



KINEMATICA

Homogenizing perfected.

REACTRON®



REACTRON® System RT 2 E Operating Instructions

OPERATING INSTRUCTIONS			
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Type	RT 2 E		
Issue	3.0 / 01.07.2018		
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1 INTRODUCTION

This chapter gives information on the the structure of this document. It will assist you in making use of it and show how to find the required information quickly.

1.1 OPERATING INSTRUCTIONS

Please read through these operating instructions before switching on or attempting to use the equipment. They describe the use of the REACTRON® RT 2 E, its installation and maintenance and the appropriate replacement parts and accessories.

They will help you avoid erroneous use and consequent damage. Although REACTRON® machines are designed for ease of service, this does not release you from the obligation to inspect your equipment carefully and to clean it thoroughly.

KINEMATICA AG is a specialist manufacturer of machines and equipment for dispersing and mixing technology.

An important objective of these operating instructions is to fully inform you, the user, about the correct and safe use of our equipment.

In order to achieve this, it is essential that you should carefully study chapter 2, "Safety", and follow the instructions in this book.

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1.1.1 RANGE OF VALIDITY

The data mentioned in this document refer to the machine(s)/ unit(s) with the following identification:

Manufacturer: KINEMATICA AG, CH-6014 Luzern
 Brand name: REACTRON®
 Product name: REACTRON® System RT 2 E

	Order-Code	Identification
Base System	14090030	REACTRON® RT 2 E standard configuration, 230V (with EU-plug)
	14090031	REACTRON® RT 2 E standard configuration, 230V (with CH-plug)
	14090032	REACTRON® RT 2 E standard configuration, 115V
	14095010	POLYMIX® PX-SR 90 D with digital display, instead of PX-SR 50 E
	14095070	Funnel 1 ½" Tri-Clamp
Dispersing-Systems	14095030	POLYTRON® PT 10-35 GT, 230 V with dispersing aggregate PT-DA 3030/4G (mechanical seal version) and clamp for the clamp connection on the cover suitable for the RT 2 and RT 2 E, with EU-plug
	14095031	POLYTRON® PT 10-35 GT, 115V with dispersing aggregate PT-DA 3030/4G (mechanical seal version) and clamp for the clamp connection on the cover, suitable for the RT 2 and RT 2 E, with 115V-plug
	14095032	POLYTRON® PT 10-35 GT, 230 V with dispersing aggregate PT-DA 3030/4G (mechanical seal version) and clamp for the clamp connection on the cover suitable for the RT 2 and RT 2 E, with CH-plug
Temperature Controlling	14095040	Heating thermostat 230V, temp. Range 35°C-300°C, heating power 3.5 kW, max. 0.7 bar, max. 25 l/min
	14095041	Heating thermostat 115V, temp. Range 35°C-300°C, heating power 3.5 kW, max. 0.7 bar, max. 25 l/min
	14095042	Bath fluid, 10 liters, destilated water for temperatures between 5 - 90°C
	14095043	Complete tubings made from VITON
	14095044	Temperature measuring device with Pt 100 sensor and LC display box, 230V/EU
	14095045	Temperature measuring device with Pt 100 sensor and LC display box, 230V/CH
	14095046	Temperature measuring device with Pt 100 sensor and LC display box, 115V

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	Order-Code	Identification
Vacuum Controlling	14095050	Single step vacuum system for vacuum down to 100 mbar with single-step chemical diaphragm pump with tubings and digital vacuum controller with key pad and LED-display, 230V / EU
	14095051	Single step vacuum system for vacuum down to 100 mbar with single-step chemical diaphragm pump with tubings and digital vacuum controller with key pad and LED-display, 230V / CH
	14095052	Single step vacuum system for vacuum down to 100 mbar with single-step chemical diaphragm pump with tubings and digital vacuum controller with key pad and LED-display, 115V
	14095053	Double step vacuum system for vacuum down to 25 mbar with double-step chemical diaphragm pump with tubings and digital vacuum controller with key pad and LED-display, 230V / EU
	14095054	Double step vacuum system for vacuum down to 25 mbar with double-step chemical diaphragm pump with tubings and digital vacuum controller with key pad and LED-display, 230V / CH
	14095055	Double step vacuum system for vacuum down to 25 mbar with double-step chemical diaphragm pump with tubings and digital vacuum controller with key pad and LED-display, 115V
	14095056	LVS Laboratory vacuum system 2-step, 230V (EU)
	14095057	LVS Laboratory vacuum system 2-step, 230V (CH), details see above
	14095058	LVS Laboratory vacuum system 2-step, 115V, details see above
	14095060	Vacuum hose connection for Clamp 1 1/2" fittings suitable for RT 2 / RT 2 E – Systems, made of stainless steel 316 L, electropolished
	14095061	Steam trap with vessel 500 ml at suction side

1.1.2 TARGET AUDIENCE

These operating instructions are intended for all authorised users of our machines/equipment. We distinguish different user roles, taking account of the different demands placed on the user by the activity to be carried out.

