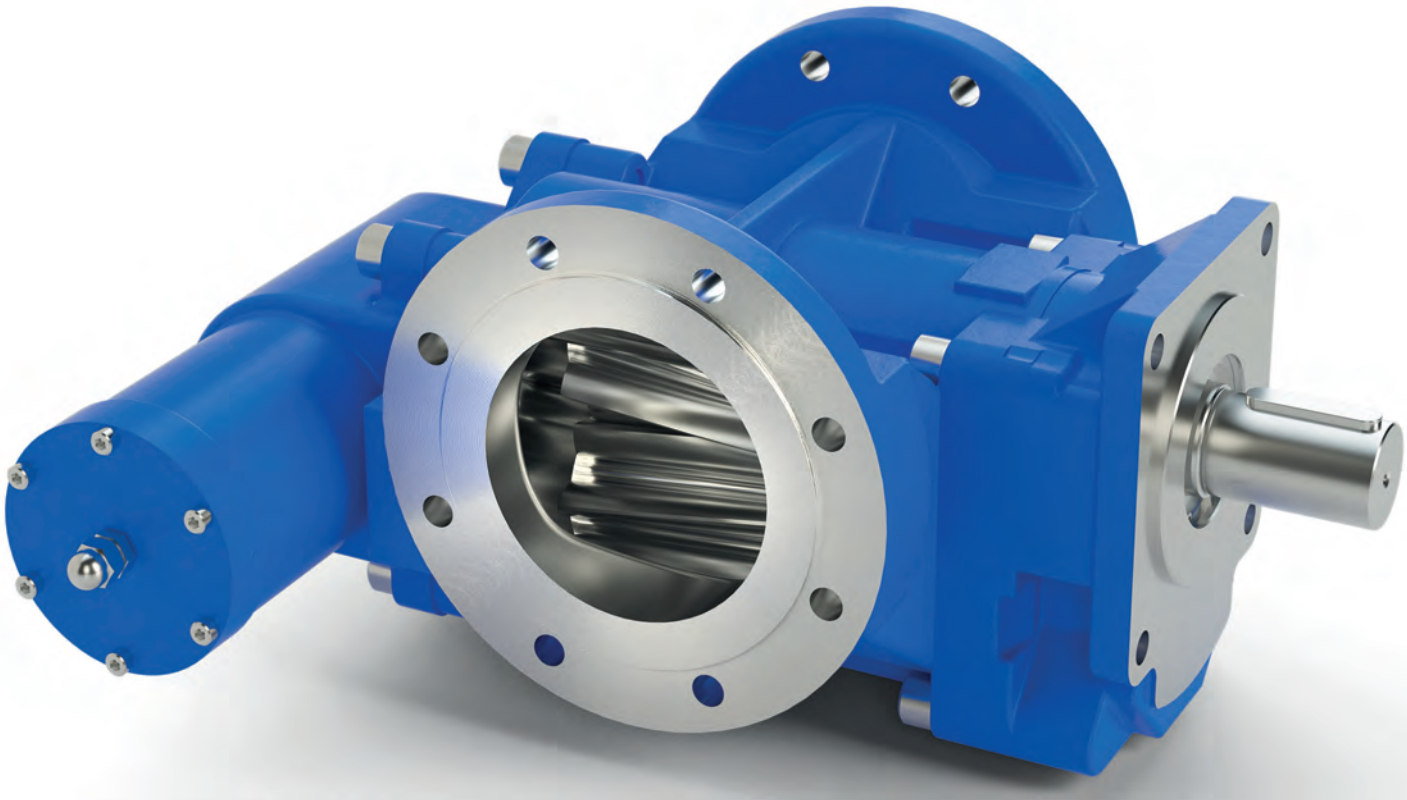
RICKMEIER:
可靠成就卓越！

RICKMEIER.
PUMPENTECHNOLOGIE

RICKMEIER 开发、制造和销售高品质的齿轮泵、阀门、特殊产品和系统。RICKMEIER 通过坚持不懈地持续开发产品和服务，让客户享有独特的优势。

RICKMEIER DEVELOPS, MANUFACTURES AND SELLS HIGH QUALITY GEAR PUMPS, VALVES, SPECIAL PRODUCTS AND SYSTEMS. RICKMEIER PROVIDES ITS CUSTOMERS UNIQUE ADVANTAGES BY THE CONTINUOUS DEVELOPMENT OF PRODUCTS AND SERVICES.



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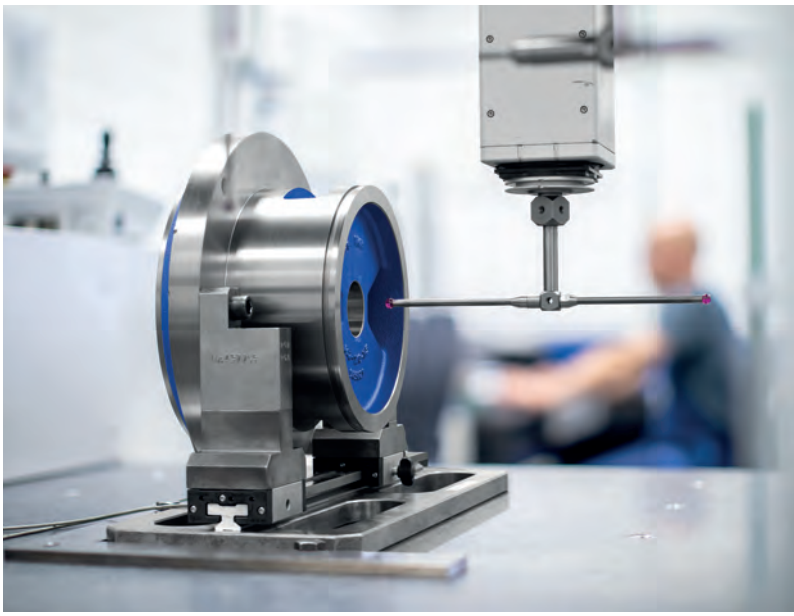


#1 RICKMEIER

可靠性令我们强大

可靠性意味着诚信、负责、认真、信赖、细致和严谨。这些词汇是 RICKMEIER 公司的精神，并贯穿于公司与客户、员工、供应商和其他合作伙伴之间的日常合作。

RELIABILITY MAKES US STRONG

Reliability means honesty, responsibility, diligence, loyalty, thoroughness and carefulness. These terms define the ethos of RICKMEIER and stand for the daily collaboration with customers, suppliers, employees and further partners.

RICKMEIER 理念

RICKMEIER 理念包括创造让客户和供应商在日常合作中与 RICKMEIER共享所有优势。这是公司理念的重要组成部分，贯穿于所有部门员工的日常工作之中。了解 RICKMEIER 理念后，您便会发现这项理念是我们成功的基石。

THE RICKMEIER PRINCIPLE

The RICKMEIER principle contains all advantages customers and suppliers experience in their daily cooperation with RICKMEIER. It is an important part of the corporate philosophy and accompanies employees of all departments in their daily work. Get to know the RICKMEIER principle and you will soon realise that this principle is the basis of our success.

RICKMEIER 理念 / THE RICKMEIER PRINCIPLE

几代人的传承

100 多年来，RICKMEIER 这个名字代表了“德国制造”的泵机技术创新。此项专业技术以及持续不断地投资最先进的开发和制造工艺使得 RICKMEIER 成为了国际知名的齿轮泵、阀门和油供应系统的供应商。敬业的员工、出色的营销案例和全面的未来规划保证了高品质、持续性和安全性。

CONTINUITY FOR GENERATIONS

For more than 100 years RICKMEIER has stood for innovative pump technologies “Made in Germany”. This know-how and the willingness to constantly invest in state-of-the-art development and production processes make RICKMEIER an internationally recognised supplier of gear pumps, valves and oil supply systems. Committed employees, excellent references and well-grounded future planning guarantee quality, continuity and safety.

关注客户

以客户为导向以及创建合作伙伴关系：这便是 RICKMEIER。极短的反应时间、个性化的解决方案以及微型系列和小型系列的改造皆反应了公司的灵活性。全系列泵和阀门经过数十年的发展和验证，在全球各知名公司中皆有使用。与客户和用户共同开发并实现解决方案与设计方案。为此我们为您配备了专业的联系人：无论是咨询、开发，还是服务 – RICKMEIER 随时恭候！员工极强的专业能力和公司经过多年发展的专业技术让您与 RICKMEIER 的合作愉快、成功。最终收获客户的信任和信赖。请您联系我们，我们将竭尽全力满足您的愿望和要求。

FOCUSED ON OUR CUSTOMERS

This is RICKMEIER: Customer focused and based on partnership. Short reaction times, individual solutions and modifications even for smallest or smaller series underline the flexibility of our company. A complete range of proven and tested pumps and valves has been used by famous companies worldwide for more than decades. Solutions and concepts are developed and implemented together with customers and users. Therefore our competent employees / engineers are always available whether advice, development or service are required – RICKMEIER is here for you! The high level of competence provided by our employees and the know-how that has been growing for years, make your cooperation with RICKMEIER a successful and pleasent story. Trust and customer loyalty are the result. Contact us and we will adapt to your wishes and needs.

