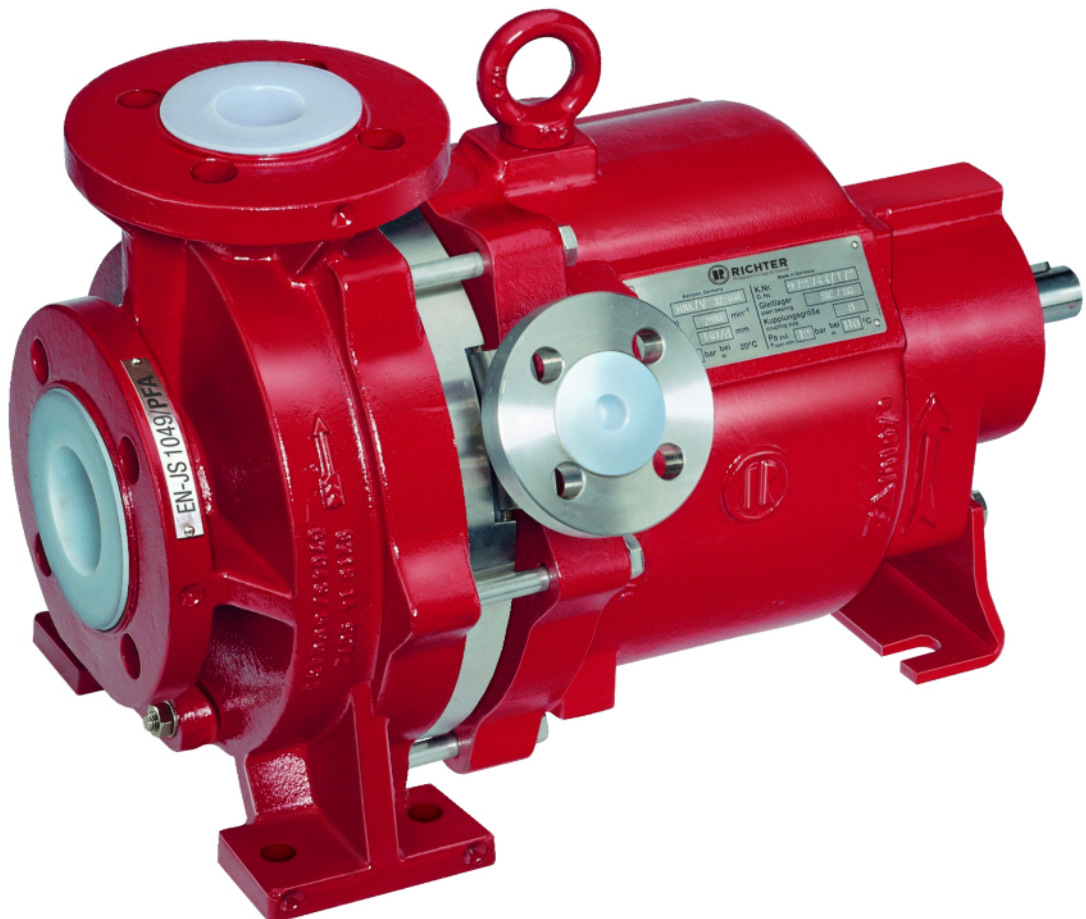


SUPPLEMENTARY INSTALLATION AND OPERATING MANUAL

Translation of the original manual

Series MNK-X, MNK-XB, SCK-X Frame-mounted Chemical Vortex Pumps



Keep for future use!

This operating manual must be strictly observed before transport, installation, operation and maintenance

Subject to change without notice.

Reproduction is generally permitted with indication of the source.