You will find the definitions of user roles with the demands on the user in chapter 2, "Safety". You can fulfil one or more of these roles, provided that you meet the corresponding demands.

1.2 ORGANISATIONAL MATTERS

If you are unable to find the answer to any question in the operating instructions, please contact the equipment manufacturer directly.

1.2.1 LOCATION OF THE OPERATING INSTRUCTIONS

The operating instructions can only be of use to you if you always have them to hand. They should, therefore, always be kept at the place where the equipment is used.

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1.2.2 MANUFACTURER AND CONTACT ADDRESS

KINEMATICA AG

Luzernerstrasse 147a
CH-6014 Luzern
Switzerland

Tel.: +41-41-259 65 65
Fax: +41-41-259 65 75
e-mail: info@kinematica.ch

1.3 CONTENTS

If you are unable to find the answer to any question in the operating instructions, please contact the equipment manufacturer directly.
This should act as part of a quick-reference. The information is classified according to its application and topic and is divided into the following parts:

Chapter 1 INTRODUCTION

This chapter describes the structure of this document

Chapter 2 SAFETY

This chapter describes the safe use and optimum gain of the machine

Chapter 3 DESCRIPTION OF COMPONENTS

This chapter describes the components of the machine

Chapter 4 INSTALLATION AND START-UP

This chapter presents all information important for a safe installation and start-up of the machine.

Chapter 5 SERVICE AND MAINTENANCE

This chapter informs about service and maintenance.

Chapter 6 ORDERING OF SPARE PARTS

This chapter points out how to order spare parts and what kind of spares you should have in stock.

Chapter 7 FAULTS AND REMEDIES

In this chapter you will find indications about break down, possible cause and repair.

Chapter 8 WARRANTY

In this chapter the warranty limit is defined

Appendix DIMENSIONAL DRAWINGS

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1.4 WARNING NOTICES

Please be aware of the meaning of the following warning signs:



SAFETY INSTRUCTIONS MUST BE OBSERVED TO ENSURE SAFE OPERATION .



THIS SYMBOL INDICATES HIGH VOLTAGE, WITH RISK TO HEALTH AND ENVIRONMENT.



**CAUTION!
BEWARE OF HOT SURFACE.**



**CAUTION!
DEVICE NOT DESIGNED FOR USE IN EXPLOSION DANGER ENVIRONMENT.**

2 SAFETY

This chapter is directed at all users of KINEMATICA laboratory equipment. It includes information on safe and optimum use.

2.1 SUMMARY

Any incorrect use of the installed equipment can be dangerous. Inadequately trained users can cause material damage and personal injury. This chapter informs you of the safety concept and the requirements for safe and optimum use of the equipment.

All those authorised to operate, service and repair the equipment are required to study chapter 2, "Safety".

2.2 SAFETY CONCEPT

The safety concept sets down the entitlement to use the equipment and the responsibilities of the individual users.

The machines and equipment are designed and constructed according to the state of the art and the recognised safety rules.

2.2.1 INTENDED USE OF THE EQUIPMENT

The equipment is designed and constructed for the following use:

- Dispersion and homogenisation of pumpable fluid products in accordance with the technical specifications (see point 3.5) and compatibility with the materials coming into contact with the products.

If you use the equipment for any purpose other than those listed, the manufacturer cannot be held liable for any resulting damage.

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2.2.2 IMPROPER USE

Any use other than the “proper use” without the written approval of the manufacturer or operation outside the technical limits of use is improper use.

2.2.3 USER ROLES

To guarantee safety, we place requirements on the users of the equipment that must be met without fail. Only persons meeting the requirements are authorised to work with the equipment.

We describe all those who work with the equipment as users. Since the requirements of these users are very much dependent on their activity, we distinguish the following user roles.

Contract partner:

The manufacturer can impose legal obligations on the contract partner when the equipment is purchased. The contract partner is obliged to ensure that the equipment is properly used.

Operating company:

The operating company ensures that the equipment is properly used and authorises persons who are entitled to work with the equipment in any one of the defined user roles. He is under the obligation to instruct the users.

Note:

Contract partner and operating company can be the same person.

