

SEALS

TECHNOLOGY



0223

Magazine for customers and partners | 客户杂志



TEST | CHECK | CERTIFY

Cyber Security

Explained: Piston Seals

SML Product News





EDITORIAL

Dear Readers,

just a few weeks more and we will look back on the first half of the year 2023. We kept the motivation from the beginning of the year and hope you did likewise, so that we both can recall some successful past months.

Apart from continuous efforts to keep our service level high and even improve it, we have asked ourselves during the last months: "How can we better support our clients in order to become more efficient and, as a consequence, successful and to strengthen their market position?" We are pleased to present some answers to this question in this issue of our *SEALS Technology*.

Obviously, the need for machined seals is rising further on, requiring constantly increasing production capacities. Purchasing a new machine or increasing manpower is basically not always the most economical measure and can also not be realized on short term. In our opinion, a significant increase of productivity can also be achieved by the sum of "smaller" steps. For this reason we have focused on such measures in this issue. Inside you will find information on quicker measurement of tool contours, on how to reduce machine downtimes during maintenance works or on more flexible machine setup in the course of serial production.

We have also published another article from our popular series *Explained* in this issue. This time we tried to explain the term piston seal in a for a layperson understandable way, but also provide a solid source of information for professionals.

Moreover, you will find an overview on various conformance and inspection certificates including the range of services from our Department of Quality Assurance and our laboratory, as well as some other topics.

This time it was of particular importance for me to take up the topic *Cyber Security* which is increasingly affecting all of us. Seal Maker has been dealing with this subject already for quite a while and we feel well supported by our own IT Department, but we also take advice from external experts. However, due to the rapid growth of global networking more new potential hazards are emerging, they will affect all of us and we will need to protect ourselves. We have asked an expert for advice and are pleased to present some of his answers and recommendations in this issue.

Finally, I hope you will enjoy reading the latest issue of our *SEALS Technology* and I will be happy if you find one or the other interesting or helpful article inside.

Yours,
Johann Glocknitzer

尊敬的读者，

再过几周，我们将回顾2023年上半年。我们从年初开始就保持着动力，希望您跟我们一样，让我们一起来回顾过去几个月的成功历程。

除了不断努力保持我们的高服务水平，甚至提高服务水平外，在过去的几个月里，我们还问自己：“我们如何才能更好地支持我们的客户，从而提高效率，取得成功，并加强客户的市场地位？”我们很高兴在本期 *SEALS Technology* 中为这个问题提供一些解答。

显然，车削密封件的需求进一步增加，需要不断提高生产能力。购买一台新机器或增加人力基本上并不总是最经济的措施，也不可能在短期内实现。在我们看来，生产力的显著提高也可以通过“较小”的步骤来实现。基于这个原因，我们把重点放在了这些措施上。

在本期杂志里，您可以找到关于更快地测量刀具轮廓、如何在维护工作中减少机器停机时间或在批量生产过程中更灵活地设置机器的信息。我们还在本期发表了另一篇来自我们热门系列的文章《解释》。这一次，我们试图以一种外行可以理解的方式解释活塞密封这一术语，同时也为专业人士提供了可靠的信息来源。

此外，本期杂志会介绍各种合规和检验证书的概述，包括我们质量保证部和实验室的服务范围，以及其他一些主题。本期期刊，我将特别提及的是讨论网络安全这一主题，它对我们大家的影响越来越大。Seal Maker已经处理这个问题很长一段时间了，我们的IT部门给予我们很大的支持，但我们也听取了外部专家的建议。然而，由于全球网络的快速发展，越来越多新的潜在危险正在出现，这将影响我们所有人，我们需要保护自己。我们已经向一位专家征求了意见，并很高兴介绍他在这个问题上的一些方案和建议。

最后，我希望您喜欢阅读我们最新一期的 *SEALS Technology*。我将深感荣幸，如果您能在里面找到一篇感兴趣或有帮助的文章，

您的
Johann Glocknitzer

Why to choose a Seal Maker System

Today's business world requires from companies effective and efficient solutions in order to face the challenges of competition. With the simple formula *Semi-finished product + Machine = Seal*, Seal Maker offers its business partners a perfectly coordinated system to enable modern and efficient seal production anywhere in the world.

当今的商业世界需要公司提供有效和高效的解决方案，以应对竞争者的挑战。根据“半成品+设备=密封件”的简单公式，Seal Maker为其业务合作伙伴提供了一套完美协调系统，使其能够在世界任何地方进行现代高效的密封生产。



One-Stop-Shop | As a One-Stop-Shop, the advantages offered to customers are obvious. Instead of dealing with different suppliers, business partners can address all inquiries directly to Seal Maker where they will have a competent contact person at hand, who is not only an expert in the field of seal production, but also in all sealing related procedures. Thus, not only time, but also money can be saved.

Cooperation & Sustainability | Seal Maker has always pursued a cooperation with its customers based on trust and mutual support. This is reflected both in the service provided by the sales department, as well as in continuous product developments.

As a medium-sized company, Seal Maker is able to meet the needs of both, small-scale companies and large corporations. Depending on the size of the organization, customers have different demands on flexibility, traceability and service.

Seal Maker offers perceptible solutions suitable to meet the demands of business partners. This means that expanding companies do not have to search continuously for new solutions, but that their existing portfolio can be adapted and expanded with the support of Seal Maker.

Inhouse Developments | Another important factor is the target-oriented product development. Thanks to the close cooperation between Seal Maker and its business partners improvements and innovations in the areas of machine and material development as well as in the area of software development can be obtained. Since all developments are technically sophisticated, Seal Maker ensures that customers will always be at the latest state-of-the-art.

Tailor-made Solutions | In addition, as a complete system provider, Seal Maker can offer its business partners tailor-made solutions for their individual needs on request – for materials, machines and sealing solutions.