© Richter Chemie-Technik GmbH

9230-061-en Revision 10 Edition 03/2010

List of Contents

List of Contents	2	5 Commissioning / Shutdown	4
Relevant documents	2	5.1 Initial commissioning	4
1 Technical data	2	5.2 Shutdown.....	4
1.1 Intended use.....	3	5.3 Improper operations and their consequences	4
1.2 Name plate	3	6 Maintenance	4
2 Safety, transport, storage and disposal	3	6.1 Notes on dismantling	4
3 Product description	3	7 Sectional drawing	5
4 Installation	4	7.1 MNK-X vortex design	5
4.1 Safety regulations.....	4	7.2 SCK-X vortex design	6

Relevant documents

This supplementary installation and operating manual is only valid in conjunction with these installation and operating manuals:

MNK long life grease and oil bath lubrication
9230-050-en
MNK-B close-coupled design 9230-055-en

SCK long life grease and oil bath lubrication
9220-050-en

Appendix to the operating manual

◆ Operational limits 9200-00-3031

1 Technical data

Manufacturer :

Richter Chemie-Technik GmbH
Otto-Schott-Str. 2
D-47906 Kempen
Telephone: +49 (0) 2152 146-0
Fax: +49 (0) 2152 146-190
E-Mail: richter-info@idexcorp.com
Internet: <http://www.richter-ct.com>

Authorised person acc. to machinery directive
2006/42/EG: Gregor Kleining

All technical data can be found in the installation and operating manuals for the relevant pumps MNK, MNK-B or SCK.

Designation:

Vortex design of single-stage, plastic-lined centrifugal chemical pumps.

Series: MNK-X, long life grease lubrication
MNK-X, oil bath lubrication
MNK-XB, close-coupled design

SCK-X, long life grease lubrication
SCK-X, oil bath lubrication

Heavy-duty horizontal design

Technical specifications to ISO 15783 and DIN ISO 5199

Face to face according to ISO 2858 / DIN EN 22858

Flange connecting dimensions:

DIN EN 1092-2, type B (ISO 7005-2, type B) PN 16
or flanges drilled to ASME 16.5, Class 150

ATEX 95 Directive 94/9/EC

Machine Directive 2006/42/EC

Temperature classes:

See installation and operating manual MNK, MNK-B or SCK in **Section 2.6.7**

Admissible ambient conditions for pumps acc. to directive 94/9/ EG (ATEX 95) :

Ambient temperature range: - 20 °C to + 40 °C
(higher temperature after consulting the manufacturer)

Ambient pressure range: 0,8 bar_{abs} to 1,1 bar_{abs}.

1.1 Intended use

Richter pumps of the series MNK-X, MNK-XB and SCK-X are plastic-lined centrifugal pumps for the conveyance of aggressive, toxic, pure and inflammable liquids.

Vortex pumps are preferably used with highly solids-laden media.

Field of application:

For media with

- ◆ high solids content, depending on the grain size and condition
- ◆ particle sizes of roughly 10 – 20 mm, depending on the pump size
- ◆ long-fibre constituents
- ◆ gas contents of up to 5 % by vol. If gas is entrained in an explosive area, it must be ensured that no explosive atmosphere enters the pump as a result of the gas conveyed.



In view of the large number of possible particle properties (size, shape, density etc.) it is not possible to delimit the solids accurately in advance.

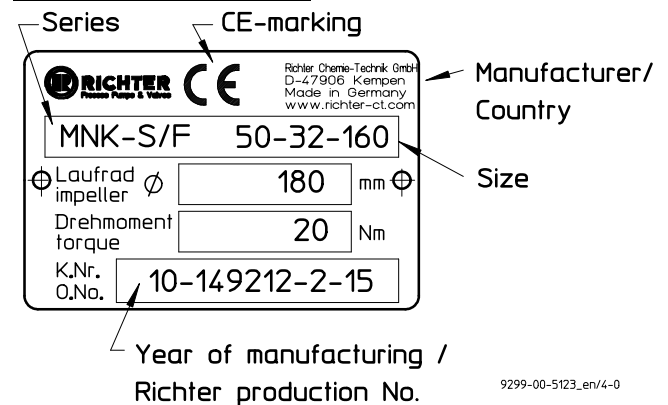
Richter therefore recommends the use of motor load monitors, for example, to monitor the pump power.

1.2 Name plate

The stainless steel name plate is firmly riveted to the bearing pedestal.

If the customer attaches his identification, it must be ensured that the pump matches the application in question.

Example of name plate:



9299-00-5123_en/4-0

2 Safety, transport, storage and disposal

The relevant chapters in the adjacent installation and operating manuals apply to safety, transport, storage and disposal.