Service technician:

The service technician is an employee of the operating company and looks after the equipment in special operating mode(s). He is a specialist with mechanical, electrical and electronic professional training. The service technician undertakes commissioning, decommissioning service and repair of the equipment. He must be appropriately trained to be able to carry out the service work required.

Operator:

The operator turns the equipment on and off. In the event of an alarm signal he informs the service technician.

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2.2.4 DANGER AREA

System/equipment

The system danger area includes the whole system/equipment including the connecting lead and controls.

Proximity danger area

This refers to all areas within a defined distance of the equipment.

User danger area

This danger area includes all persons working with the equipment.

2.2.5 AREAS OF RESPONSIBILITY

In order that the system/equipment can be used safely and without risk, the users in various roles bear the responsibility for particular danger areas.

Contract partner:

The contract partner bears the responsibility for the "proximity danger area".

Operating company:

The operating company bears the responsibility for the "user danger area". Only those users may be authorised to operate the system/equipment who fulfil all requirements of the user roles concerned. In so doing, attention must be paid to the following points:

- It is to be ensured that all users of the system/equipment have fully read and understood chapter 2, "Safety" and act accordingly in a safety-conscious manner.
- It is to be ensured that no unauthorised person carries out work with the system/equipment.
- It is to be ensured that users are informed of the possible risks and dangers connected with the system/equipment.
- It is to be ensured that those being trained or engaged in general training are under the permanent supervision of a trained and authorised person.

Service technician:

The service technician bears the responsibility for the "system/equipment danger area". He ensures that the system/equipment is at all times free from technical faults, safe and functions correctly.

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2.2.6 GENERAL SAFETY RULES

Observe the following general safety rules:

- follow these operating instructions,
- in addition, observe the legal obligations and requirements for accident prevention and environmental protection of the country in which you operate the equipment,
- do not make any modifications to the equipment without the written authorisation of the manufacturer,
- only original replacement parts may be used for repairs,
- before any service work on the equipment, it must be ensured that the electrical supply is switched off,
- after any service, maintenance or repair work has been carried out on the system/equipment, it must be given a test run by the service technician.
- depending on the place at which it is installed, circumstances may require that hearing protection is worn when remaining in the vicinity of the equipment for long periods.

2.3 RESIDUAL DANGERS

When the system/equipment is used in accordance with rules and regulations, residual dangers are minimal.

Residual danger	Countermeasures	
Tripping over feed or return lines	These should be laid appropriately.	
Breakage of glass containers	Wear protective clothing (goggles etc.).	 
Spitting of the product		
Hearing loss due to loud noise.	According to the application ear protection must be used.	
Tilting of the device	Use stable, non-slip base and the safety stands from KINEMATICA	

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2.4 WARNINGS



THE MACHINE IS NOT ALLOWED TO BE OPERATED IN AN EXPLOSION-DANGERED ZONE!



DRY-RUN OF THE MECHANICAL SEAL AND/OR THE SLIDE BEARING MUST BE AVOIDED!



THE ELECTRICAL INSTALLATION MUST BE DONE BY A LOCALLY LICENSED SPECIALIST !



IN THE EVENT THAT HAZARDOUS CHEMICALS OR MATERIALS THAT ENDANGER HEALTH CAN INFLUENCE THE SURROUNDINGS OR USE OF THE EQUIPMENT, APPROPRIATE COUNTERMEASURES MUST BE TAKEN.

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3 DESCRIPTION OF COMPONENTS

- The POLYTRON® PT 10-35 GT (optional) is a batch mixing dispersion and homogenizing machine.
- The REACTRON® RT 2 E needs a minimum surface area of approx.. 300 x 340 mm and a height of approx. 950 mm.
- The REACTRON® RT 2 has a weight of approx. 20 kg.
- The product to be processed must be flowable and pumpable.
- The dispersing generator has been selected for the contracted process, product and procedure and shall therefore not be used for a different application without the permission of the manufacturer.
- The steel parts in contact with the product are made of high-grade steel 1.4435 (ANSI 316 L).

3.1 PROCESS CONDITIONS

- max. working pressure

Process vessel	:	max. 5.0 bar (g)
Double jacket	:	max. 2.0 bar (g)
- working temperature

	:	max. 90°C
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- Speed max.

