning process phase is carried out in each position/tank, and the time the product remains in each of them is the same. The processes in this cleaning line remove superficial dirt and ensure that the residual quantity of dirt, measured

as per ISO 16232 by means of electronic scanning microscopes, is reduced to a minimum and compatible with subsequent processes such as PVD, CVD, PECVD, CHROMATION, CHROMIZATION, etc.

The PLURITANK ultrasonic cleaning machine:

- consists of several tanks, in each of which only one phase of the cleaning process is carried out. The machine is built in multiple sections to facilitate transport and assembly work on site. Depending on type and size,

the installation and commissioning of the machine to make it production-ready may require up to two-three days.

- only on-demand versions are available
- can clean from a few mm and grams to several decimetres and kilograms of product
- is environment- friendly
- rinsing tanks are designed in cascade to minimize water consumption
- works with Industry 4.0-ready SW
- is equipped with an intuitive and user-friendly HMI interface

残留物、切削油、灰尘等污垢。

两轴机器人使用专用清洗篮将待清洗的产品从一个水槽移至另一个水槽。水槽的个数及其附件因机器设计和待清洗的产品不同而不同。每一个位置/水槽仅进行一个清洗步骤。产品在每个位置/水槽中的时间是相同的。

该清洗线的工艺清除产品表面污垢。

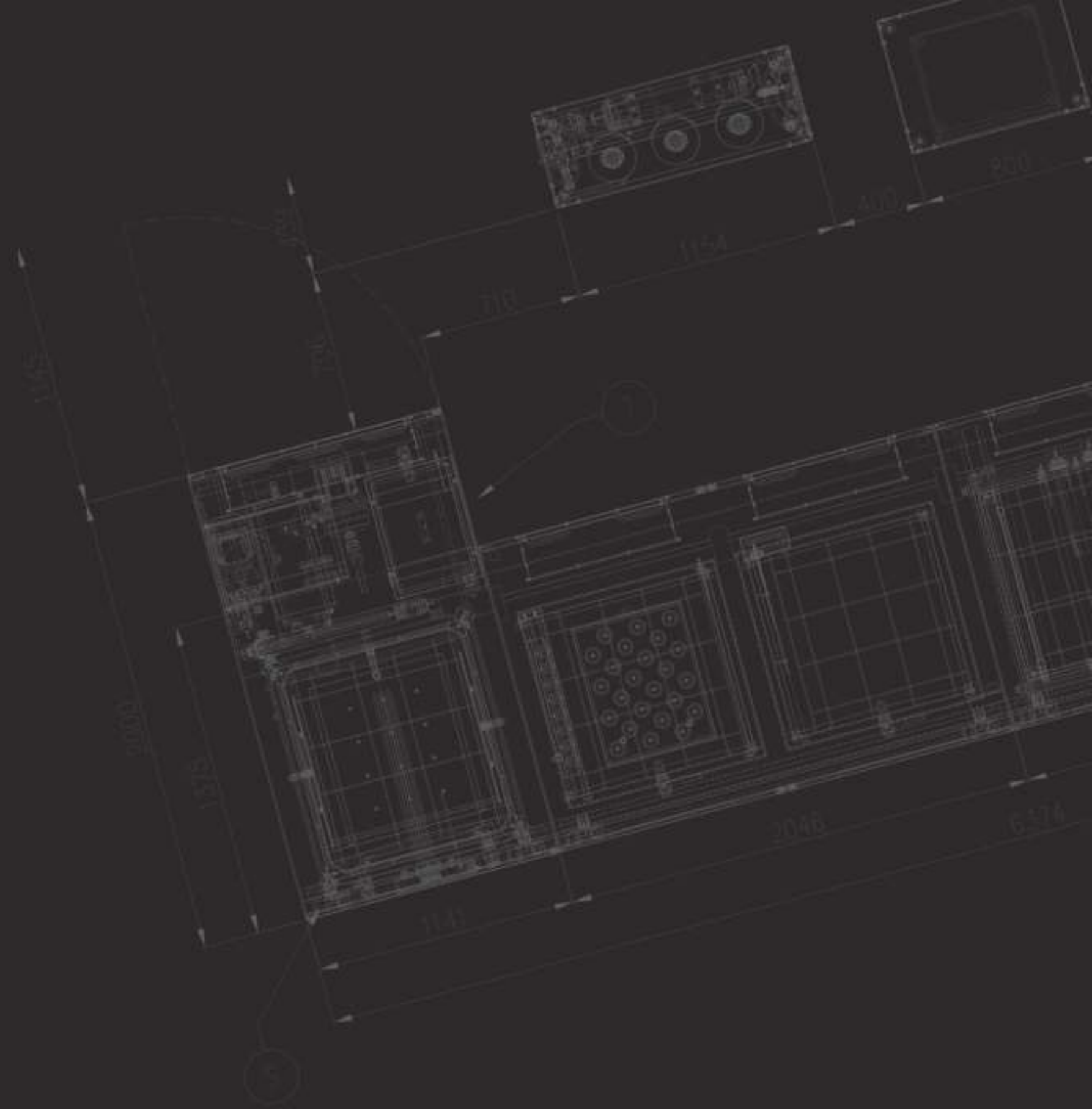
根据ISO16232通过电子扫描显微镜进行测量，确保污垢的残留量降低到最小，并与后续工艺兼容。例如：PVD、CVD、PECVD、铬化处理等。