This **Supplementary Installation and Operating Manual** is only valid, depending on the selected design, in conjunction with the following installation and operating manuals:

MNK	long life grease and oil bath lubrication	9230-050-en
MNK-B	close-coupled design	9230-055-en
SCK	long life grease and oil bath lubrication	9220-050-en

3 Product description

The housing dimensions, power ratings and technical requirements of the pump series MNK-X, MNK-XB and SCK-X comply with ISO 2858 / DIN EN 22858 / ISO 15783 / DIN ISO 5199. The technical requirements of VDMA 24279 are satisfied.

The **sectional drawing** shows the vortex design. See **Section 7**.

All components which come into contact with the medium are either plastic-lined or made of other resistant materials, e.g. silicon carbide.

4 Installation

4.1 Safety regulations



Equipment which is operated in potentially explosive areas must satisfy the explosion protection regulations.

It is imperative to observe the safety regulations contained in the respective installation and operating manuals.

With magnetic drive pumps MNK-X, MNK-XB:



People with a pacemaker are at risk from the strong magnetic field of the magnetic drive. It may be life-threatening for them to stay at a distance of less than 500 mm from the pump.

5 Commissioning / Shutdown

The general commissioning/shutdown procedures have already been described in the installation and operating manuals of the pumps of the series MNK, MNK-B, SCK. They relate, for example, to work or inspections of the bearing pedestal, coupling and motor.



If the pump is to be evacuated or flushed, observe the local regulations. If the pump is to be returned to the company's own workshops or the manufacturer's, it must be cleaned especially thoroughly.

See also Section 3.1.

5.1 Initial commissioning

Normally, the pumps have already been test-run with water. Unless special agreements have been made, there could still be residual amounts of water in the pump. This must be noted in view of a possible reaction with the medium.

5.3 Improper operations and their consequences



Inadmissible modes of operation, even for a short time, can result in serious damage to the unit.

In connection with explosion protection, potential sources of ignition (overheating, electrostatic and induced charges, mechanical and electric sparks) may result from these inadmissible modes of operation; their occurrence can only be prevented by adhering to the intended use.

Depending on the design selected, refer to the relevant operating manual MNK, MNK-B or SCK.

5.2 Shutdown



Only close the suction line if the pump is to be evacuated or dismantled.

6 Maintenance

6.1 Notes on dismantling

All repair and maintenance work is to be performed by qualified staff using appropriate tools and original spare parts.

Is the necessary **documentation** available?

Has the pump been taken out of operation, evacuated and flushed correctly?

See also Section 5.2.