一站式商店 | 作为一站式的商店，我们为客户提供的优势是显而易见的。我们的业务合作伙伴不必与不同的供应商打交道，而是可以直接通过Seal Maker解决所有问题，在Seal Maker客户将有一位称职的联系人，他不仅是密封生产领域的专家，而且也是所有密封相关程序的专家。因此，客户不仅可以节省时间，还可以节省金钱。

合作与可持续发展 | Seal Maker一直致力于在信任和相互支持的基础上与客户进行合作。这既反映在我们销售部门提供的服务中，也反映在持续的产品开发中。

作为一家中型公司，Seal Maker能够满足小型公司和大型公司的需求。根据组织的规模，客户对灵活性、可追溯性和服务有不同的要求。

我们提供可灵活调整的解决方案，适合满足我们业务合作伙伴的需求。这意味着，不断扩张的公司不必不断寻找新的解决方案，而是可以在Seal Maker的支持下调整和扩大现有的投资组合。

发展 | 另一个重要因素是有针对性的产品开发。由于Seal Maker及其业务合作伙伴之间的密切合作，可以在机器和材料开发领域以及软件开发领域实现改进和创新。由于我们所有的开发都运用最先进的技术，Seal Maker确保客户始终拥有最新的技术水平。

个性化的解决方案 | 此外，作为一家完整的系统提供商，Seal Maker可以根据业务合作伙伴的要求，为他们提供量身定制的解决方案，包括材料、机器和密封解决方案。

Cyber Security

In recent months, news and media headlines on the issue of *Cyber Security* have become more frequent all over the world. Statistics and forecasts of future business trends increasingly often use terms such as *Cyber Security* and *Information Security*.

Due to the highly explosive nature of the issue, *Cyber Security* has also become a central aspect of Seal Maker's business activities. After all, a cyber attack is not only a threat to the daily business of a company, but can also lead to a massive breach of trust by customers, suppliers and also the company's own employees in the event of data loss.

In order to provide a platform for this topic and to draw attention to its importance, this article shall explain some of the most common terms in the field of *Cyber Crime*.

近几个月来,世界各地关于网络安全问题的新闻和媒体头条越来越频繁。对未来商业趋势的统计和预测越来越多地使用网络安全和信息安全等术语。

由于该问题的高度爆炸性,网络安全也已成为Seal Maker商业活动的一个核心方面。毕竟,网络攻击不仅对公司的日常业务构成威胁,而且在数据丢失的情况下,还会导致客户、供应商以及公司员工的大规模失信。

为了就这一主题提供一个平台并引起人们对其重要性的关注,本文将解释网络犯罪领域中一些最常见的术语。

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- Approximately **3.7 million e-mails** are being sent every second, **over 60% of them are spam**

- Worldwide damage per hour caused by *Cyber Crime*: ~ **800,000 EUR**

- 每秒大约发送**370万**封电子邮件,其中**60%**以上是垃圾邮件。

- 网络犯罪造成的全球每小时损失: 约**800000**欧元。

However, the number of unreported incidents causing global damage due to *cyber attacks* is likely to be much higher.

Spam and *phishing* e-mails are and will continue to be one of the major threats for enterprises. Despite the daily dispatch and the flood of these types of e-mails, the number of active incidents is comparatively low thanks to measures such as antivirus programs, employee sensitization, e.g. Another vector of attack is *social engineering*. In this case data from people is spied on via social media channels. These data can be used to crack passwords, create fake profiles, etc. even in the business context.

然而,由于网络攻击而造成全球破坏的未报告事件数量可能要高得多。

垃圾邮件和网络钓鱼电子邮件现在是并将继续是企业面临的主要威胁之一。然而,尽管事故数量众多,但造成的平均损失相对较低。另一个攻击媒介是社交领域。人们的数据通过社交媒体渠道被监视。这些数据可以用于破解密码、创建伪造的配置文件等,也可以在业务环境中使用。

MOST COMMON TYPES OF ATTACKS

Man in the Middle

An online attack pattern in which the victim's system will be infiltrated by fraudulent systems, generated physically or logically by the attacker. This affects the interaction between the victim's system and the internet resource, such as a router. The goal can be, for example, to change payment information in order to redirect payments to incorrect accounts and thereby get hold of them.

Malware

The term malware describes harmful software. The aim may be to spy on data. Malware is the umbrella term for all cyber threats such as Trojans, viruses, etc.

Ransomware

Is a subtype of malware that describes malicious programs designed to restrict or completely prevent the use of a computer system or its data. In the case of encryption, ransom claims are often made afterwards.

Social Engineering

By means of personal manipulation fraudsters try to induce certain human behaviours aiming at the disclosure of confidential information, the purchase of a product or the release of financial funds. However, social engineering can also mean the exploitation of freely accessible information – for example, from social media postings, which can be used to derive passwords, etc.

CHECK-BOX: SECURITY

- Use strong passwords
- Use 2-factor authentication
- Handling e-mails:
 - Do we know the originator/sender?
 - Is the content reasonable?
 - Is the e-mail address really correct?
- Conducting safety training for employees
- Keep systems up-to-date
- Prepare for an emergency
- Be cautious! Be sceptical!



INTERVIEW WITH AN IT PROFESSIONAL

But how do you protect yourself from this threat? An interview with an IT professional provides insights.

You have been dealing with the IT industry for quite a long time and observed a variety of developments in this area. What is your opinion concerning the evolution of the global cyber threat?

The risk is real and should not be underestimated. An increase in cyber crimes has already been observed for several years. The Covid-19 pandemic and the accompanying rapid increase of work-from-home, but also the current global political situation are further launching this trend. International media are increasingly reporting on cyber attacks encrypting or stealing data from companies.

What do you think is the biggest threat to cyber security?

Statistically, unfortunately the greatest risk potential of a company's cyber security is its employees. More than 60% of worldwide e-mail traffic is spam and phishing. By only one wrong click, especially when your system or firewall has not been recently updated, a mistake can happen very quickly.