PT 10-35 GT	:	20'000 RPM
Stirrer PX-SR 90 D	:	400 RPM
Stirrer PX-SR 50 E:		300 RPM

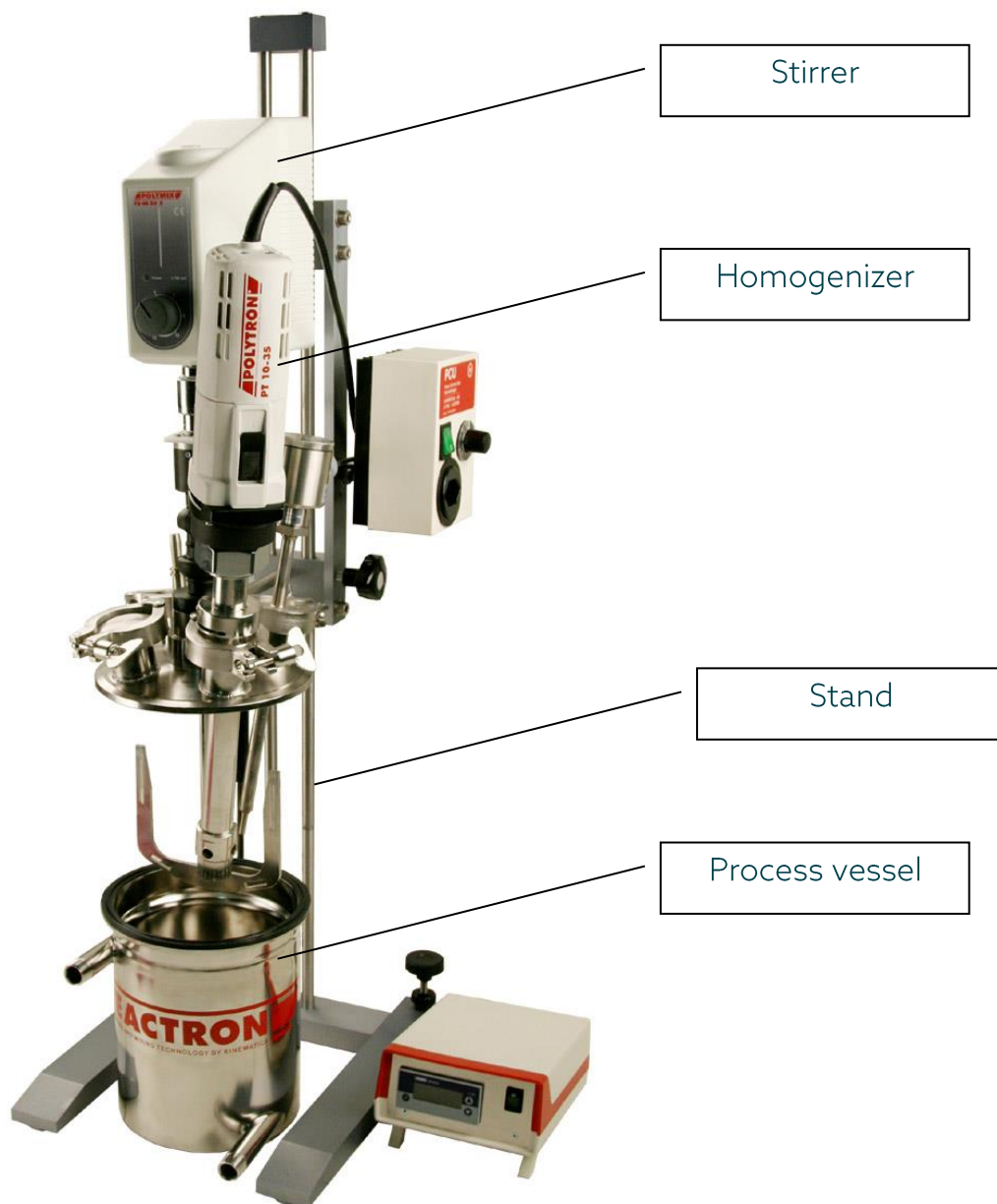


DO NOT RUN THE STIRRING-UNIT WITH MORE THEN 500 RPM.

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The REACTRON RT 2 E - System consists of, but not limited to:

- Process vessel with double jacket (3.2)
- POLYTRON® PT 10-35 GT (Optional) (3.3)
- Stirrer (3.4)
- Stand with pneumatic spring (3.5)



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3.2 PROCESS VESSEL WITH DOUBLE JACKET

Description:

- Process vessel DN 150 with useable capacity of 2000 ml
- With Heating- / Cooling Jacket
- Cover fixed to the lifting column of the stand
- Vessel with flat bottom, unfixed

Technical data:

Process vessel

- Total Volume 3000 ml
- Working volume 2000 ml
- Operating pressure max. 5.0 bar
- Working temperature max. 90°C