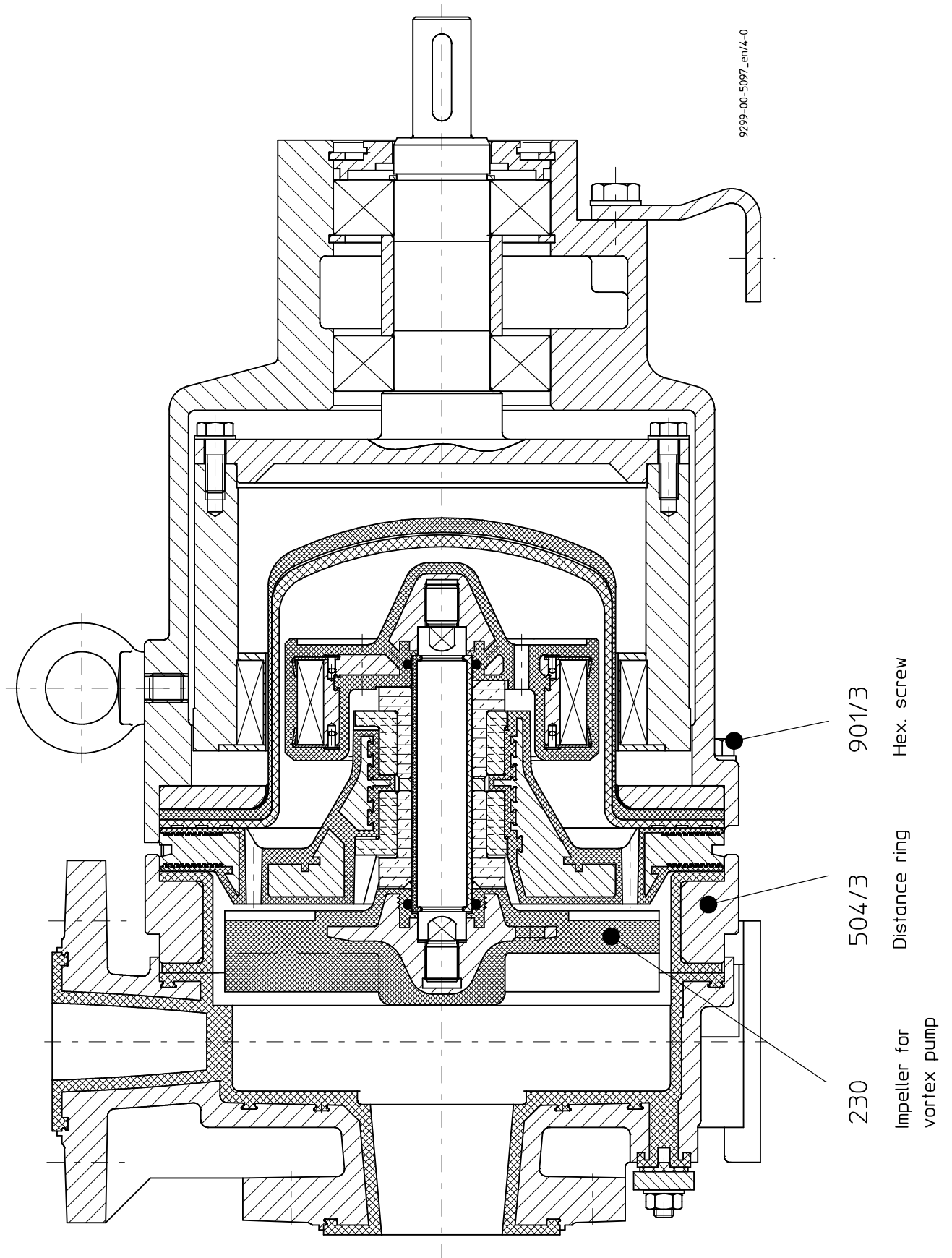
The pump is dismantled and assembled in accordance with the operating manual.

The difference between a standard pump and a vortex pump is:

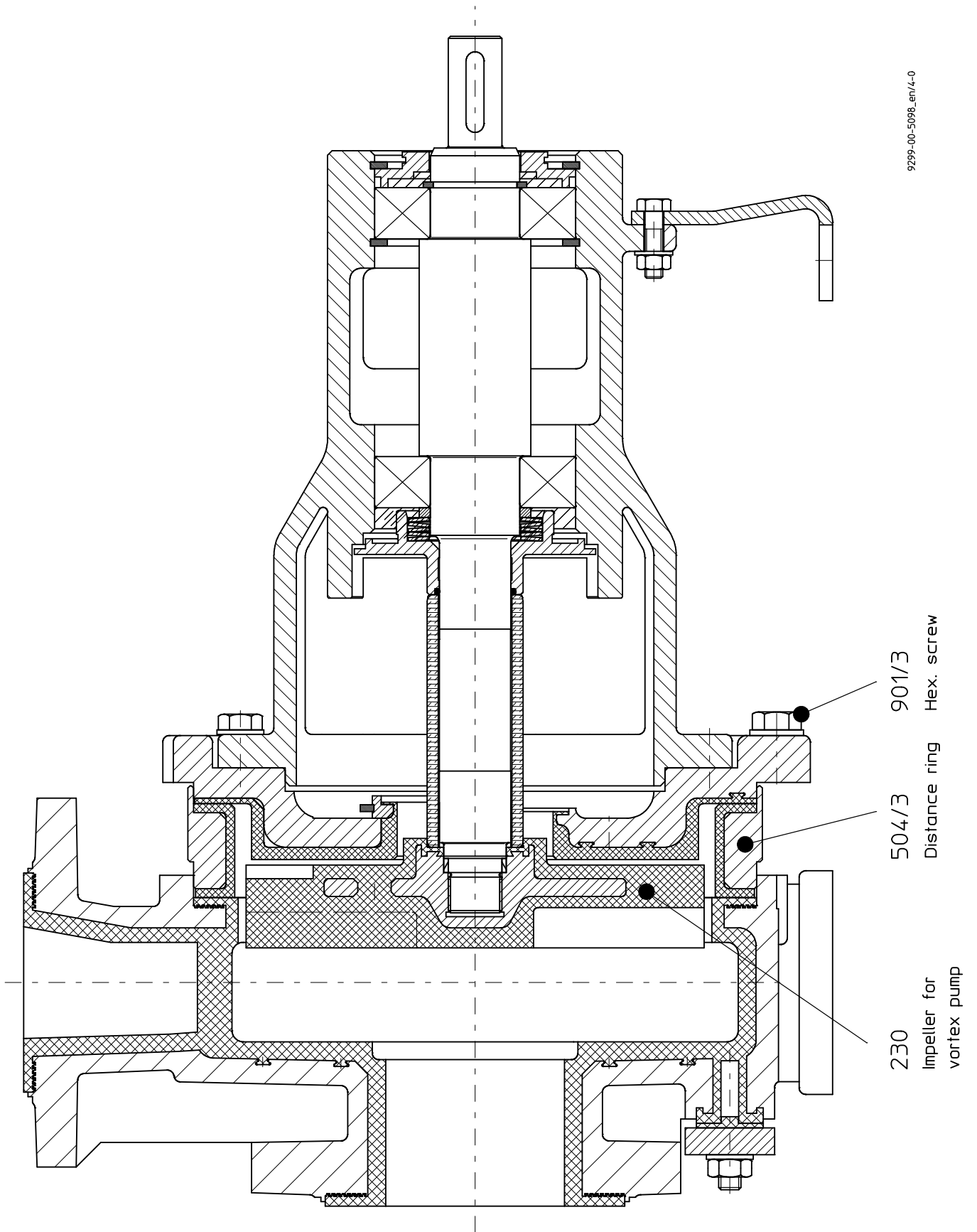
- ◆ vortex impeller **230**
- ◆ a distance ring **504/3** instead of a housing gasket
- ◆ longer hex. screws **901/3** owing to the larger distance in front of the impeller.