PLURITANK超声波清洗机的特点如下：

- 由几个水槽组成，每个水槽内仅进行一个清洗步骤。清洗机设计为多个部分，便于现场运输和安装。基于机器类型和尺寸，

清洗机的安装和调试可能需要2 - 3天的时间，之后可投入生产：

- 只提供按需版本
- 可清洗长度短至几个毫米、重量低至几克的产品，也可清洗长达几分米、重达数千克重的产品；
- 环保；
- 漂洗槽采用梯级设计，以减少水的消耗；
- 可与工业4.0 SW设备共同工作；
- 配置直观的、用户友好的人机界面



The industrial spray cleaning machines in the HURRICANE line were designed to clean, rinse and dry metal or non-metal products machined on machine tools or processed by other means, with varying sizes, geometries and weight.

The HURRICANE industrial metal cleaning machine is compact and may be used for the final cleaning of the products, as well as to pre-clean them when they are particularly soiled and must be prepared for subsequent ultrasonic cleaning.

The cleaning process is carried out by means of a swirling jet of cleaning or rinsing solution, generated by a set of rotating nozzles located all around the

cleaning chamber. Drying is carried out by means of a hot air jet also swirling in the cleaning chamber. The products to be cleaned are manually loaded in suitable containers (baskets, frames or the like).

The container is then moved to the cleaning chamber.

All process phases, from cleaning to rinsing and drying, are carried out in said chamber.

The machine works with biodegradable water-based detergents.

The cleaning process is customizable and may include some or all of the following phases:

- cleaning with sprayed detergent
- spray rinsing with recirculation

water from the rinsing collection tank

- spray rinsing with mains water and corrosion inhibitor
- hot water drying

An intuitive control interface allows the operator to enable or disable each individual process phase as well as to customize its cycle duration.

The cleaning solution is used in a closed loop, circulated by a pump and stored in a dedicated tank. The cleaning solution is replaced manually as needed.

The industrial spray metal cleaning machines in the HURRICANE line are available in a standard version but may also be customized to the client's specification.

HURRICANE系列的工业喷淋清洗机设计用于清洗、漂洗、干燥在机床上或以其他方式加工的具有不同尺寸、几何形状和重量的金属产品或非金属产品。

HURRICANE系列工业金属清洗机结构紧凑，可用于产品的最终清洗，以及产品特别脏时进行预清洗，为后续的超声波清洗做准备。位于清洗腔四周的一组旋转喷嘴产生的清洗液或漂洗溶液的旋转射流

对产品进行清洗，热空气射流在清洗腔中旋转对产品进行干燥。

待清洗产品被人工装入合适的容器（清洗篮、架子或类似容器）中。

然后装待清洗产品的容器被移至清洗腔。所有的清洗步骤均在清洗腔中进行，从清洗到漂洗、干燥。该清洗机使用的是可降解的水基洗涤剂。

清洗过程是可定制的，可能包括部分或全部下列清洗步骤：

- 使用喷雾洗涤剂进行清洗；
- 使用冲洗水收集池中的循环水进行

喷淋冲洗；

- 使用自来水和阻蚀剂进行喷淋冲洗；
- 使用热水进行干燥

直观的控制界面使操作人员启用或禁用每个单独的流程步骤，并对持续时间进行定制。

清洗液的使用是闭环的，泵对其进行循环，清洗液储存在专用水槽中。按需对清洗液进行手动更换。

客户可购买HURRICANE系列工业喷淋金属清洗机的标准版本，公司也可按照客户规格进行定制。

INDUSTRIAL SPRAY CLEANING

工业喷淋 清洗



The lens tinting machines in the IRIDE line were developed to meet the needs of a leading lens producer.

These machines work with a water-soluble dye, either in dust or liquid form, and were designed for both solid and graduated tinting. The IRIDE LAB machines have a capacity of a few lens pair per tank, while the IRIDE MASS machines for mass production may process a few hundred lens per cycle.

The automatic versions can be interfaced with a PC. Each tinting tank is equipped with a lens lifting system capable of managing colour intensity, solid or graduated tinting, transition zone height and position, etc. Each process curve may be customized down to lens and material type.

The electromechanics of the lifting system ensure soft movements along the whole path, so as to prevent the creation of horizontal

lines.

The set temperature of the tinting solution is maintained down to degree precision, while its level is maintained constant down to millimetre precision.

The bath is continuously stirred to ensure the dye is uniformly distributed.

The service offered with the unit includes installation and both remote and on-site technical support.