落到实处的质量

质量始于人们的意识。在 RICKMEIER 公司所有部门都能感受到质量如何落到实处。质量意识已融入咨询、开发、制造和服务之中。咨询专业性的特点在于对透明度和经济性提出了极高的要求。开发由了解市场期待的人们进行设计。制造通过创新的生产与装配工艺确保最高的产品质量。服务以客户为导向且非常灵活。使用最先进的试验台技术、以流程为导向的管理体制以及符合 ISO 9001 和 14001 的认证是高质量要求密不可分的组成部分。让全球客户满意的质量：“德国制造”以及由 200 多名员工落到实处的质量。

LIVED QUALITY

Quality begins in peoples' minds. That is how you can feel quality is lived in all areas of RICKMEIER – quality in consulting, development, production and service. The consulting skills are characterized by the high demands on transparency and profitability. The development is shaped by people who know what the market expects. Manufacturing guarantees the highest product quality achieved by innovative production and assembly processes. The service is customer focused and flexible. The use of the latest test equipment, a process-oriented management system, as well as certifications according to ISO 9001 and 14001, are inherent parts of our high demands on quality. A quality that customers all over the world can rely on: “Made in Germany” and lived by more than 200 employees.

重新定义专业性

RICKMEIER 的工程师和技术员在齿轮泵、阀门和各类应用领域设备的使用方面经验丰富。RICKMEIER 的开发部具有极强的专业性，能将最先进的测量和试验方法用于所有的开发阶段。以客户为导向的开发时间、产品可靠和客户满意是我们日常工作的中心。请向 RICKMEIER 的工程师和技术员咨询，充分利用我们的专业实力。

NEWLY DEFINED COMPETENCE

The RICKMEIER engineers and technicians are convincingly experienced regarding the utilisation of gear pumps, valves and equipment in various fields of application. The RICKMEIER development department is available with their competences and the most up-to-date measurement and testing equipment at all stages of the development phase. The main focus of our daily work is having reliable products and satisfied customers. Benefit from this competence and let the engineers and technicians at RICKMEIER advise you.

面向未来的技术

除了员工掌握强大的专业技术外，使用最先进的技术也是开发和制造高品质的齿轮泵、阀门和供油设备的先决条件。最先进的生产工艺和设立满足所有标准和诸多特殊应用的系列试验场凸显出极高的技术要求。RICKMEIER 的产品持续进行后续开发。与不同工业领域的客户和用户持续沟通催生了众多首屈一指且可靠的技术解决方案。由此开发了抽吸性能出色的低噪音泵、超高精度的阀门和能长期可靠运作的组件。全球各地的客户都对我们的质量赞誉有加，并信任 RICKMEIER 这个品牌。

VISIONARY TECHNOLOGIES

The development and manufacturing of high quality gear pumps, valves and oil supply systems requires a high level of employee know-how as well as the use of the most modern forms of technology. The most modern manufacturing processes and the new development of a series test facility for all standard and many special applications emphasises the high technical demands. RICKMEIER products are subject to a constant further development. The continual dialogue with customers and users in all different industrial sectors leads to reliable technical solutions that could hardly be found anywhere else. Low noise pumps with excellent suction performance, highest-precision valves as well as long-life and reliable units are the result. This quality is valued by customers all over the world and the name RICKMEIER is one you can trust on.

RICKMEIER 的产品接受持续的改善。
RICKMEIER PRODUCTS ARE SUBJECT TO CONTINUOUS FURTHER DEVELOPMENT.

齿轮泵与阀门

RICKMEIER 的齿轮泵和阀门能处理不同工业应用领域内的各类任务：涵盖由润滑剂回路中的润滑剂输送，到液压工作系统中的增压，乃至油和输送介质的液体输送。在工业实践应用的泵原理中，外齿齿轮泵和内齿齿轮泵都属于极为可靠的机器。泵在很多应用领域都隐蔽地运作着，只有通过泵的运作才能为其他工作机器可靠且顺畅运行创造前提条件。RICKMEIER 已有一百多年的历史，期间开发了各种设计型式和尺寸的齿轮泵。RICKMEIER 的产品和服务范围被设计为通过特殊开发迅速、高效且可靠的满足客户的个性化需求。RICKMEIER 齿轮泵和压力阀的典型应用领域为柴油和燃气发动机制造、车辆技术、化工设备制造、发电技术、造船、风能利用以及一般机械制造中其他无数的应用。典型的输送介质为所有常见的润滑剂，但也包括废油、ATF油、钻井油、柴油燃料、乳化液、齿轮油、加热油、液压油、机油、聚乙二醇油、聚α醇油、切削油、重油、传热油和拉延油。RICKMEIER 的齿轮泵和阀门代表了质量、可靠和以客户为导向的创新：涵盖全球和安全为上的任何地方。

图 1：齿轮泵 *R105/2400* 和限压阀 *DB9-B*
Fig. 1: Gear Pump R105/2400 and pressure relief valve DB9-B

GEAR PUMPS AND VALVES

RICKMEIER gear pumps and valves perform a wide range of tasks in different industrial applications: From pumping lubricant in lubricant circuits through pressure generation in hydraulic systems to liquid transport for oils and fluids. Among the pump principles that are implemented in industrial practice, external and internal gear pumps belong to the most reliable machines ever. In many applications they operate in obscurity and only through their work they do create the conditions for reliable and trouble-free operation of other machines. RICKMEIER has developed gear pumps in different designs and sizes over more than a century of company history. RICKMEIER´s range of products and services is designed in such a way that individual customer requirements can be realised quickly, efficiently and reliably as a special development. Typical applications for RICKMEIER gear pumps and pressure valves are diesel and gas engine constructions, automotive engineering, chemical plant construction, power plant engineering, shipbuilding, wind energy utilisation and countless other general mechanical engineering applications. Typical fluids are all common lubricants, but also used oils, ATF oils, drilling oils, diesel fuels, emulsions, gear oils, heating oils, hydraulic oils, engine oils, polyglycol oils, polyolefin oils, cutting oils, heavy oils, heat transfer oils and drawing oils. RICKMEIER gear pumps and pressure valves stand for quality, reliability and customer-oriented innovations: Worldwide and wherever safety counts.

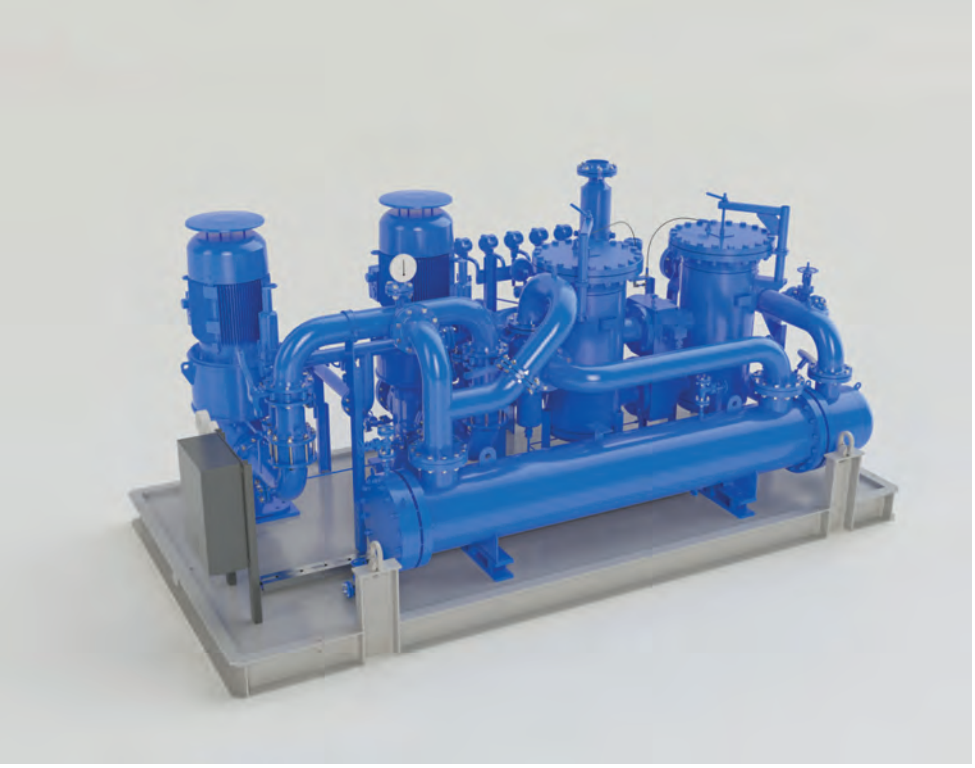


图 2：供油系统 *GP-2XL2NG-116/180-ISOGI0-G*
Fig. 2: Oil supply system GP-2XL2NG-116/180-ISOGI0-G