7 Sectional drawing

7.1 MNK-X vortex design



7.2 SCK-X vortex design



Baureihe/Series/Série

SCK-X
MNK-X
MNK-XB

Ausführung

**Magnetkuppungs- und
Gleitringdichtungspumpen**

Design

**Magnet drive and
mechanical seal pumps**

Construction

**Pompes à entraînement magnétique en
à garniture mécanique**



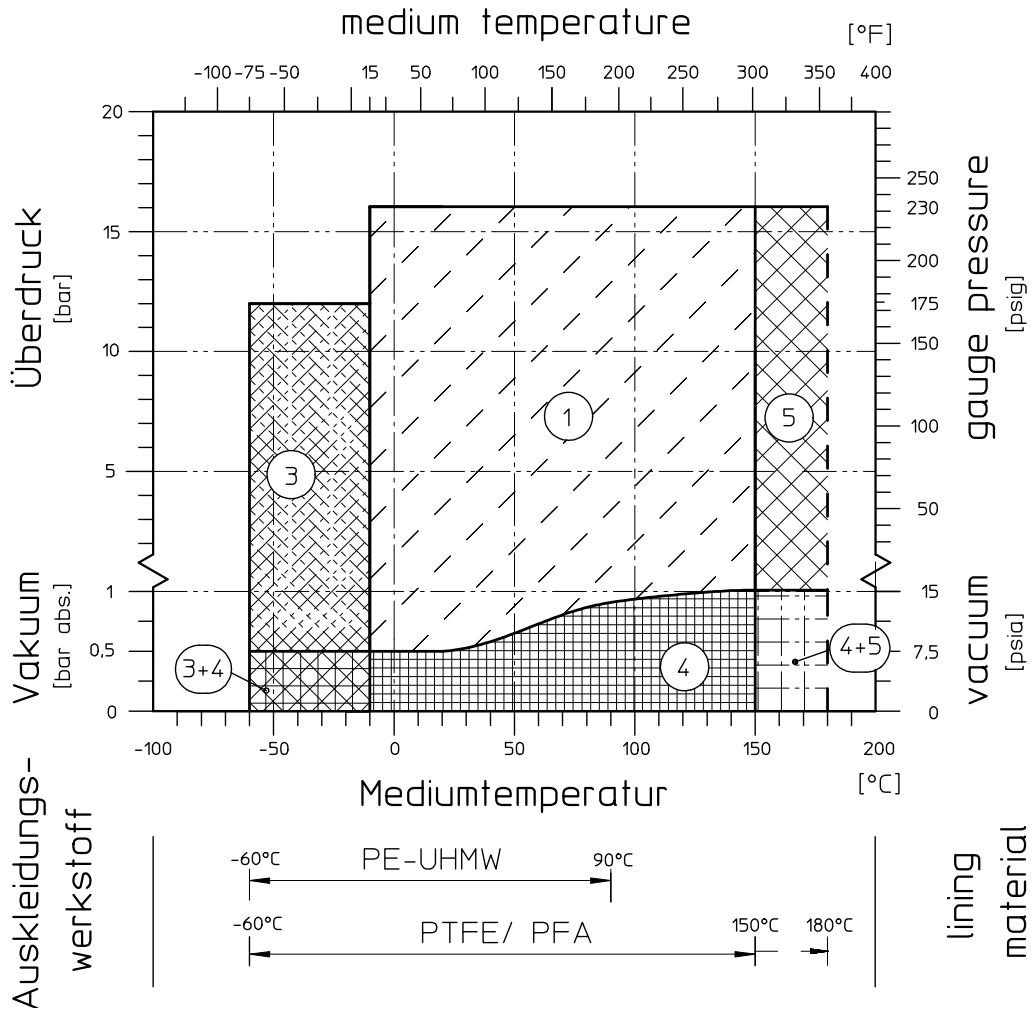
Modification techniques possibles sans réservations!
Graphique non à l'échelle!
Dimensions valables uniquement revêtues d'une signature!