Social engineering or deep fake are also topics targeted on people trying to get entry into a company network.

The danger of a masked man on a notebook hacking into a company network, as you might know from movies, is possible but statistically relatively low. This is due to the fact that such attacks usually require a lot of time and the expected result should be worthwhile the effort.

Spam and phishing e-mails are basically nothing new. Why do you think the hazard in this area is increasing?

Until a few years ago, fake e-mails, SMS or web pages were relatively easy to discover. This was due to poor textings, misspellings and similar shortcomings. However, when it comes to professionalism, fraudsters have really caught up a lot. I keep watching phishing e-mails, which have been written at such a high level that at first glance you can no longer tell whether it is a fraudulent or a serious message. If employees act in good faith and click on such a message or follow its instructions, the company will have to react quickly.

How can companies protect themselves, what do you recommend?

I think the easiest thing to do is to make sure that the firewall and all other systems and programs are always up-to-date. Updates are the most important thing for cyber security.

Furthermore, it is important to reduce the risk potential by the human factor wherever possible. In addition to mandatory annual safety briefings on occupational health and safety, it is also recommended to implement cyber security trainings. As a result, the issue remains in the back of people's minds and they know how to react optimally in the case of cases.

You can also actively reduce spam and phishing e-mails in the company by using so-called blacklists. These blacklists are linked to the mail server and automatically block incoming messages from mail servers that are used with fraudulent intent. A mail server will be listed when it has been used by fraudsters, for example, to send spam mails. Since fraudsters also connect with well-known mail servers such as those from Microsoft, which as a consequence may be blacklisted temporarily, this might not be the easiest way, but yet, it is another move in the IT security wall.

These are simple security measures that each of us can implement with comparatively little effort. Any further steps to increase cyber security, starting with incident response plans or recovery procedures, would exceed this interview framework. At the end I would like to quote Benjamin Franklin – "By failing to prepare, you are preparing to fail." The worst thing concerning IT security is to ignore the issue.

但你如何保护自己免受这种威胁呢? Seal Maker IT专业人士的访谈提供了见解。

您与IT行业打交道已经很长时间了，并观察到了该领域的各种发展。您对全球网络威胁的演变有什么看法？

风险是真实存在的，不应低估。几年来，人们已经观察到网络犯罪的增加。新冠肺炎的流行以及随之而来的家庭办公工作的迅速增加，也正是当前全球政治形势进一步引发了这一趋势。国际媒体越来越多地报道加密或窃取公司数据的网络攻击。

你认为网络安全面临的最大的威胁是什么？

从统计数据来看，不幸的是，公司网络安全的最大潜在风险是其员工。全球60%以上的电子邮件流量是垃圾邮件和网络钓鱼。只需一次错误的点击，尤其是当您的系统或防火墙最近没有更新时，错误可能会很快发生。

社会工程或深度造假也是针对试图进入公司网络的人的话题。你可能从电影中知道，一个戴着口罩的人在笔记本电脑上入侵公司网络的危险是可能的，但从统计数据来看相对较低。这是因为这样的攻击通常需要大量的时间，预期的结果应该值得付出相应的时间代价。

垃圾邮件和网络钓鱼电子邮件基本上并不是什么新鲜事。为什么你认为这个领域的危险在增加？

直到几年前，伪造的电子邮件、短信或网页还相对容易被发现。这是由于糟糕的文本、拼写错误和类似的缺点造成的。然而目前，当涉及到专业性时，欺诈者确实进步了很多。我一直在看钓鱼电子邮件，这些电子邮件写得太高明了，乍一看，你很难辨别这是一条欺诈信息还是一条严重的信息。如果员工信以为真地点击此类消息或按照其指示行事，公司将不得不迅速做出反应。

公司如何保护自己，你有什么建议？

我认为最简单的方法是确保防火墙和所有其他系统和程序始终是最新的。保持更新是网络安全最重要的事情。

此外，重要的是尽可能减少人为因素带来的潜在风险。除了强制性的职业健康和年度安全简报外，Seal Maker还实施了网络安全培训。因此，我们的员工时刻保持警惕，他们知道如何在发生案件时做出最佳反应。

我们通过使用所谓的黑名单，积极减少公司中的垃圾邮件和网络钓鱼电子邮件。这些黑名单链接到邮件服务器，并自动阻止来自邮件服务器的带有欺诈意图的传入消息。例如，当欺诈者使用邮件服务器发送垃圾邮件时，邮件服务器就会被列出。由于欺诈者还与微软等知名邮件服务器连接，因此这些服务器可能会被暂时列入黑名单，这可能不是最简单的方法，但这是IT安全墙中的重要一环。

这些简单的网络安全措施，我们每个人实施起来都毫不费力。任何进一步加强网络安全的措施，从事件响应计划或恢复程序运行，这里就不进一步展开了。我想引用本杰明·富兰克林的话：“没有做好准备，你就是在准备失败。网络安全问题最糟糕的情况就是忽视网络安全问题。”

“By failing to prepare, you are preparing to fail.”

Benjamin Franklin

Explained:

FUNCTION OF PISTONS

The piston is a dynamic component performing linear movements within the cylinder tube. If a force is applied to the piston side, it will move within this cylinder tube. The force which acts on the piston-surface is called pressure.

This pneumatic or hydraulic pressure is used to move components that are connected to the cylinder, such as a loading dock of a truck, an excavator bucket or a press punch. This principle is used for the operation of various machines and plants.

The piston in the cylinder is usually fitted with one or more seals to ensure that the force generated is specifically transformed into linear motion. The selection of the right piston seal and its proper function is therefore also crucial to the efficiency and the cylinder life.

FUNCTION OF PISTON SEALS

The function of a piston seal is to seal the individual (pressure) chambers of a cylinder against each other. Thus, the seal prevents the accidental passage of liquids, gases or other media from one area to another.