图 3：供油系统 *WS 400 S-2XR45/80 FL-Z*
Fig. 3: Oil supply system WS 400 S-2XR45/80 FL-Z

供油系统

RICKMEIER 规划、设计和制造用于传动和驱动技术、压缩机和涡轮机制造、风力发电设备和轴承的供油系统。经验丰富的工程师和技术员通过与国际客户紧密合作的方式提供咨询服务，规划方案。RICKMEIER 汲取了数十年的经验和高超的专业技术知识。RICKMEIER 供油系统已在全球打造了最高的质量，设立了专业咨询服务。所有系统在发货前都会采用公司内部的试验台进行严格检查。全球物流的保障、专业的服务以及可靠的备件供应保证了极高的客户满意度。

OIL SUPPLY SYSTEMS

RICKMEIER engineers, designs and manufactures oil supply systems for transmission and drive technology, compressor and turbine construction, for wind turbines and bearings. Experienced engineers and technicians advise and engineer in close cooperation with international customers. RICKMEIER looks back on decades of experience and a high level of technological knowledge. Highest quality and expert advises have established RICKMEIER oil supply systems worldwide. All systems are carefully tested on our own test benches before delivery. The worldwide logistics, a competent service as well as reliable supply of spare parts guarantee high customer satisfaction.

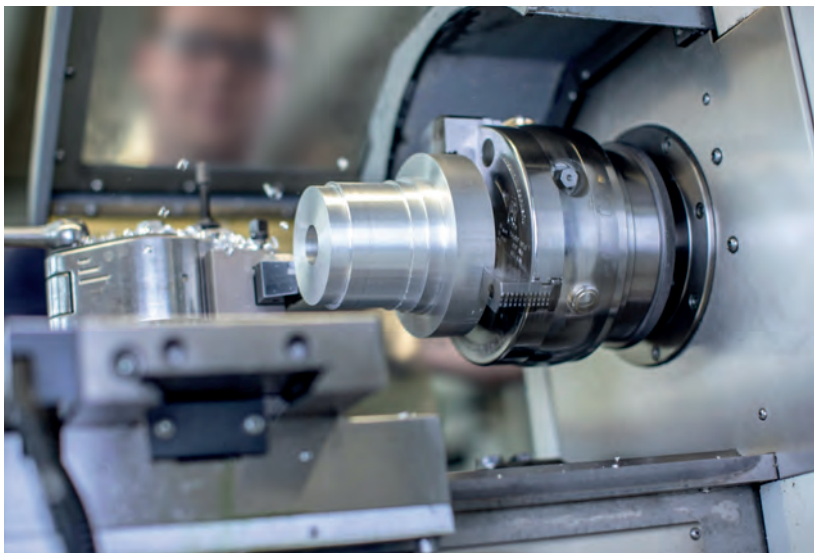
图 4：供油系统 *WS 3500 S-2XR65/400 FL-Z*
Fig. 4: Oil supply system WS 3500 S-2XR65/400 FL-Z

制造

RICKMEIER 制造是整个公司创造价值的源头。可靠的制造工艺为所有产品的持续质量和可用性提供了基础。从产品配置到采用最新系列试验台进行 100% 检查，我们皆以个性化的客户要求为中心。不断优化的工艺和流程、确保最高精度的先进设备以及优秀的员工代表着可靠性和“德国制造”的品质。RICKMEIER 这个品牌是可靠性、先进性、可持续性和以客户为导向的代名词。这项高要求是 RICKMEIER 公司理念密不可分的组成部分，并在全公司落实。

PRODUCTION

RICKMEIER production is the source of value creation for the entire company. Reliable manufacturing processes provide the basis for continuous quality and availability of all products. Our main focus is placed on individual customer requirements, from configuration of the product to 100% control on the latest production test benches. Processes and procedures are being constantly optimised, a modern machinery guarantees the highest precision and highly qualified employees stand for reliability and quality “Made in Germany”. The RICKMEIER brand represents reliability, progress, sustainability and customer orientation. This high standard is an inherent part of the RICKMEIER corporate philosophy and is lived throughout the company.



#2 齿轮泵 / GEAR PUMPS

标准齿轮泵
（机械或电动驱动）

一般说明

RICKMEIER 齿轮泵的特点在于稳固的结构搭配最少的部件。标准规格包括齿轮罩 (1)、驱动装置盖罩 (2) 和端盖 (3)。硬化齿轮轴 (4) 产生流动。可以选配溢流阀 (7)。大尺寸的复合轴承 (5) 确保极长的使用寿命和更佳的干运行性能。驱动轴配有径向轴密封圈 (6)，或根据要求配有机械密封。流动通道短而直，确保了出色的抽吸性能以及安静的运行。

STANDARD GEAR PUMPS
(mechanically or electrically driven)

General description

RICKMEIER gear pumps are characterized by their robust design combined with a minimum number of parts. The basic version consists of the gear casing (1), driving cover (2) and end cover (3). The flow is generated by hardened gear wheels (4). A pressure relief valve (7) is optionally available. Compound journal bearings (5) with ample dimensioning ensure long life operation and enhanced dry-running capability. The driving shaft is equipped with a radial shaft seal (6) or when required with a mechanical shaft seal. Short and straight alignment of the flow channels provides an excellent suction capability and quiet running.

RICKMEIER 泵成熟的设计保证极低噪音的运行。
RICKMEIER'S INGENIOUS DESIGN ASSURES EXTREMELY LOW LEVELS OF NOISE DURING OPERATION.