This leaflet is subject to alteration!
Drawing not to scale!
Certified for construction purposes only when signed!

Technische Änderungen vorbehalten!
Nicht maßstäblich!
Maße nur mit Unterschrift verbindlich!

Einsatzgrenzen / operating limits

Baugrößen / Size: 25-25-125, 50-32-125, 50-32-200, 65-40-200, 80-50-200



**SCK-X Einsatzgrenzen der Gleitringdichtung beachten!
Observe the operating limits of the mechanical seal!**

Baureihe/Series/Série

SCK-X
MNK-X
MNK-XB

Ausführung

**Magnetkupplungs- und
Gleitringdichtungspumpen**

Design

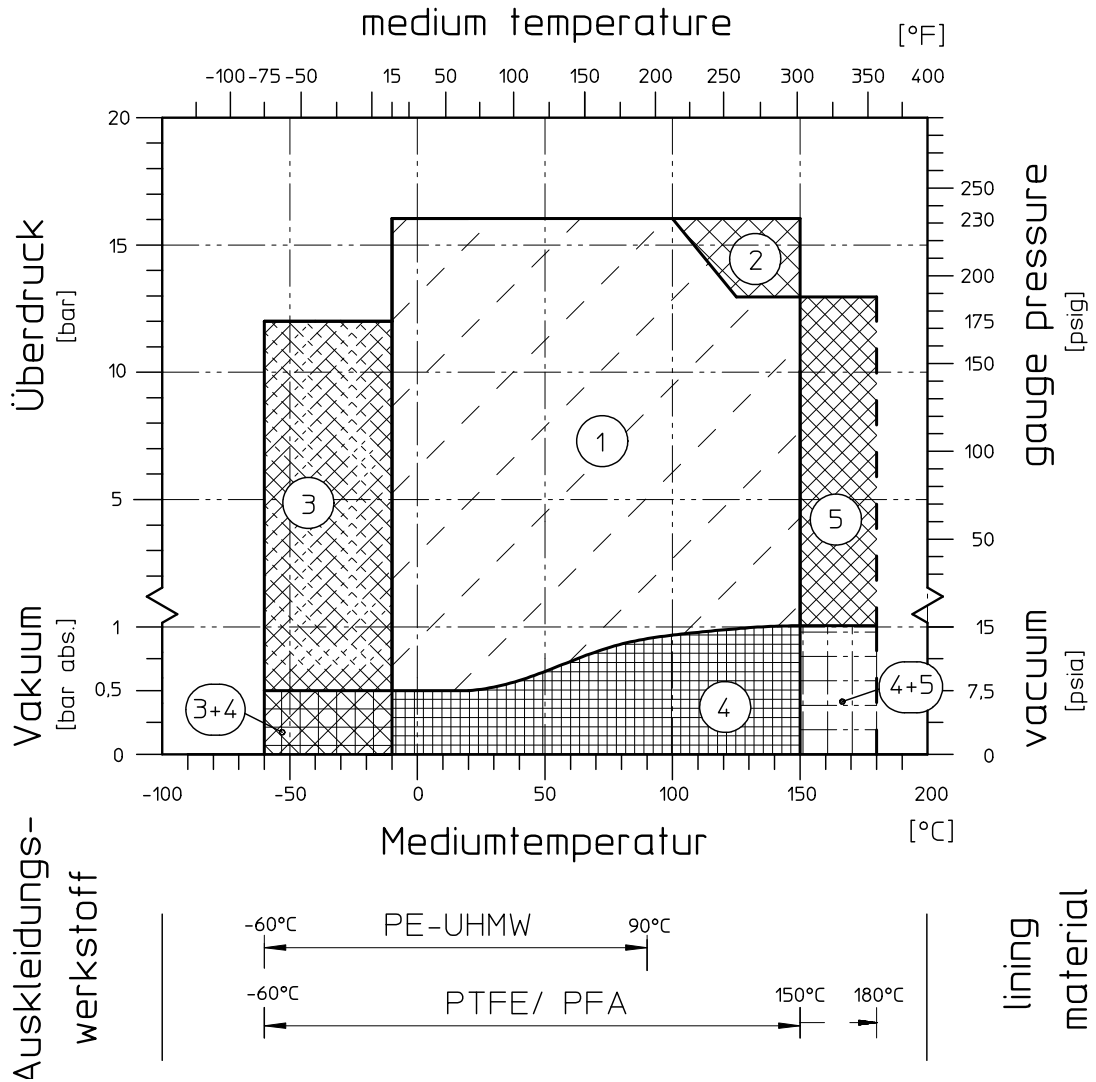
**Magnet drive and
mechanical seal pumps**

Construction

**Pompes à entraînement magnétique en
à garniture mécanique**



Baugrößen / Size: 25-25-160, 50-32-160, 80-50-160, 125-80-200, 125-100-200, 80-50-250



**SCK-X Einsatzgrenzen der Gleitringdichtung beachten!
Observe the operating limits of the mechanical seal!**

Modification techniques possibles sans réserves!
Graphique non à l'échelle!
Dimensions valables uniquement revêtues d'une signature!

This leaflet is subject to alteration!
Drawing not to scale!
Certified for construction purposes only when signed!

Technische Änderungen vorbehalten!
Nicht maßstäblich!
Maße nur mit Unterschrift verbindlich!

Baureihe/Series/Série

SCK-X
MNK-X
MNK-XB

Ausführung

Design

Construction

**Magnetkupplungs- und
Gleitringdichtungspumpen**

**Magnet drive and
mechanical seal pumps**

**Pompes à entraînement magnétique en
à garniture mécanique**



Legende:

- 1 Standard
Bei Einsatz unter ASME-Bedingungen
(Sphäroguss nach A395) kann der
Standardbereich auf -30°C und 16bar
erweitert werden.
- 2 Höhere Betriebsdrücke durch Druckringe
- 3 Tiefere Temperaturen durch Sondermaterial
- 4 Höheres Vakuum bei Pumpenstillstand durch
Sonderspalttopfseinheit
- 5 Höhere Temperaturen durch CFK-H Spalttopf

Legend:

- Standard
Application under ASME-specification
(ductile iron acc. to A395)
the standard range can be expanded
up to -30 °C and 16 bar.
- Higher operating pressure by pressure rings
- Lower temperatures by special materials
- Higher vacuum at pump standstill by special
can unit
- Higher temperatures by can of CFK-H

Modification techniques possibles sans réservations!
Graphique non à l'échelle!
Dimensions variables uniquement revêtues d'une signature!

This leaflet is subject to alteration!
Drawing not to scale!
Certified for construction purposes only when signed!

Technische Änderungen vorbehalten!
Nicht maßstäblich!
Maße nur mit Unterschrift verbindlich!