Due to the functionality and the operation range of a cylinder, so-called single-acting or double-acting piston seals will be used. If the piston is pressurized from only one side, a single-acting piston seal is required. Double-acting piston seals (or 2 single-acting), on the other hand, are used when pressure is to be applied on both sides of the piston.

In simple terms, single-acting piston seals will be used for simple functions in one direction (e.g. in the case of a lifting jack). If movements in two directions have to be carried out, then a double-acting seal is required (e.g. cylinders for excavator buckets).

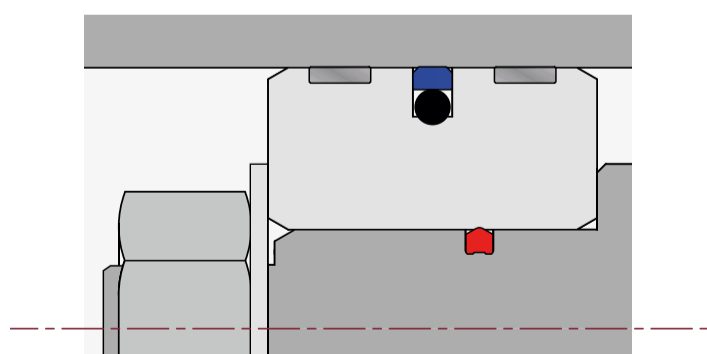
MATERIALS

Piston seals can be made from a variety of materials such as thermoplastic polyurethanes, elastomers, plastomers, metal or a combination of these materials. The material choice depends on the requirements of the seal, such as the type of fluid or gas, the pressure, the linear speed and the temperature to which the seal is exposed to.

DESIGN & FEATURES

The design of the piston seal has a significant influence on the service life and, above all, on the function of a cylinder.

When piston seals are used, guide rings will also be implemented to prevent metallic contact between the piston and the cylinder tube. The use of improper guide rings may lead to limited operation, and as a consequence to massive damage.



double-acting: BWR01, PS08

The table provides an overview of the typical examples of single-acting and double-acting piston seals, as well as the functional features of the profiles.

活塞的功能

活塞是一个在气缸管内进行线性运动的动态部件。如果向活塞侧施加力，它将在该气缸管内移动。作用在活塞上的力称为压力。该气压或液压用于移动连接到气缸的部件，例如卡车的装载台、挖掘机铲斗或冲压机。这一原理用于各种机器和设备操作。气缸中的活塞通常配有一个或多个密封件，以确保产生的力专门转化为线性运动。因此，选择正确的活塞密封件及其正确的功能对气缸效率和气缸寿命至关重要。

活塞密封的功能

活塞密封的作用是使气缸的各个（压力）室间相互作用。密封件可以防止液体、气体或其他介质从一个区域流通到另一个区域。根据气缸的功能和工作范围，将会运用到单作用活塞密封和双作用活塞密封。如果活塞仅从一侧加压，则需要单作用活塞密封。当要在活塞的两侧施加压力时就要使用双作用活塞密封（或2个单作用活塞密封）。简单地说，单作用活塞密封将用于一个方向上的简单功能（例如，在千斤顶的情况下）。如果必须在两个方向上移动，则需要双作用活塞密封（例如挖掘机铲斗的油缸）。

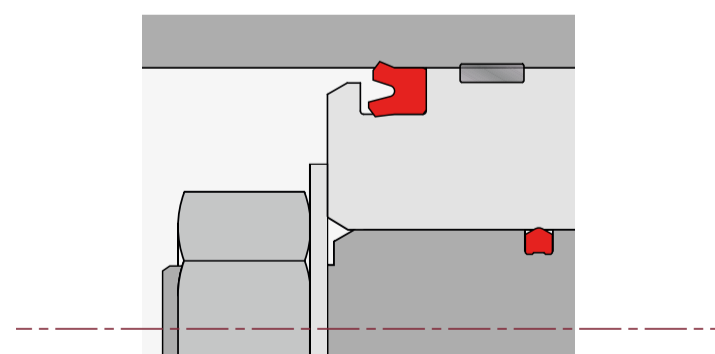
原材料

活塞密封件可以由多种材料制成，例如热塑性聚氨酯、弹性体、塑性体、金属或这些材料的组合。材料的选择取决于密封件的要求，例如流体或气体的类型、压力、线速度和密封件所处的环境温度。