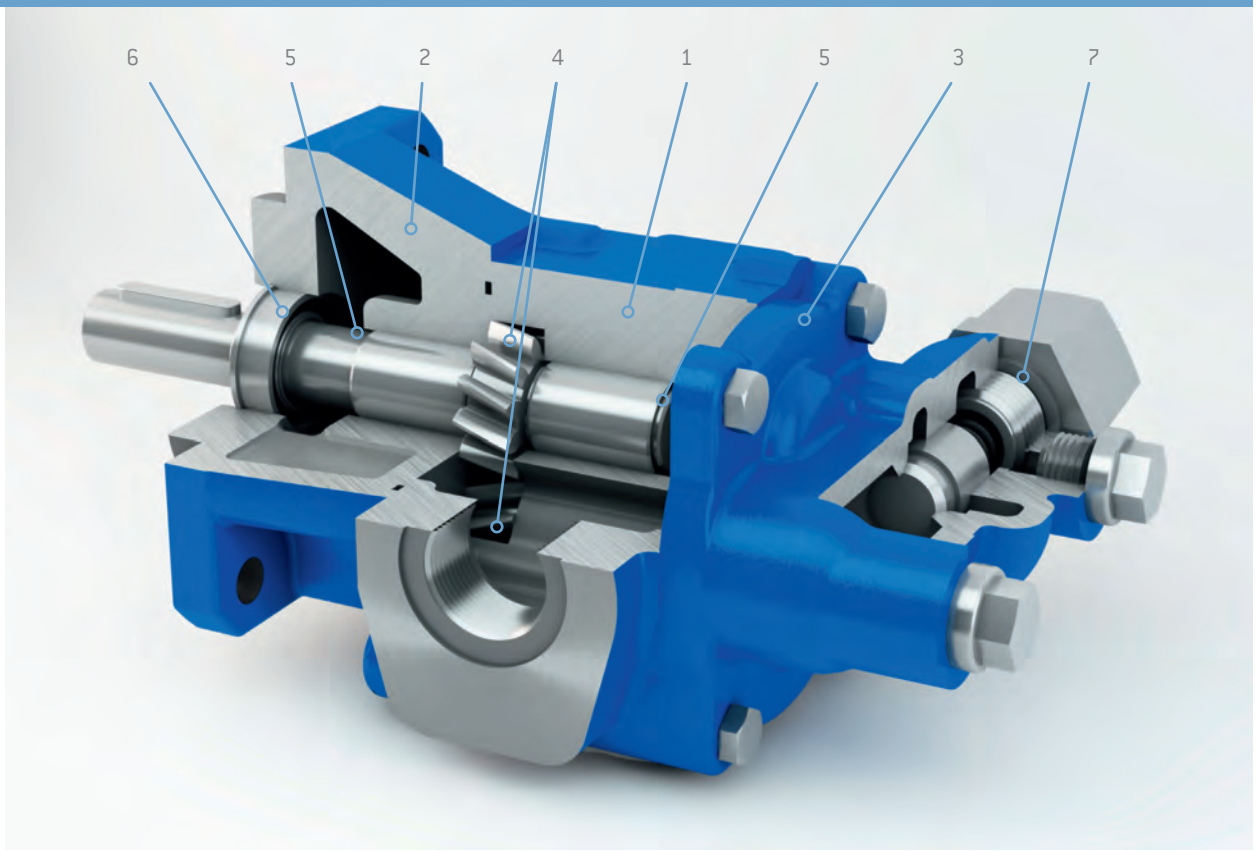


图 5: 标准版齿轮泵
Fig. 5: gear pump, standard version

标准齿轮泵“R.5”的可用规格和型号

标准泵和派生型

	标准	根据要求发展的派生型
紧固法兰	正方形	带脚座，圆形，椭圆形
接口	R25：具有螺纹孔 R35，R45，R65 R95	公制 SAE 图 公制 SAE 图 符合 RICKMEIER 标准的法兰图
轴端	圆柱形，带平键	圆柱形，无平键 圆锥体，从动件，齿部
轴密封圈	径向轴密封圈	无密封件，机械密封，分离介质的多层密封件
压力阀	带或无溢流阀	带外部控制器的压力调节阀
转换阀	无	可用于 R35，R45，R65
辅助轴承	无	驱动装置盖罩内的附加轴承或单独的辅助轴承组件
流量数量	单层泵	带或无腔室分离装置的双层泵
防腐蚀保护	“两组分”油漆 RAL 6011	根据要求

材料

齿轮罩，驱动装置盖罩，端盖	EN-GJL-250 (GG-25)*	EN-GJS-400-15 (GGG-40)*
齿轮轴	硬化钢	根据要求
密封件	NBR	FKM 等
轴承	复合轴承	根据要求

*之前使用的说明
表1：标准规格和派生型

AVAILABLE DESIGNS AND TYPES OF STANDARD GEAR PUMPS “R.5”

Standard pumps and variations

	STANDARD	VARIATIONS ON REQUEST
Fix flange	Rectangular	With foot, circular, oval
Connection	R25: With thread R35, R45, R65 R95	Metric SAE flange Metric SAE flange RICKMEIER Standard
Shaft end	Cylindrical with feather key	Cylindrical without feather key, conical driver, thread
Shaft seal	Radial shaft seal	Without seal, mechanical seal, double seal for media separation
Pressure valve	With or without relief valve	Pressure control valve with external initiation
Flow reversal valve	None	Available for R35, R45, R65
Additional front bearing	None	Integrated in driving cover or separate bearing unit
No. of flow rates	Single	Double, with or without separation
Corrosion protection	2-component based painting RAL 6011	On request

MATERIALS

Gear casing, driving cover, end cover	EN-GJL-250 (GG-25)*	EN-GJS-400-15 (GGG-40)*
Gear wheels	Hardened steel	On request
Seals	NBR	FKM, a.o.
Bearings	Compound bearings	On request

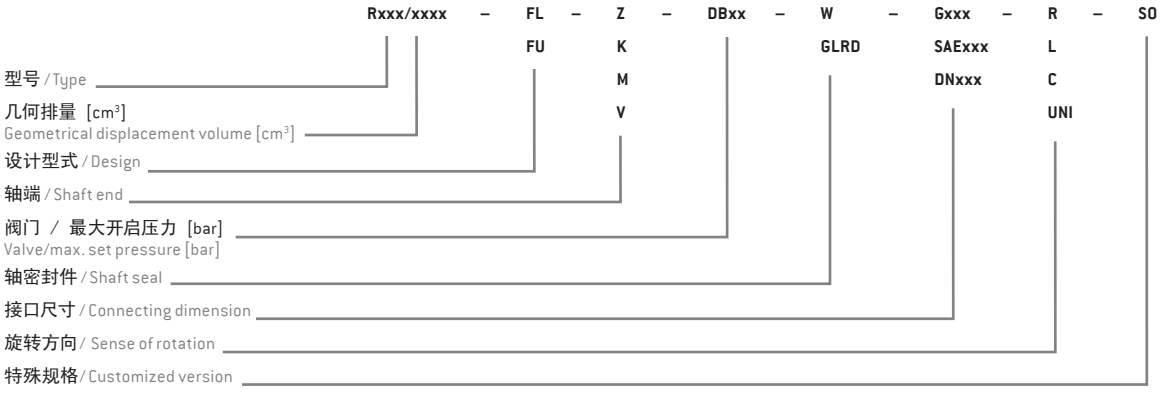
** formerly used descriptions*
Tab. 1: Standard version and variations

名称和型号代码

RICKMEIER 的齿轮泵标有以下代码：

IDENTIFIERS, TYPE CODE

Rickmeier gear pumps are identified by the following code:



解释说明

FL	法兰泵
FU	脚踏泵
Z	圆柱形轴端
K	锥形轴端
M	带从动件的轴端
V	带齿部的轴端
DB	溢流阀
W	径向轴密封件
GLRD	机械密封
G	螺纹
SAE	连接图
R	向右旋转
L	向左旋转
C	向右和向左旋转（交替输送方向）
DN	标称法兰尺寸
UNI	流向与旋转方向无关
SO	特殊规格

Explanation

FL	Flange pump
FU	Foot pump
Z	Cylindrical shaft end
K	Conical shaft end
M	Shaft end with driver
V	Shaft end with spline
DB	Pressure relief valve
W	Radial shaft seal
GLRD	Mechanical seal
G	Thread
SAE	Connecting dimensions
R	Rotating clockwise
L	Rotating counter-clockwise
C	Rotating clockwise and counter-clockwise (changing direction of flow)
DN	Nominal flange dimension
UNI	Direction of flow independent of sense of rotation
SO	Customized version

使用范围

下表所示为标准规格泵的最大允许运行条件。如果需要超出此规定，请联系 RICKMEIER。介质具有润滑性能是保证较长使用寿命和最高运行安全性的前提条件。RICKMEIER 建议使用干净且无腐蚀性的介质，介质绝对不得含有固体成分。在寒冷气候下运行R35/R45泵时，可以使用带集成加热器的CCV规格泵（低至 -40 °C），以减少磨损、降低驱动功率和启动电流。

特性	单位	最小值	最大值
运动黏度	mm^2/s	7	100000[1)]
液体污染程度	ISO 4406	-	21/19/17
气体含量（不可溶解）	Vol.-%	-	10[2)]
运行温度（NBR 密封件）	°C	-30	80
生存温度（NBR 密封件）	°C	-40	80
运行温度（FKM 密封件） 齿轮泵组件 法兰泵	°C	-20（根据要求 -40）	 130[3)] 160[3)]
生存温度（FKM 密封件） 齿轮泵组件 法兰泵	°C	-30（根据要求 -40）	 130[3)] 160[3)]
径向轴密封圈的抽吸压力，运行	bar[4)]	-0.4	0.5
径向轴密封圈的抽吸压力，静止	bar[4)]	-0.4	5
机械密封的抽吸压力，运行	bar[4)]	-0.4	10
机械密封的抽吸压力，静止	bar[4)]	-0.4	10

1) 与泵转速有关，参见图 7
2) 介质中不可溶解的气体可能导致更高的噪音排放
3) 超过 80 °C 运行需要特殊措施 （例如：耐热联轴器，耐热弹簧等）
4) 用压力计测定