Dimensions

- Inside diameter 150 mm
- Outside diameter 170 mm
- Cyl. height 142 mm

Heating- / Cooling Jacket

- Heating/cooling volume approx. 1.5 liters
- Operating pressure max. 3.0 bar
- Working temperature max. 100 °C

Material

- Process vessel 316L
- Heating- / Cooling Jacket 316L
- Cover 316L

Equipment:

- The cover is clamped (Clamp NW 150 ISO) to the vessel and tighten by a VITON-O-Ring
- The cover is equipped with two lifting lugs

Connections on the cover:

- Through-bore for anchor-stirrer (pre-mounted) with sealing
- 4 pc. 1 ½" Tri-Clamp connections

Connections in the Heating- / Cooling Jacket:

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- 1x R1/2" connection for the inlet of heating / cooling liquid
- 1x R1/2" connection for the inlet of heating / cooling liquid

Connections at the bottom:

- none

3.3 POLYTRON® PT 10-35 GT with dispersing unit pt-Da 3030/4G (optional)

See referring manual for drive

3.4 stirrer

See referring manual for "PX-SR 50 E" or "PX-SR 90 D"

3.5 STAND RT 2 E

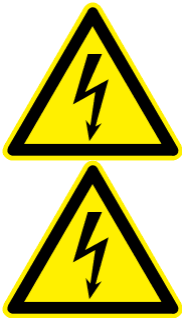
STAND:

- H-shape base
- Two columns
- For lifting the vessel cover with the installed equipment,
- stroke approx. 200mm
- The maximum height is approx 970 mm.
- The minimum base space required is 300 x 340mm.
- See also drawings in the annex

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4 INSTALLATION AND OPERATING INSTRUCTIONS

The REACTRON® RT 2 E system normally arrives completely assembled for 230V or 115V outlets. Plug the power cable from the PT 10-35 GT (optional) and the power cable from the stirrer to a suitable wall socket.



BEFORE CONNECTING THE ELECTRICAL POWER SUPPLY, CHECK THE DATA SHEET OF THE POLYTRON AND THE STIRRING-UNIT

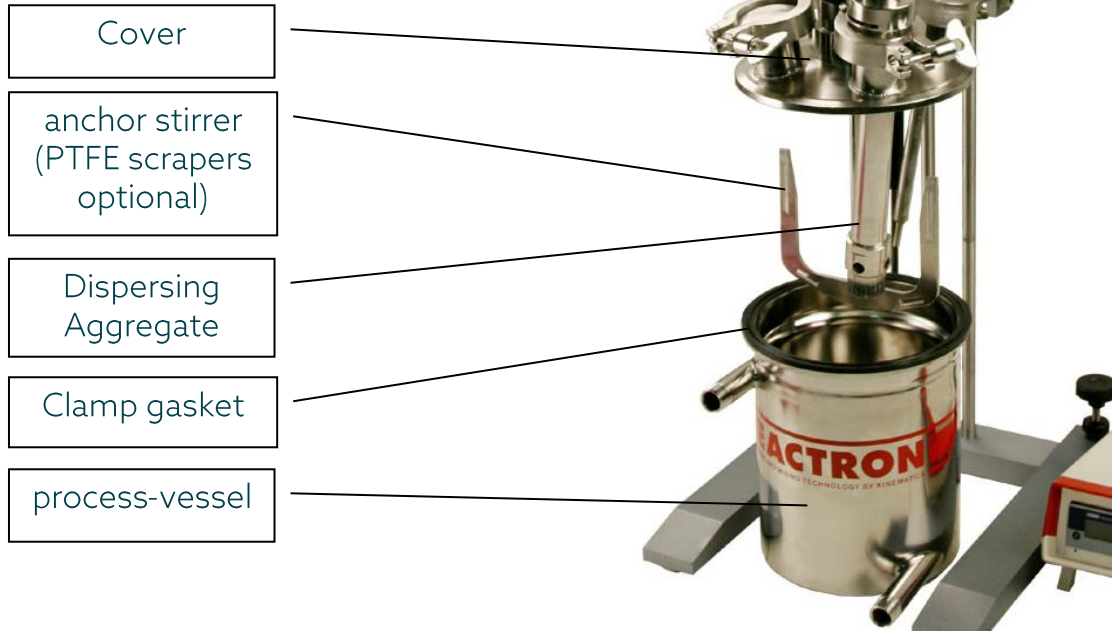
ALL ELECTRICAL WORK MUST BE PERFORMED BY A LICENSED ELECTRICIAN

4.1 INSTALLATION



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- Center the process-vessel (13) under the lifted vessel cover (14)
- Check that the clamp gasket (35) is installed



- Lower the cover carefully until the vessel is completely closed. Fix the lifting column with the knob (34).
- Tighten the cover to the process vessel by using the Clamp (36).