设计与功能

活塞密封的设计对气缸的使用寿命有着重要影响，尤其是对气缸的功能影响很大。

当使用活塞密封件时，还将安装导向环，以防止活塞和气缸管之间的金属接触。使用不当的导向环可能会导致操作受限，并导致严重损坏。









single-acting: BWR01, PS01

下表概述了单作用和双作用活塞密封的典型示例，以及功能特征。

Piston Seals

SINGLE-ACTING

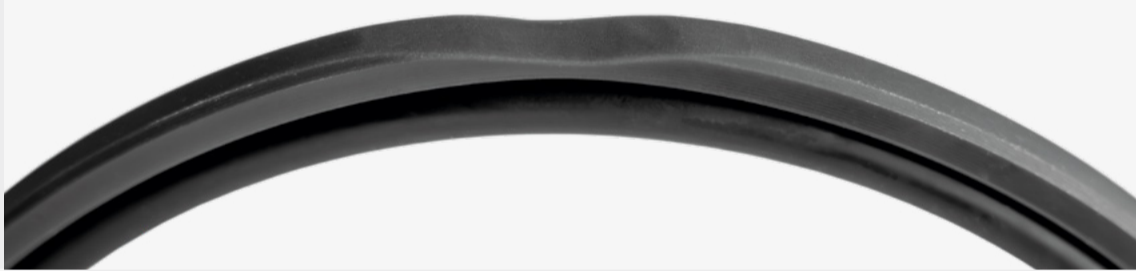
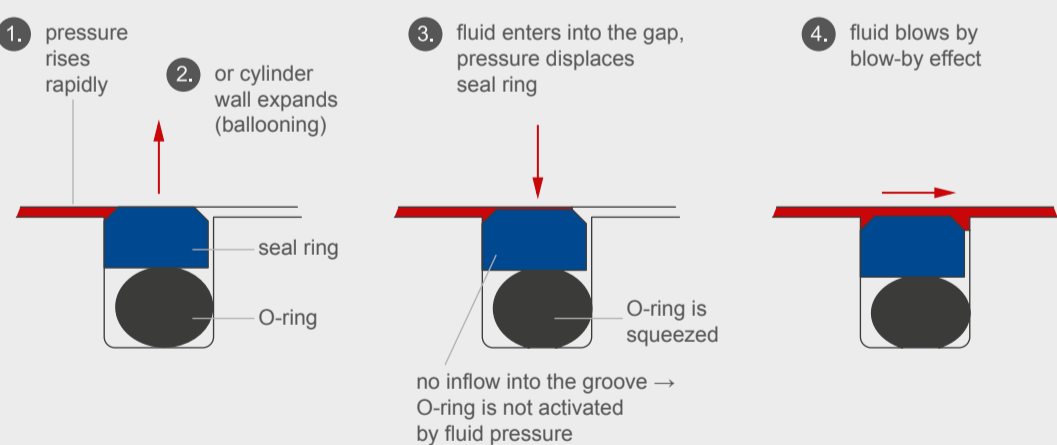

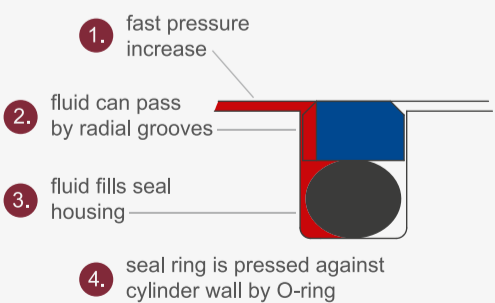
DOUBLE-ACTING

	PS01	PS02A	PS03	PS08	P54A	PS35
						
Special Features of the Profile	All-rounder	Including back-up ring	Including energizer element	2-piece seal consisting of a slide ring and O-ring as energizer element	4-piece mining seal with integrated guide rings	Compact single seal design
Usage / property	Excellent sealing effect for a wide range of applications	Use with larger extrusion gap and higher pressure range	Excellent sealing effect at low or non-existent system pressure	Excellent sealing effect for a wide range of applications, even at high speeds	Excellent sealing effect at high and static system pressure	As a replacement of an O-ring, for static applications or at low speeds, easy assembly

SOLVE DEFECTS



BLOW BY EFFECT

Faulty seals 瑕疵密封件	Improper handling or failure to observe instruction details may also lead to early seal failures.		处理不当或未遵守使用说明也可能导致密封件过早失效。	
Source of error 错误来源	Rapid single-sided pressure build-up, which leads to an inconsistent pressure distribution in the installation space and results in a vertical compression of the seal. The pressure medium "overblows" the seal and the sealing function will fail.	<ol style="list-style-type: none"> 1. pressure rises rapidly 2. or cylinder wall expands (ballooning) 3. fluid enters into the gap, pressure displaces seal ring 4. fluid blows by blow-by effect  <p>no inflow into the groove → O-ring is not activated by fluid pressure</p>	快速的单面压力积聚，导致安装空间中的压力分布不一致，并导致密封件的垂直压缩。压力介质“过流”密封，密封功能将失效。	
Solution 解决方案	Notches in the sealing element will ensure an even distribution of the medium.		<ol style="list-style-type: none"> 1. fast pressure increase 2. fluid can pass by radial grooves 3. fluid fills seal housing 4. seal ring is pressed against cylinder wall by O-ring 	密封元件中的凹口将确保介质的均匀分布。



Test, check, certify

The importance of quality certificates and confirmations is evident in almost every industrial area. Thus, a reliable quality assurance is the basis for consistently high product quality. The employees in the *Quality Assurance Department* have many years of experience and extensive expertise of all relevant testing procedures. They are responsible for testing and documenting on the general product quality. As Seal Maker wants to offer business partners a comprehensive service, the *Department of Materials and Process Engineering* are working hand in hand together with the *Quality Assurance*.

质量证书和确认书的重要性在几乎每个工业领域都是必不可少的。因此，可靠的质量保证是持续高质量产品的基础。质量保证部的员工在所有相关测试程序方面拥有多年的经验和丰富的专业知识。他们负责测试和记录产品质量。我们材料部和工程部正与质量保证部携手合作，Seal Maker希望能为业务合作伙伴提供全面的服务。



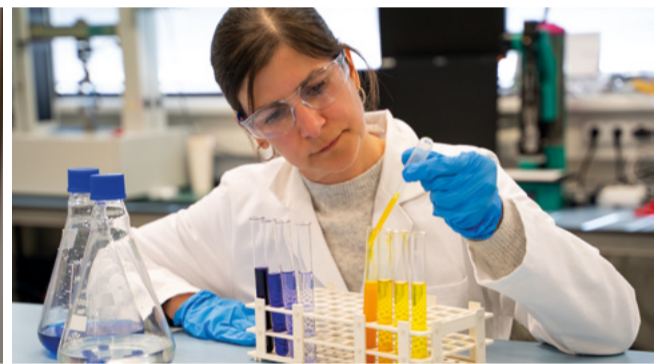
Martin Hirschmann

Materials Engineer / Materials & process development



Christoph Kalab

Materials Engineer / Materials & process development and Team Leader Quality Assurance



Helga Klug

Chemist / Coordination certificates, material data sheets & immersion tests



Stefan Mößner

Employee Quality Assurance / Batch & material testing



Walter Piontek

Employee Quality Assurance / Testing of ongoing production

- ▶ *Materials & process development*
- ▶ *Quality assurance*
- ▶ *Coordination certificates*
- ▶ *Material data sheets*
- ▶ *Batch & material testing*
- ▶ *Testing of ongoing production*

STATE-OF-THE-ART TESTING FACILITIES

In the in-house laboratory, arriving raw material batches are subjected to an incoming goods inspection and material batches of the current production procedure are continuously checked and documented. This enables Seal Maker to draw conclusions on the production quality on the one hand and to provide a database for factory test certificates on the other. Our laboratory has comprehensive testing facilities, such as a tensile testing machine, a density measuring device, various hardness measuring systems, a *Zeiss-Microscope* for damage analysis, devices and furnaces for simulating various production processes and storage tests for stability analytics. Due to a close cooperation with external partners such as the *Johannes Kepler University of Linz* or the *Austrian Research and Testing Institute* Seal Maker is also able to react to individual customer inquiries.