表2：使用范围

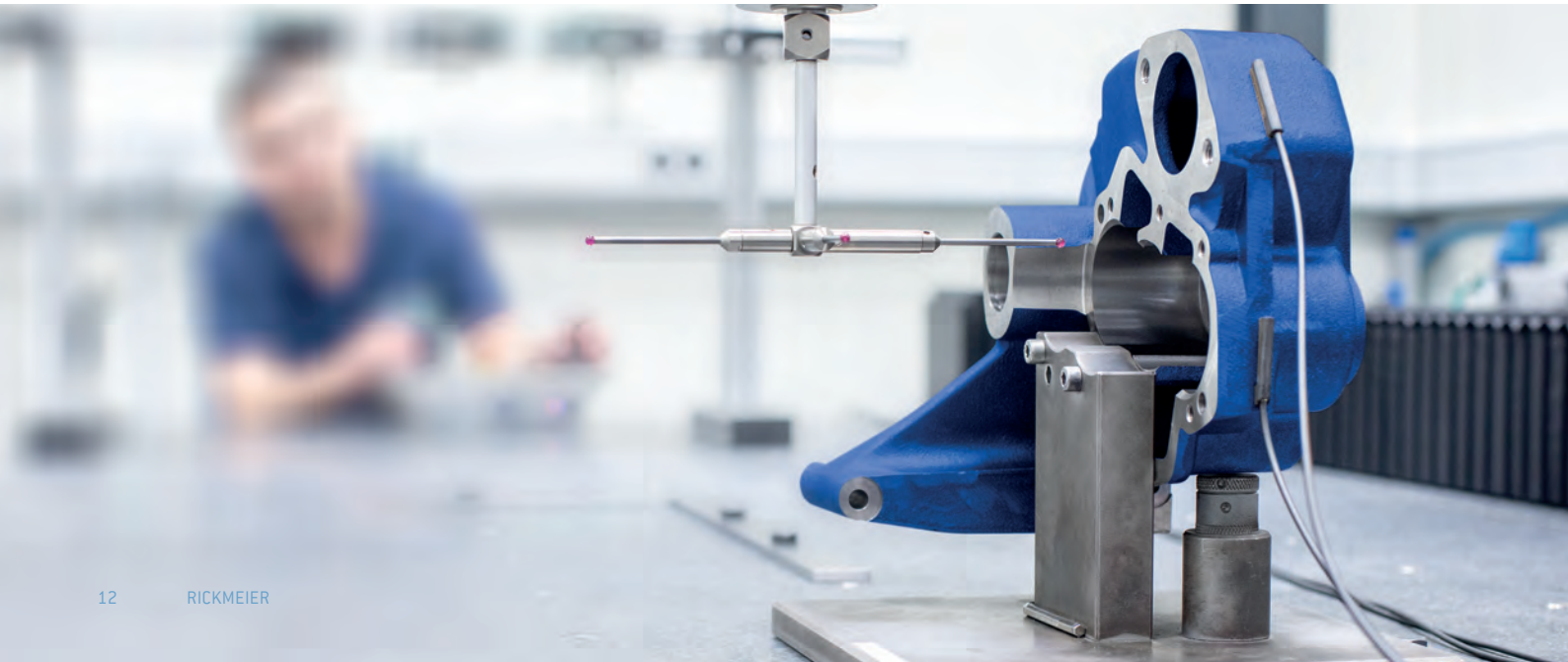
OPERATING LIMITATIONS

The table below shows the max. allowable operating conditions for pumps in standard version. Whenever these limits need to be exceeded please get in touch with us. Good lubricity of the flow medium ensures long lifetime and top operational safety. We recommend a clean and non-corrosive medium, in any case free of hard particles. When operating R35/R45 pumps in cold climates an optional CCV design (to -40°C) with integrated heating is available to reduce wear, driving power and starting current.

CHARACTERISTIC	UNIT	MIN.	MAX.
Kinematic viscosity	mm^2/s	7	100000[1)]
Degree of fluid contamination	ISO 4406	-	21/19/17
Gas content (undissolved)	Vol.-%	-	10[2)]
Temperature (NBR seals) operation	°C	-30	80
Temperature (NBR seals) survival	°C	-40	80
Temperature (FKM seals) operation Gear pump unit Flange pump	°C	-20 (-40 on request)	 130[3)] 160[3)]
Temperature (FKM seals) survival Gear pump unit Flange pump	°C	-30 (-40 on request)	 130[3)] 160[3)]
Suction pressure radial shaft seal, operation	bar[4)]	-0.4	0.5
Suction pressure radial shaft seal, standstill	bar[4)]	-0.4	5
Suction pressure mechanical shaft seal, operation	bar[4)]	-0.4	10
Suction pressure mechanical shaft seal, standstill	bar[4)]	-0.4	10

1) Depending on pump speed, see fig. 7
2) Undissolved gas in the medium may cause higher noise emissions
3) The operation above 80°C may require particular measures (e.g. high temperature couplings, springs etc.)
4) Manometric

Tab. 2: Operating limitations



标准齿轮泵的流量和转速限制
FLOW RATE AND SPEED LIMITS OF STANDARD GEAR PUMPS

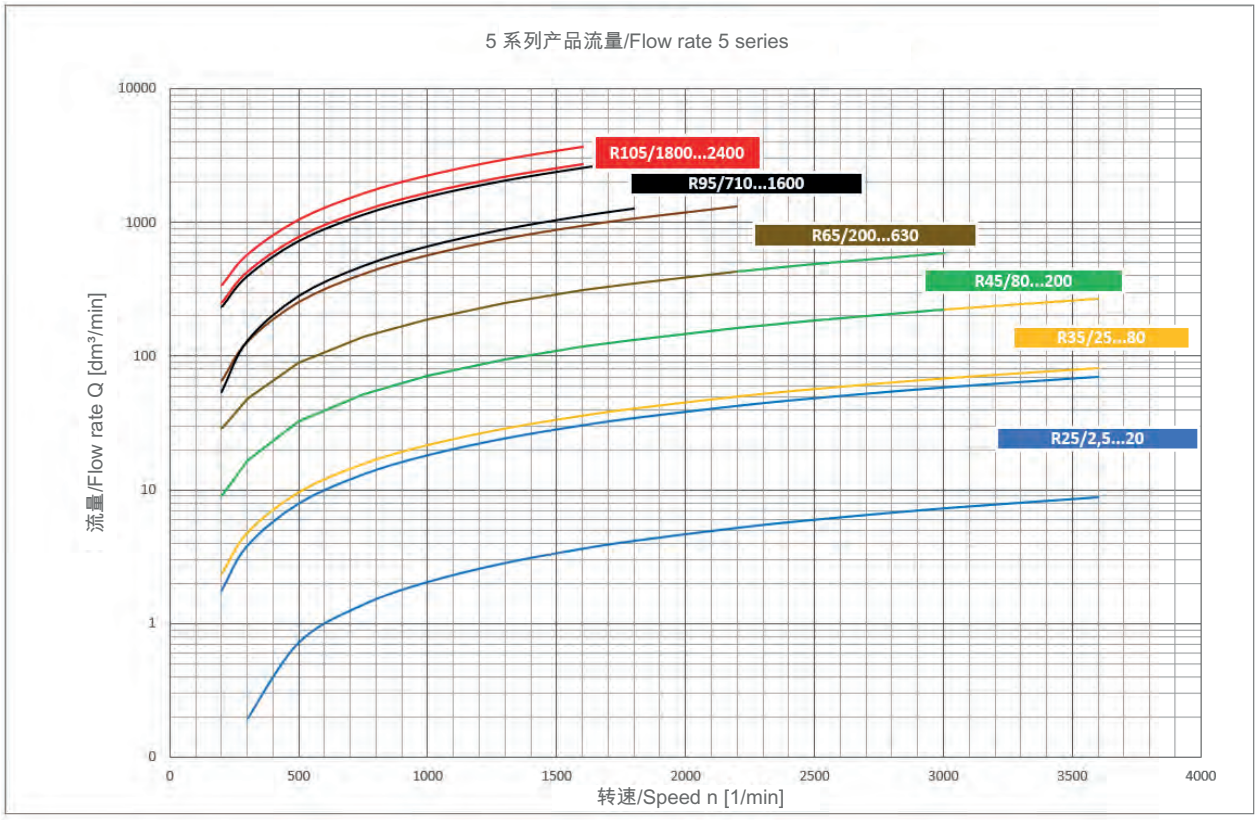
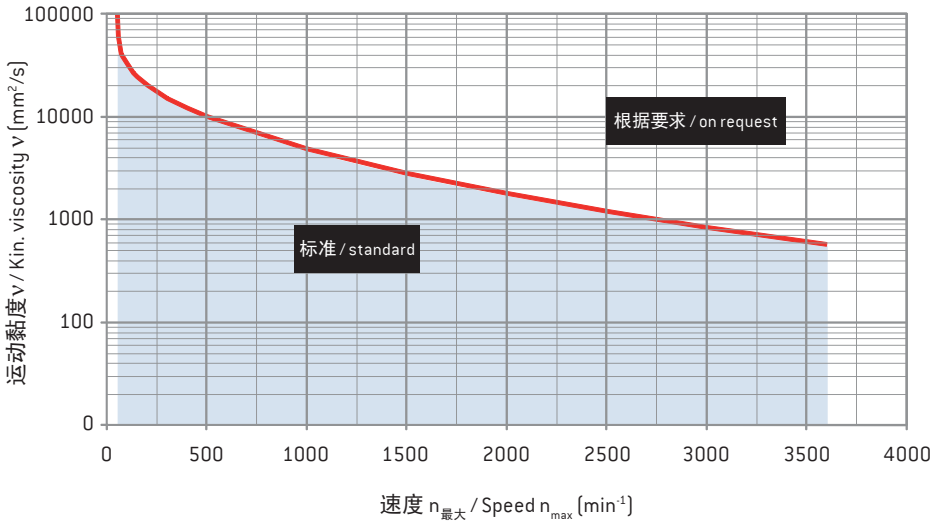