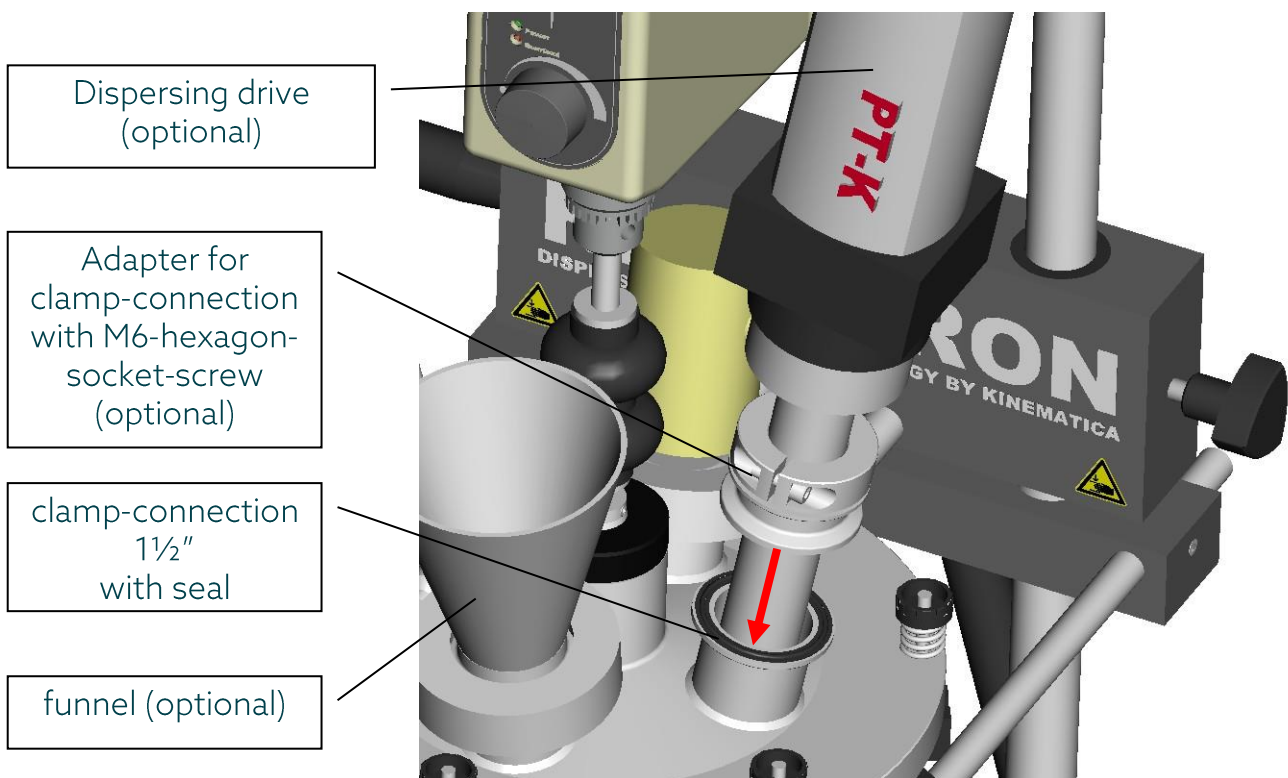


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PAY ATTENTION THAT NO HANDS OR FINGERS ARE BETWEEN COVER AND VESSEL, WHILE PULLING DOWN THE COVER.

- Install the chosen equipment onto the four available Tri-Clamp connections on the cover (e.g. funnel, temperature probe, vacuum connection, homogenizer,..).
- Connect the necessary supply lines e.g. for cooling/heating (use the connections at the process vessel), vacuum, etc. or close the clamp connections by using blind covers if necessary
- The POLYTRON® homogenizer (e.g. PT 10-35 GT) with the dispersing aggregate (e.g. PT-DA 3030/4G) can be positioned in the 1 ½ "- clamp-connections on the cover using the adapter and a clamp-fastener.



MAKE SURE THAT THE SCREW OF THE ADAPTER IS WELL TIGHTENED TO PREVENT THE DISPERSING-UNIT FALLING DOWN AND DAMAGING THE WHOLE UNIT

MAKE SURE THAT THE DISPERSING-UNIT DOES NOT TOUCH THE ANCHOR-STIRRER.