最先进的测试设备

在公司内部实验室，我们的员工对到达的原材料批次进行进货检验，并对当前生产程序中的材料批次进行持续检查和记录。这使得Seal Maker一方面可以掌握生产质量，另一方面可以提供工厂测试证书的数据来源。我们的实验室拥有全套测试设备，如拉伸测试机、密度测量设备、各种硬度测量系统、用于损伤分析的蔡司显微镜、用于模拟各种生产过程的设备和熔炉，以及用于稳定性分析的储存测试。由于我们与外部合作伙伴也有密切合作，如林茨的约翰内斯·开普勒大学以及奥地利研究与测试研究所，Seal Maker也能够对个别客户的询问作出迅速反馈。

CERTIFICATES, CONFIRMATIONS, DECLARATIONS

Based on the documented batch values, Seal Maker is able to issue a wide variety of test certificates according to *EN10204* for all products. According to the respective standard the following certificates are at disposal:

Confirms that the delivered goods meet the requirements of the order without specification of test results	EN10204 - 2.1	确认交付的货物符合订单要求 但未说明测试结果
Confirms that the delivered goods meet the requirements of the order without specification of test results incl. data sheet values and batch number	EN10204 - 2.2	确认交付的货物符合订单要求 没有说明测试结果 包括数据表值和批号
Confirms that the delivered goods meet the requirements of the order including product-specific tests	EN10204 - 3.1	确认交付的货物符合订单要求 包括产品特定测试
The results from the acceptance test certificate 3.1 have additionally been confirmed by an external expert	EN10204 - 3.2	验收测试证书3.1的结果已由外部专家额外确认

证书、确认书、声明

通过记录在册的批次, Seal Maker根据*EN10204*为所有产品颁发各种测试证书。根据各自的标准,可颁发以下证书:

The departments *Quality Assurance*, as well as *Materials & Process Engineering* also take care of the necessary declarations and certificates on the subject of *REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals)*, *SVHC (Substances of very high concern)*, *Food Applications*, *RoHS (Restriction of Hazardous Substances)*, conflicting materials as well as many other confirmations for Seal Maker materials.

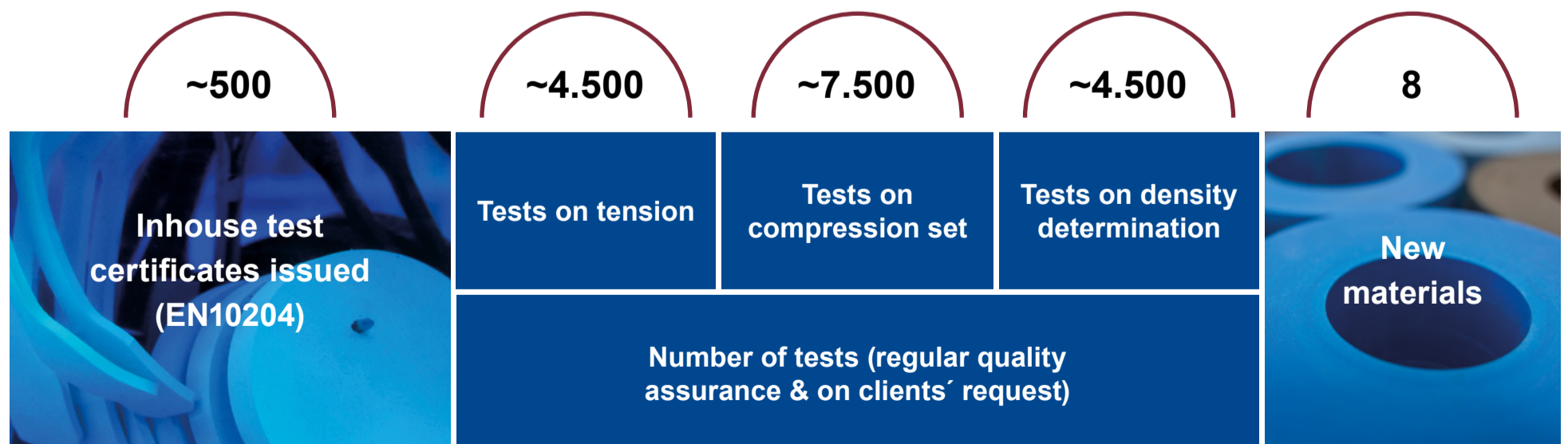
质量保证部以及材料与工程部还负责有关*REACH* (化学品注册、评估、授权和限制)、*SVHC* (高度关注的物质)、食品应用、*RoHS* (有害物质限制)、相互矛盾的材料以及其他Seal Maker材料的确认。

i All available documents in their latest version can be found in the download area on www.seal-maker.com!