图 6: 标准齿轮泵的流量与转速
Fig. 6: Flow rate versus speed for standard gear pumps

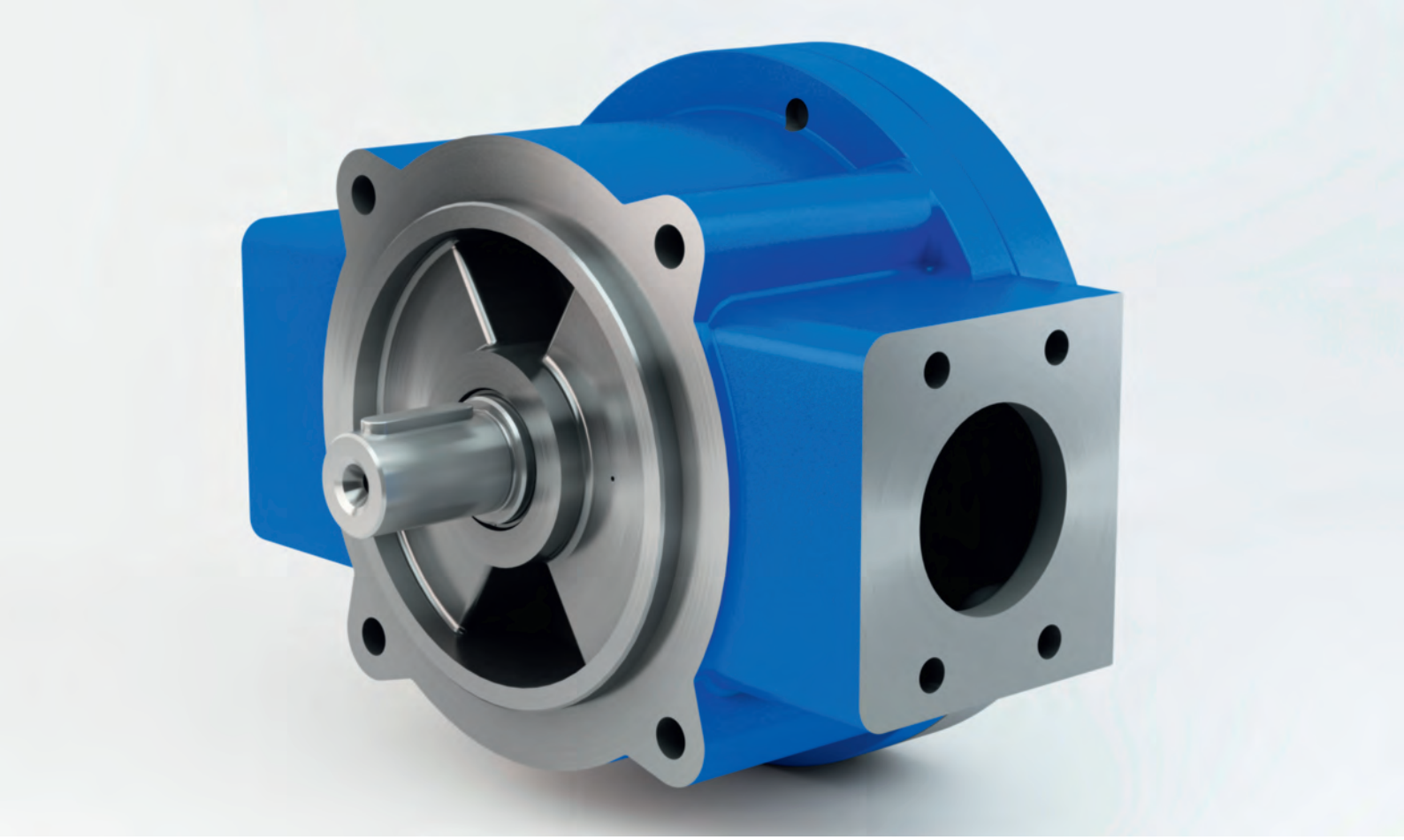
典型数值:
运动黏度 ν = 100 mm²/s
输出压力 p_2 = 12 bar
最大运行压力 p_2 = 25 bar
(R105: 12 bar)

Typical scopes at:
Kinematic viscosity ν = 100 mm²/s
Outlet pressure p_2 = 12 bar
Max. operating pressure p_2 = 25 bar
(R105: 12 bar)



抽吸压力 p_1 绝对值 ≥ 0.6 bar。
At any conditions suction pressure p_1 should be ≥ 0,6 bar abs.

图 7: 转速与运动黏度
Fig. 7: Speed versus kinematic viscosity



#3 UNI 泵 / UNI-PUMPS

通用泵
（UNI 泵： 内滚齿，机械驱动）

一般说明
“通用原则”
通常，泵驱动轴上的旋转方向反转会导致流动方向反转。无论何种驱动旋转方向，RICKMEIER 通用泵始终沿一个流动方向输送。此特性使得通用泵适用于所有不允许反转流动方向的应用。

由于不需要转换阀，通用泵可以紧凑地集成在例如风力发电设备、船舶齿轮箱或气体发生器中。当旋转方向反转时，通用泵会自动切换，同时保持流动方向。与其他解决方案相比，采用最少部件的复杂设计具有显著的优势。

RICKMEIER 通用泵维护需求低，不需要动态密封件和阀门等易损件。因此，即使没有维护也可以在超长的运行时间内使用这种泵

UNIVERSAL PUMPS (UNI-Pumps: Internally geared, mechanically driven)

General description
The “Universal principle”
Usually an inverted sense of rotation at the input shaft of a pump leads to an inverted flow direction of the pump. Regardless of the sense of rotation RICKMEIER UNI-Pumps generate a flow in one direction. This feature predestines UNI-pumps for any application, in which a reversed flow of the medium is not permitted.

For example in wind turbines, marine gears or gas generators, the UNI-pump allows a compact integration as no switching valves are required. The UNI-pump handles the reversed rotation at its input shaft by itself keeping the flow direction always the same. The well-thought-out design with a minimum number of parts has substantial advantages compared to other solutions.

RICKMEIER UNI-Pumps require low maintenance. Wear parts-parts like dynamic seals and valves are not necessary. Therefore long operating periods without service are possible.

功能

泵主要包括外壳 (1)、齿轮罩 (2)、驱动轴 (3)和链轮 (4)。齿轮罩 (2) 通过入口和出口以液压方式与外壳 (1) 连接。齿轮罩在外壳内可旋转至两个位置，而这两个位置彼此成 180° 的角度。

驱动轴 (3) 驱动链轮 (4)。

根据旋转方向，齿轮罩 (2) 旋转直到其到达齿轮罩 (2) 的入口和出口以及外壳 (1) 的入口和出口与设定的流动方向一致的位置。

当驱动轴 (3) 的旋转方向反转时，齿轮罩 (2) 沿另一个方向旋转。于是，入口和出口在内部切换，从而确保流动方向恒定,满足要求。

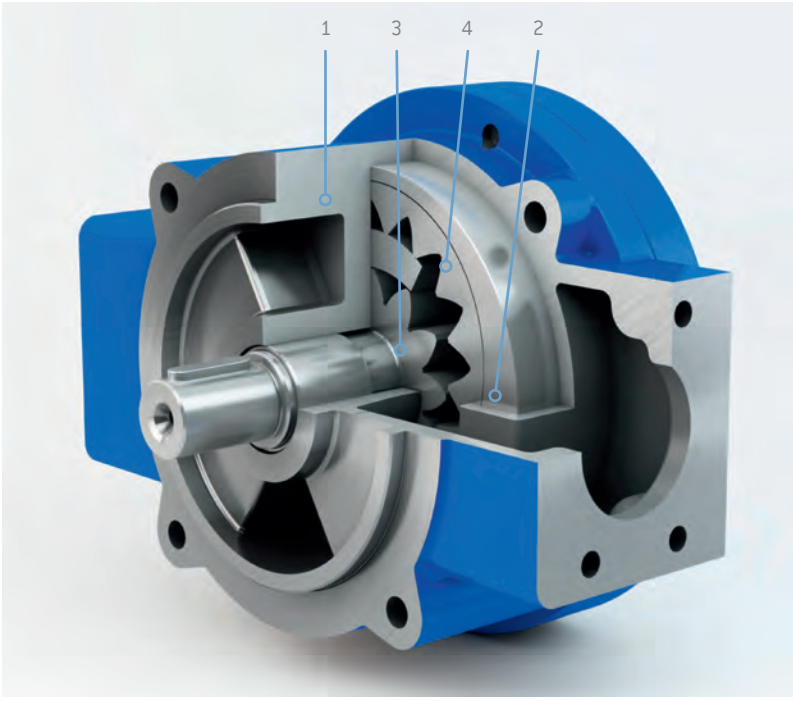


图 8: UNI 泵
Fig. 8: UNI-Pump

FUNCTION

The pump basically consists of an outer casing (1), gear casing (2), driving gear shaft (3) and the gear ring (4). The gear casing (2) is hydraulically linked by intake and outlet openings with the outer casing (1). It is rotatable in the outer casing, where it can remain in 2 different positions which are 180° to one another.