IRIDE系列镜片染色机的成功研发满足了领先的镜片制造上的需求。

染色机使用粉末水溶性染料或液态水溶性染料，可用于纯色染色或渐变色染色。

IRIDE LAB染色机在每个染色池中可对数对镜片进行染色，而用于批量染色的IRIDE MASS染色机则可在每个染色周期中为数百对镜片进行染色。

自动版本的染色机可连接至电脑，每个染色池配置有镜片提放装置，能够控制颜色浓度、纯色染色或渐变色染色，过渡带高度和位置，等等。每套染色步骤曲线均可根据镜片类型和材料类型进行定制。镜片提放装置的电机原理确保了在整个提放过程中提放动作的轻柔，以避免镜片上留下横线。

染色溶液的温度设置保持在一定的精度，且液面高度保持恒定，精确到毫米。

染色池内保持连续搅拌，以确保染色均匀。

公司提供的服务包括染色机的安装以及远程和现场技术支持。

TINTING 染色



The dip-coating machines in the LAC line were developed in cooperation with leading companies from the lens and visor industry, and are built based on client demand. They are compatible with all product dipping lacquers currently available on the market, and were designed both for laboratories and for mass production. The LAC LAB machines have a capacity of a few dozens of lenses/hour, while the LAC MASS production machines may process a few thousand lenses per hour. Dip-coating machines are completely

automatic. The mass processing machines are equipped with an in-line curing oven, while lab machines are only equipped with pre-curing units. The dip-coating machine designed for labs was developed to be expandable and future-proof with no need for upgrading or replacement, while still minimizing energy consumption. The lab dip-coating unit's cleaning section adopts the TermoVide® single-chamber technology, while the mass-production unit uses the PLURITANK ultrasonic cleaning technology.

The lift-out control systems are operated using the IRIDE lifting systems technology. The dipping and lifting curve may be customized based on resin and, if required, lens type. The electromechanics of the lifting systems ensures soft movements along the whole set curve, so as to prevent the creation of horizontal lines. The service offered with the unit includes installation, consumable item supply, process installation support and both remote and on-site technical support.

LAC系列浸涂机是EUROCOLD与镜片与遮阳板行业内的龙头企业联合研发的，基于客户需求打造。LAC系列浸涂机与市面上现有的所有浸涂涂料兼容，可用于实验室试验或者批量生产。LAC LAB浸涂机每小时能涂布几十块镜片，而LAC MASS浸涂机每小时则能够数千块镜片。浸涂机是完全

全自动的。批量浸涂机配备有内嵌式固化炉，而实验室用浸涂机则仅配备有预固化装置。实验室用浸涂机是可扩展的，无需升级或更换，同时机器仍最大限度地降低能耗。实验室用浸涂机的清洗装置采用了TermoVide®单腔技术，批量浸涂机则采用PLURITANK超声波清洗技术。

提放控制系统采用IRIDE提放系统技术。浸涂曲线和提放曲线可根据树脂类型进行定制，如果需要的话也可根据镜片类型进行定制。提放装置的电机原理确保了沿设定曲线进行提放的动作的轻柔，以避免镜片上留下横线。

COATING 涂布



SOLUTIONS FOR YOUR BUSINESS

专为您公司
打造的
解决方案



OPTICS
(precision
lenses, sun
lenses, etc)

光学器件（精密
透镜、太阳镜等）



**WATCHES,
JEWELLER
FINE
MECHANICAL
PARTS, etc.**

手表、珠宝商的
精细机械部件等



**SURFACE
COATINGS**
such as PVD,
CVD, PECVD,
etc.

表面涂层。
例如PVD、CVD、
PECVD等



**TAPS and
FITTINGS**

龙头和配件



SEMICONDUCTORS

半导体



**MOULDS for
plastic casting
and die-casting**

塑料模具和
压铸模具



**SURFACE
TREATMENTS**
such as
chromation
nitriding,
carburizing, etc.

表面处理，如铬化
处理、渗氮处理、
渗碳处理等



**COOKING
UTENSILS,
COOKWARE,
CUTLERY,
CRYSTALWARE,
etc.**

厨房用具、
炊具、餐具、
水晶制品等。



**HEALTH CARE
ACCESSORIES**
such as
prosthetics
and various
utensils

医疗配件，
如假牙，
各种器具



**MECHANICAL
PROCESSES**

机械加工



**HANDLES
AND METAL
ACCESSORIES
for furniture
and doors**

家具和门的把
手、金属配件



**SPECTACLE
FRAMES**

眼镜框

EUROCOLD
38

WHERE WE ARE
A GROWING
NETWORK
全球
销售网络

155

OUR MACHINES
INSTALLED IN AMERICA
美洲

8

OUR MACHINES
INSTALLED IN AFRICA
非洲

612

OUR MACHINES
INSTALLED IN EUROPE
欧洲

73

OUR MACHINES
INSTALLED IN ASIA
亚洲

10

OUR MACHINES
INSTALLED IN OCEANIA
大洋洲

EUROCOLD S.R.L.

Via Fornace, 44/A
36056 Tezze sul Brenta
(Vicenza) Italy

Capitale Sociale € 78.000,00 i.v.
C.F./IVA/NAT/TVA (IT) 01337270282
T +39 (0424) 89088 r.a.
F +39 (0424) 219813

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UNI EN ISO9001:2015

sales@eurocold.eu
eurocold.eu

eurocold.eu