Just a few steps to the certificate:
Do you need a certificate or an acceptance test certificate? Just specify the desired test certificate including all the test criteria in your order and you will receive the respective test certificate with the delivery. Our sales team will be pleased to answer any questions you may have: sales@seal-maker.com

i 所有最新版本的证书都可在www.seal-maker.com的下载区找到。

获得证书的几个步骤:
你需要证书还是验收测试证明?您只需在订单中注明所需的测试证书,包括所有测试标准,您将在交货时收到相应的测试证书。我们的销售团队将很乐意回答您可能遇到的任何问题 sales@seal-maker.com



Figures of 2022

Process optimizations

Behind the scenes, Seal Maker is constantly striving to optimize processes, improve machines, and make working easier and, above all, safer. Due to the variety of products and the possibility of individual product developments, total automation of production is neither possible, nor expedient. Nevertheless, Seal Maker emphasizes further process developments and favours partial automation. Thus, product quality and availability for international customers will be guaranteed any time.

Several internal machine projects have also been realized in recent months. When implementing such extraordinary projects, Seal Maker can rely on its know-how from many years of mechanical engineering activities and experience.

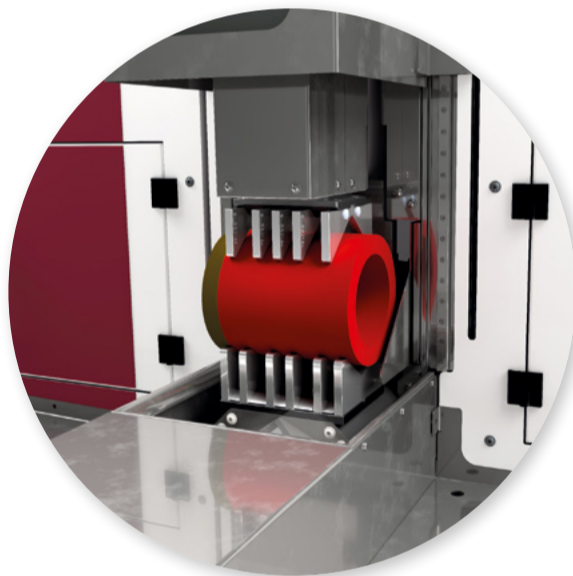
Seal Maker 不断努力优化流程，改进机器，使工作更轻松，最重要的是安全性能更高。但是，由于产品的多样性和涉及单个产品开发，生产的完全自动化既不现实，也不方便。尽管如此，Seal Maker 进一步加强工艺开发，并倾向于部分自动化。因此，我们的产品质量和产品在国际客户运用方面的可实用性在任何时候都能得到保证。近几个月来，一些内部机器项目也已实现。在实施此类项目时，Seal Maker 依靠其多年机械工程活动的专业知识和经验。

1. FACE-CUTTING MACHINE

The aim of this in-house development is to simplify the face-cutting-process following the casting process by means of partial automation. In the past, this production step was carried out manually, one piece by another, on a lathe. Now it is, up to a diameter of 150 mm, carried out at the push of a button.

Advantage

By more efficient face-cutting-procedures production peaks can be better handled and possible delivery delays avoided.



1. 面切割机

面切割机内部开发的目的是通过以下方式简化铸造工艺后的面切割工艺部分，是实现自动化的手段。在过去，这一生产步骤是在车床上一件接一件地手动进行的。现在，对于直径高度150毫米的原材料，只需按下一个按钮即可完成。

优势

通过更有效的端面切割程序，可以更好地处理生产高峰期的订单，避免可能的交货延迟。

2. WINDING MACHINE

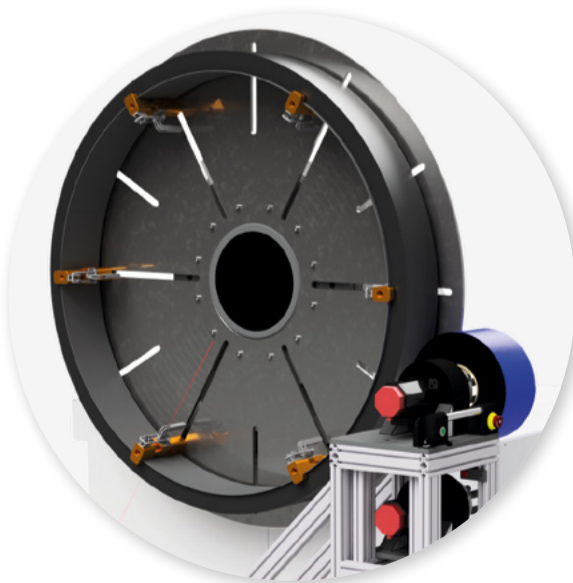
New machines have also been developed and implemented for the *Elastomer Production Department*. Two new winding machines were put into operation, providing several advantages at the same time:

Advantage

Digital measuring device: Reduction of production waste by avoiding excess of diameter.

Improved quality: Standardization of the process parameters through the automated winding process and the resulting constant basic tension of the raw material during the entire winding process.

Clamping system: Facilitating the work of employees while reducing set up times.



2. 绕线机

我们还为橡胶生产部门开发和配备了新的机器。二台新的绕线机投入运行，同时具有以下几个优势：

优势

数字测量设备：通过避免直径过大来减少生产浪费。

提高质量：通过自动化缠绕过程实现工艺参数的标准化，并在整个缠绕过程中使原材料的基本张力保持不变。

夹紧系统：方便员工工作，同时减少设置时间。



More
information



SML product news

Automatic coolant recirculation

Since the beginning of 2023, the new automatic coolant recirculation system has been installed as standard in every serial machine. The extracted coolant is pumped back into the coolant tank fully automatically, as a result, no manual emptying will be required anymore. The back pump process can also be performed manually by the operator at any time. Of course, all existing machines can be retrofitted.