The input gear shaft (3) drives the gear ring (4).

Depending on the sense of rotation the gear casing (2) will be rotated until it reaches the position, where inlet and outlet of the gear casing (2) and outer casing (1) align to the intended flow of direction.

If the sense of rotation at the input shaft gear (3) is reversed, the gear casing (2) is rotated to the opposite direction. As a result inlet and outlet are interchanged internally keeping the flow of the pump unidirectional as intended.

UNI 泵可用的规格和型号

UNI 泵涵盖了35 cm^3/U 至 160 cm^3/U 的排量。
您需要其他的流量或者特殊规格？那就请您与我们联系吧！

AVAILABLE DESIGNS AND TYPES OF UNI-PUMPS

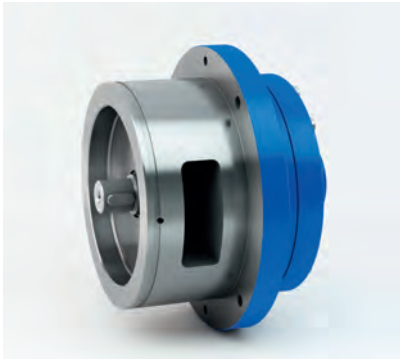
UNI-Pumps cover the range of displacement volumes from 35 cm^3/rev up to 160 cm^3/rev.
If your application requires different flow rates or customization, please get in touch with us.

液压连接派生型
VARIANTS OF HYDRAULIC CONNECTION

以下示例简单介绍了RICKMEIER UNI 泵的可行方案。RICKMEIER 针对您的要求设计合适的解决方案！欢迎您来挑战我们！

The examples below give a peek on the variety of RICKMEIER-UNI-pumps. We are sure to have the right solution for your requirement – challenge us.

a) 法兰连接
a) Flange connection



b) 插接泵（无管道）
b) Plug in pump (no pipework)

c) 板式泵
（特殊制造，集成式管道）
c) Face mounting pump
(customized, pipework integrated)

驱动方案 / DRIVING CONCEPTS

a) 用于联轴器的轴端，带平键
a) Shaft end for coupling with parallel key

b) 带附加轴承的驱动齿轮
b) Pinion gear drive and add. bearing

c) 特殊规格
c) Customized solution

使用范围 / OPERATING LIMITATIONS

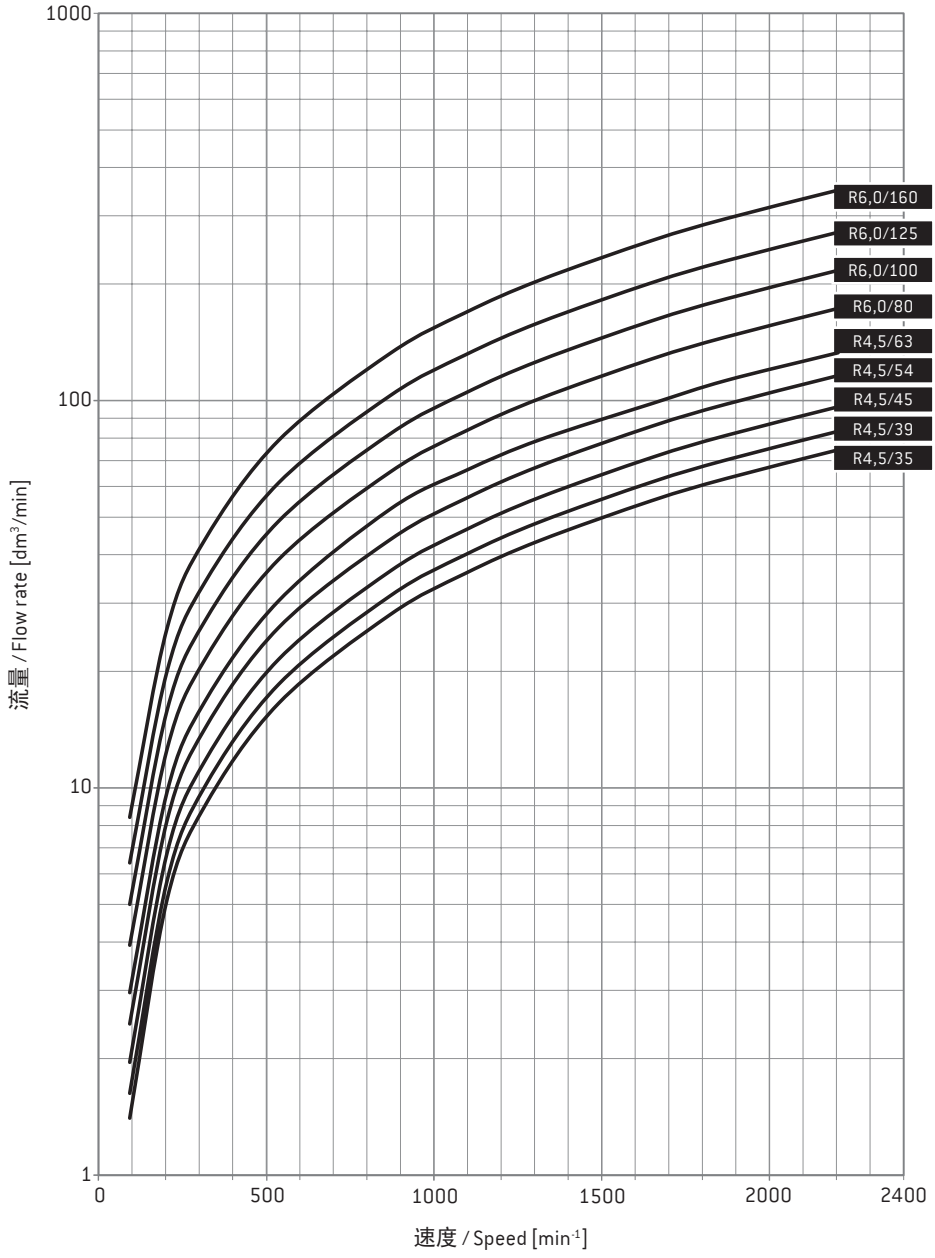
特性	单位	最小值	最大值
运动黏度	mm^2/s	7	100000[1]
液体污染程度	ISO 4406	-	21/19/17
气体含量（不可溶解）	Vol.-%	-	10[2]
工作温度（NBR 密封件）生存温度 (NBR)	°C	-30 -40	80
工作温度（FKM 密封件）生存温度 (FKM)	°C	-40 -40	100
抽吸压力	bar[3]	-0,5	0

1) 与泵转速有关，参见图 10
2) 介质中不可溶解的气体可能导致更高的噪音排放
3) 用压力计测定

CHARACTERISTIC	UNIT	MIN.	MAX.
Kinematic viscosity	mm^2/s	7	100000[1]
Degree of fluid contamination	ISO 4406	-	21/19/17
Gas content (undissolved)	Vol.-%	-	10[2]
Temperature (NBR seals) operating Temperature (NBR seals) survival	°C	-30 -40	80
Temperature (FKM seals) operating Temperature (FKM seals) survival	°C	-40 -40	100
Suction pressure	bar[3]	-0,5	0

1) Depending on pump speed, see fig. 10
2) Undissolved gas in the medium may cause higher noise emissions
3) Manometric

通用泵“UNI”的流量和转速
FLOW RATE AND SPEED LIMITS OF UNIVERSAL GEAR PUMPS “UNI”