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- The generator head of the dispersing aggregate should be well immersed in the product. This allows the proper cooling and lubrication of the slide bearing or mechanical seal.
- The force of suction of material into the generator is best between 1/3 and 2/3 of the vessel height.
- To raise the cover-unit, first release any supplied vacuum or pressure and detach any vacuum-tubes, pressure lines or any other tubing / supply lines / wiring on the cover; then dismount the clamp (35) and unfasten the fixing-knob (34) at the lifting column; then the cover can be lifted.

4.2 START UP OF THE SYSTEM

BEFORE STARTING THE UNIT MAKE SURE THE PROCESS VESSEL IS FILLED WITH THE PRODUCT TO BE PROCESSED

- Check that the vessel cover and the POLYTRON® are mounted tight and correct
- Check that the anchor-stirrer does not interfere with the dispersing-unit.



AVOID DRY-RUN OF DISPERSING-UNIT, THE MECHANICAL SEAL MAY BE DAMAGED



THE USER IS RESPONSIBLE THAT THE REACTRON® SYSTEM AND ITS COMPONENTS ARE ONLY USED WITHIN THE TECHNICAL LIMITATIONS.



THE USER IS RESPONSIBLE FOR SUPERVISION OF THE SYSTEM. ESPECIALLY REGARDING PRESSURE / VACUUM, TEMPERATURE, SPEED LEVELS, FILLING LEVEL

- Start the cooling / heating of the process vessel, if necessary or applicable.
- Start the vacuum / pressurizing system, if necessary or applicable.
- Start the stirrer and set the speed to an appropriate level.
- Start the homogenizer and set the speed to an appropriate level.

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4.3 SHUT-DOWN OF THE SYSTEM

- Stop the homogenizer.
- Stop the stirrer.
- Stop the vacuum / pressurizing system and release the vacuum / pressure, if necessary or applicable.
- Stop the cooling / heating of the process vessel, if necessary or applicable.



IF THE PROCESSED MEDIA TENDS TO HARDEN OR STICK IN THE PROCESS VESSEL THE PRODUCT HAS TO BE REMOVED COMPLETELY FROM THE PROCESS VESSEL.

4.4 CLEANING THE REACTRON®

- If the processed media tends to harden or stick, the product has to be removed completely from process vessel after every use. The dispersing-unit, the anchor-stirrer and the cover have to be cleaned.
- If the machine was not operated for a longer time, the POLYTRON®-aggregate has to be cleaned (see Manual "PT 10-35 GT")
- Before any maintenance work is carried out, the POLYTRON®-aggregate has to be cleaned



PAY ATTENTION THAT THE TEMPERATURE DIFFERENCE BETWEEN ACTUAL TEMPERATURE OF THE AGGREGATE AND CLEANING TEMPERATURE IS KEPT TO A MINIMUM.

A THERMAL SHOCK CAN DAMAGE STRUCTURAL COMPONENTS.

THE CLEANING LIQUID SHOULD BE COMPATIBLE WITH ALL PARTS WETTED BY THE PRODUCT.

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5 MAINTENANCE WORK



ALL MAINTENANCE WORK HAS TO BE DONE BY SPECIALISTS OR ENGINEERS.

ALL PARTS HAVE TO BE INSPECTED FOR SIGNS OF WEAR AND DAMAGE. IF NECESSARY, THEY HAVE TO BE REPLACED.



BEFORE STARTING THE DISASSEMBLY, ALL ELECTRICAL PARTS HAVE TO BE DISCONNECTED.

- The POLYTRON® has to be taken out of the process vessel



WHEN HANDLING DANGEROUS PRODUCTS, TAKE CARE THAT THE LOCAL SAFETY REGULATIONS ARE RESPECTED.



BEFORE CLEANING WITH SOLVENTS, CHECK THE COMPATIBILITY BETWEEN THE SOLVENT AND THE MATERIAL OF THE O-RINGS.

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DAILY INSPECTION WORK

If one of the following irregularities is found during inspection, the machine / unit has to be stopped immediately and repaired:

- Leakage of the whole system
- noise level too high or unusual noises

We strongly recommend that service work and repairs should be carried out only by authorised KINEMATICA service centres or by KINEMATICA directly, where original replacement parts are available.

Any unauthorised modification or manipulation of the unit or its equipment leads to immediate annulment of the warranty.