自动冷却液再循环

自 2023 年初以来，新的自动冷却液再循环系统已作为标配安装在数控机床上。抽出的冷却液被全自动泵回冷却液箱，因此不再需要手动排空，而回泵过程也可以随时由操作人员手动执行。当然，所有现有类型的设备我们都可以进行相应改造。



Chip cutting knives with a longer service life

As part of the engineering work, the existing chip cutting types were further improved. Optimizations have been achieved in the areas of performance and serviceability. The new RH37A and DH55A chip cutters can be universally used and retrofitted in SML machine types with the appropriate chip cutter console. A further optimization step is the use of highly efficient solid carbide cutting knives with a significantly improved service life. This will enable machine operators to make serial production even more efficient in future.

寿命更长的切屑刀

作为工程工作的一部分，我们对现有的切割类型进行了进一步的改善，优化已有性能和可维护性两方面。新型 RH37A 和 DH55A 切屑刀具可通用于 SML 设备中进行改装，并带有适当的切屑控制台。所谓的进一步优化是指使用高效整体硬质的合金切削刀，显著延长了使用寿命。这对于设备操作员提高批量生产效率是如虎添翼。



0iTF Plus on all SML machines

The new FANUC control system series, 0iTF PLUS, retains all the advantages of the previous version and simplifies production processes with intuitive operation through iHMI and FANUC Picture. Intuitive menu navigation, modern design and animated functions make it easy to program complex editing operations. At the end of February, the first SML1800e was put into operation together with the competent partner FANUC Austria GmbH. With the subsequent adjustment of the SML500e, all SML machine systems can now be delivered with the new control panel.

适用于所有SML设备的 0iTF Plus系统

新的FANUC控制系统系列0iTF PLUS保留了以前版本的所有优点，并通过iHMI和FANUC Picture直观地简化了生产过程。直观的菜单导航，现代的设计以及动画功能，使其更易于复杂的编程操作。2月底，我们与强有力的合作伙伴FANUC奥地利有限公司一起投入运行第一台SML1800e交付使用。随着SML500e的后续调整，所有SML设备系统都将会使用新控制面板。



New Laser Engraver Q400

The Laser Engraver Q400 laser marking system enables individual and simple marking of seals up to an outer diameter of approx. 630 mm. With the help of its laser technology, the new laser guarantees excellent marking results in the shortest possible time at a speed of up to 2000 mm/sec and a marking field of 1030 x 630 mm.

新款激光雕刻机Q400

激光雕刻机 Q400 激光打标系统可以单独、简单地打标密封件，最大外径适用可达 630 毫米。借助其激光技术，新型激光器保证了其出色的打标。在最短的时间内，速度可达 2000毫米/秒，打标范围为1030 × 630毫米。欲了解更多信息：



Watch the new
video now!



UNO Smart

The efficient UNO Smart tool presetting unit is the ideal companion for the Seal Maker lathe. Short set-up time and long machine runtime are the two most important factors in increasing machine productivity. The tool presetting device determines all important data in advance and facilitates the tool measurement process.

高效的UNO智能工具预设单元是Seal Maker设备的理想搭档。设置时间短以及延长机器运行时间是提高机器生产率的两个最重要的因素。此工具预置装置可提前确定所有重要数据，以方便刀具测量的过程。



3 winners (from left): Viorel Vanatu, Christoph Kalab, Joachim Wilfinger



We call it – THE BOX

Each employee at Seal Maker has a great deal of expertise. Together, Seal Maker has an enormous know-how at disposal, allowing to improve the working world and every work process. To put it short, everyone benefits from the experience and creativity of the others. In order to bundle this knowledge, a place for ideas and solutions in the company have been developed! The team calls it **THE BOX**.

THE BOX is a virtual platform, integrated in the intranet and is accessible to all employees, which stores ideas, suggestions and solutions. In the background, this data is evaluated and processed by the Idea-Management-Team, thus developing new work processes together with the idea generator. A number of improvements, such as for example a central suction system in the seal production department, which resulted in a significant noise reduction, ensuring a much more pleasant working environment, has been implemented by means of this method. As a small recognition for the numerous ideas in **THE BOX**, a special reward had been set up! Of all the proposals collected, three will be presented to the entire staff every year.

For Seal Maker, it's clear: *We are always looking forward to fresh, new and innovative proposals!*

Seal Maker的每一位员工都拥有丰富的专业知识。Seal Maker致力于将专业知识用于改善世界工作大环境和 workflows。简而言之，每个人都受益于其他人的经验和创造力。公司将这些珍贵的经验知识融合起来，我们称这个用于解决方案的平台为**The BOX**（宝盒）。

THE BOX是一个存在于内部网中的虚拟平台，所有员工可以将创新想法、建议和解决方案畅所欲言。创意管理团队会在后台对这些数据进行评估和处理，与想到该点子的发明者一起开发新的 workflow、做出改进。例如通过这种方法，密封生产部门的中央吸力系统显著降低了噪音，从而确保了更舒适的工作环境。作为对“宝盒”中众多创意的认可，我们设立了一个特别奖项！在收集到的所有提案中，每年有三个将会颁发给全体员工。

对于 Seal Maker 来说，显而易见我们一直期待着新颖和创新的建议！

Global connections

Already in mid-March, two colleagues from China and Singapore visited the Seal Maker Headquarters. Guanming Wang and Amalrence Vargeese participated in an extensive machine and seal operation training. At the same time, the visit was a good opportunity to gain new experiences and to exchange ideas with colleagues in Pöttelsdorf.

Guanming Wang | Employee Seal Maker China Co., Ltd. | Shanghai
Amalrence Vargeese | Employee Seal Maker Asia Pacific Pte. Ltd. | Singapore

早在3月中旬，中国和新加坡的两位同事参观了 Seal Maker 总部。王冠明和 Amalrence Vargeese 接受了设备和密封操作培训。这次访问对他们是一个非常好的契机，不仅获得了新经验，还与 Pöttelsdorf 的同事进行了思想交流。

王冠明 | 速麦密封科技（上海）有限公司（即 Seal Maker 中国分公司）员工
Amalrence Vargeese | Seal Maker 亚太新加坡分公司员工



From left: Amalrence Vargeese und Guanming Wang

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