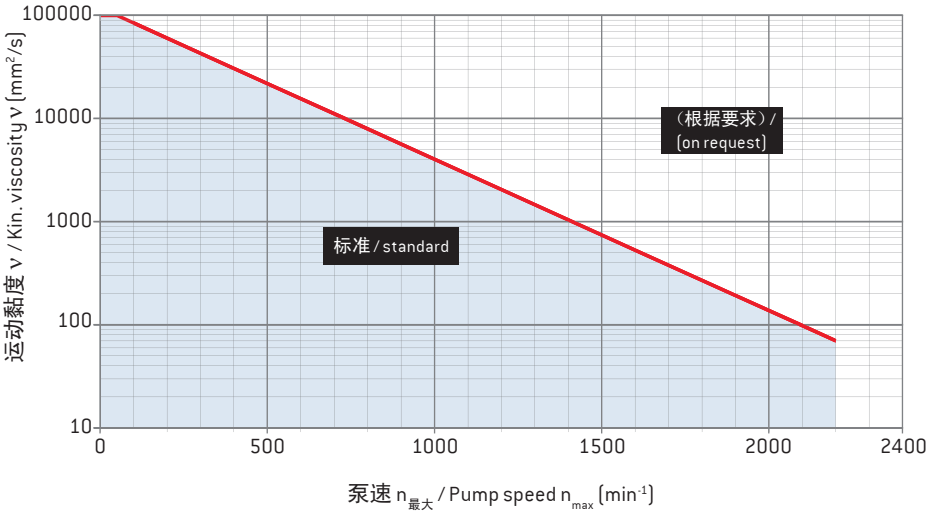
典型数值：
运动黏度 ν = 100 mm²/s
输出压力 p_2 = 12 bar
最大运行压力 p_2 = 25 bar

Typical scopes at:
Kinematic viscosity ν = 100 mm²/s
Outlet pressure p_2 = 12 bar
Max. operating pressure p_2 = 25 bar

示例：**R 6.0/160** FL-Z-SAE2.1/2-UNI-...
约 230 dm³/min @ 1500 r/min
最大压力 = 25 bar
Example: **R 6,0/160** FL-Z-SAE2.1/2-UNI-...
Approx. 230 dm³/min @ 1500 rpm
Max. pressure = 25 bar

示例：**R 4.5/35** FL-Z-G1-UNI-...
约 50 dm³/min @ 1500 r/min
最大压力 = 25 bar
Example: **R 4,5/35** FL-Z-G1-UNI-...
Approx. 50 dm³/min @ 1500 rpm
Max. pressure = 25 bar

图 *9*：流量与转速
通用齿轮泵 “*UNI*”
Fig. 9: Flow rate versus speed for universal gear pumps “UNI”



抽吸压力 p_1 绝对值 ≥ 0.6 bar。
At any conditions suction pressure p_1 should be ≥ 0,6 bar abs.

图 *10*：转速与运动黏度
Fig. 10: Speed versus kinematic viscosity

#4 RICKMEIER 解决方案 / SOLUTIONS

2.1 兆瓦级齿轮箱搭配 RICKMEIER UNI 泵

2.1 MW gear box with RICKMEIER UNI-Pump

风力发电齿轮箱，2.1 MW
Wind energy gear box, 2.1 MW

RICKMEIER UNI 泵
UNI 泵 R4.5/35 带内部和外部的机油循环
重要参数：约 66 立方分米/分钟@2000 转/分钟
运行压力：最大 25 bar
RICKMEIER Uni-Pump
UNI-Pump R4,5/35 with internal and external oil flow
Main data: Appr. 66 dm^3/min @ 2000 rpm
Working pressure: Max. 25 bar

燃气发动机 4.4 MW
Genset gas engine, 4.4 MW

4.4 兆瓦级燃气发动机搭配 RICKMEIER 主油泵和辅油泵

RICKMEIER 产品：
1.RICKMEIER R95/1400 泵
约 2200 立方分米/分钟@1700 转/分钟
运行压力：12 bar（最大 25 bar）
2.RICKMEIER 辅助泵 R65/630
约 860 立方分米/分钟 @ 1450 转/分钟
运行压力：5 bar（最大 25 bar）

4.4 MW GAS ENGINE WITH RICKMEIER MAIN AND AUXILIARY OIL PUMPS

RICKMEIER PRODUCTS:
1. RICKMEIER R95/1400 pump
Appr. 2200 dm^3/min @ 1700 rpm
Working pressure: 12 bar (max. 25 bar)
2. RICKMEIER Auxiliary pump R65/630
Appr. 860 dm^3/min @ 1450 rpm
Working pressure: 5 bar (max. 25 bar)

用于柴油发动机的可选燃料泵：
RICKMEIER 燃油泵 R35/50
约 70 立方分米/分钟@1800 转/分钟
运行压力：13 bar
抽吸压力：0.6 bar 绝对值
运动黏度：> 1.5 mm^2/s

OPTIONAL RICKMEIER PRODUCT FOR DIESEL ENGINES:
RICKMEIER fuel oil pump R35/50
Appr. 70 dm^3/min @ 1800 rpm
Working pressure: 13 bar
Suction pressure: 0.6 bar abs.
Kinematic Viscosity: > 1,5 mm^2/s

RICKMEIER 解决方案 / SOLUTIONS

溢流阀 DBV125：

标称尺寸：DN125
流量（最大）：5000 立方分米/分钟
压力限制：40 bar 以下

Pressure relief valve DBV125:

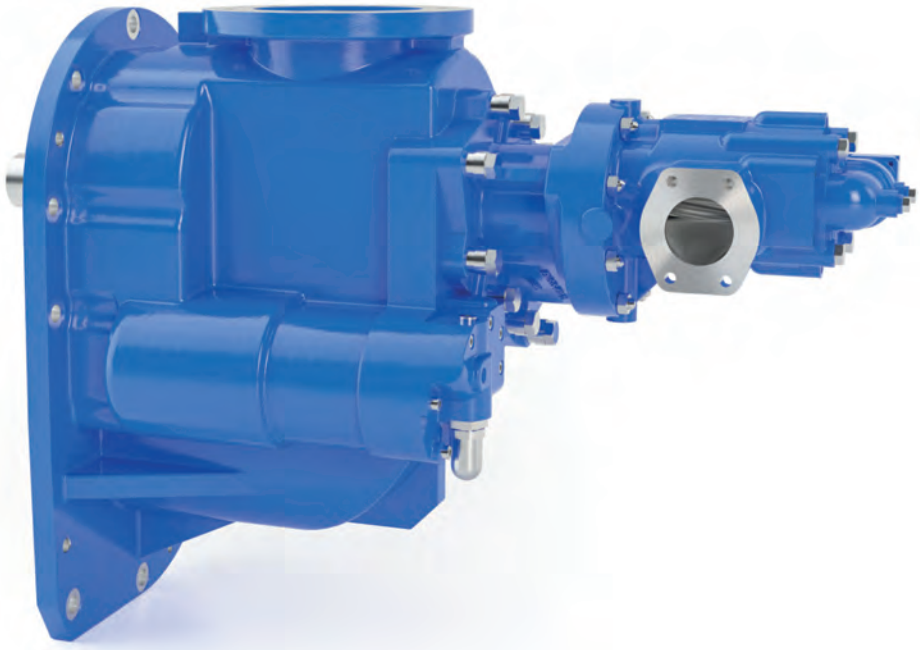
Nominal size: DN125
Flow rate (max.): 5000 dm^3/min
Max. pressure: Up to 40 bar

齿轮泵 R129

1. RICKMEIER 润滑油泵
R129A/2665
泵转速：1485 转/分钟
运行压力：7.5 bar
流量：3670 l/min
2. 燃油泵 **R49/160**
泵转速：1485 转/分钟
运行压力：6.5 bar
流量：200 l/min

Gear Pump R129

1. RICKMEIER Lube Oil Pump
R129A/2665
Pump speed: 1485 rpm
Working pressure: 7,5 bar
Flow Rate: 3670 l/min
2. Fuel Oil Pump R49/160
Pump speed: 1485 rpm
Working pressure: 6,5 bar
Flow Rate: 200 l/min



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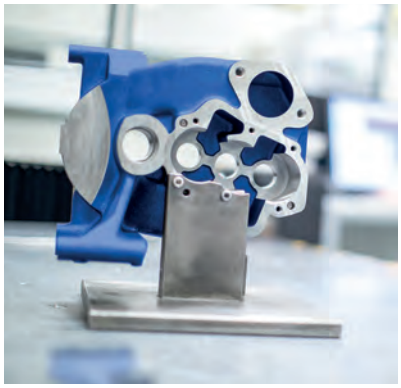

RICKMEIER.
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