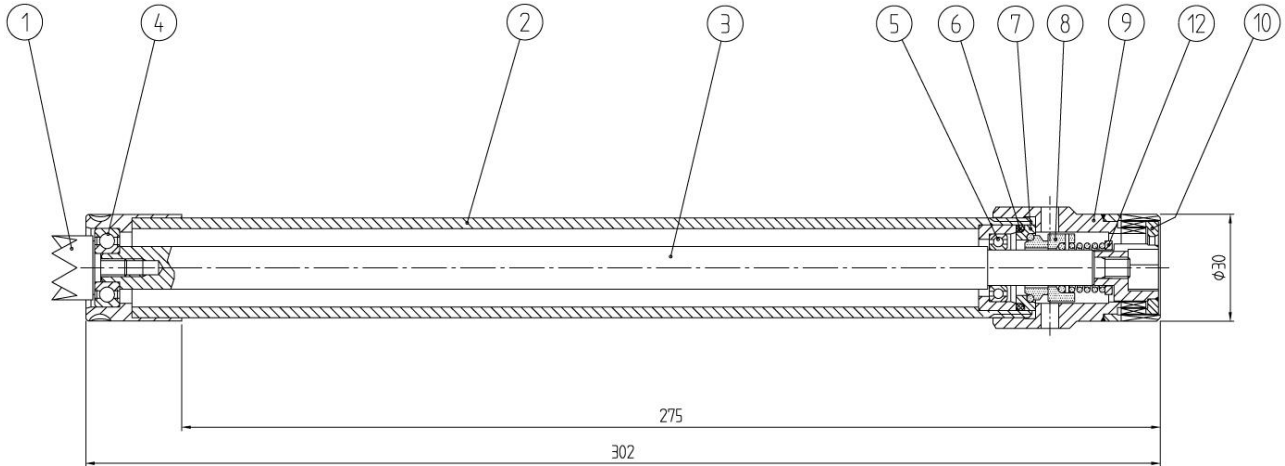
5.1 MAINTENANCE OF THE POLYTRON DISPERSING DRIVE

See corresponding manual

5.2 MAINTENANCE OF THE STIRRER

See corresponding manual

5.3 MAINTENANCE OF THE DISPERSING AGGREGATE PT-DA 3030/4G



CLEANING

- For easy cleaning you can run the aggregate in any suitable cleaning fluid.

If further cleaning of the generator is needed, the dispersing aggregate and its components has to be disassembled as follows:

- Unfasten the rotor (10) by blocking the coupling (1). Assure that the spring does not hop away.
- Unfasten the stator (9). (left-hand thread)
- Remove the mechanical seal (8)
- Remove the ring (7)
- Remove the o-ring (6)
- Clean the removed components separately.
- Proceed in reverse order for reassembling.

REPLACING PARTS BY SPARE PARTS

- Ball Bearings
 - To replace the ball bearings (4 & 5) do the de-assembling as shown above and remove the coupling (1) at the shaft. Push out the shaft (3) towards the coupling and demount the ball bearings (4 & 5). Replace the ball bearing and reassemble the aggregate in reverse order
- O-rings: as shown above
- Mechanical Seal: as shown above

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6 ORDERING OF SPARE PARTS

Only original KINEMATICA spare parts will guarantee a trouble free operation of the machine

when ordering spare parts, please indicate:

- 1. Type of machine**
- 2. Serial No.**
- 3. Description and Id.-No. according to parts list**

Please refer to the bill of material in the APPENDIX to identify the required spare part.

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7 TROUBLE SHOOTING

When troubles with the POLYTRON® and the dispersing aggregate or the stirrer occur, see corresponding manuals.

PROBLEM	CAUSE	CORRECTIVE MEASURES
The cover-unit does not raise automatically or does not balance the weight.	The pneumatic-spring may be damaged.	Change the pneumatic-spring of the stand
Leakage of liquid between cover and vessel.	Gasket is damaged.	Replace the gasket
	Gasket, vessel and cover are not centered well or not properly installed	Recenter these components
Rattle noise	Foreign body in the vessel touching anchor-stirrer and dispersing-unit	Remove foreign body

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8 WARRANTY

KINEMATICA AG guarantees that the equipment that it produces will run free of any fault related to materials or manufacturing faults for **12 months**.

If thorough testing shows a fault to be due to either of the above causes, KINEMATICA AG guarantees that the equipment will be repaired or replaced free of charge.

The guarantee does not cover parts that are subject to normal wear. It is void if any person other than an employee of KINEMATICA AG or their appointed representative has made modifications to the equipment or if the damage is due to failure to comply with the operating instructions, to carelessness, accident, incorrect use or incorrect supply voltage.

KINEMATICA AG reserves the right to make technical changes to the equipment without modifying equipment delivered earlier in the same way.

In the event of technical problems, for spare parts requirements or for advice, contact our regional appointed agent, your preferred dealer or us directly at:

KINEMATICA AG

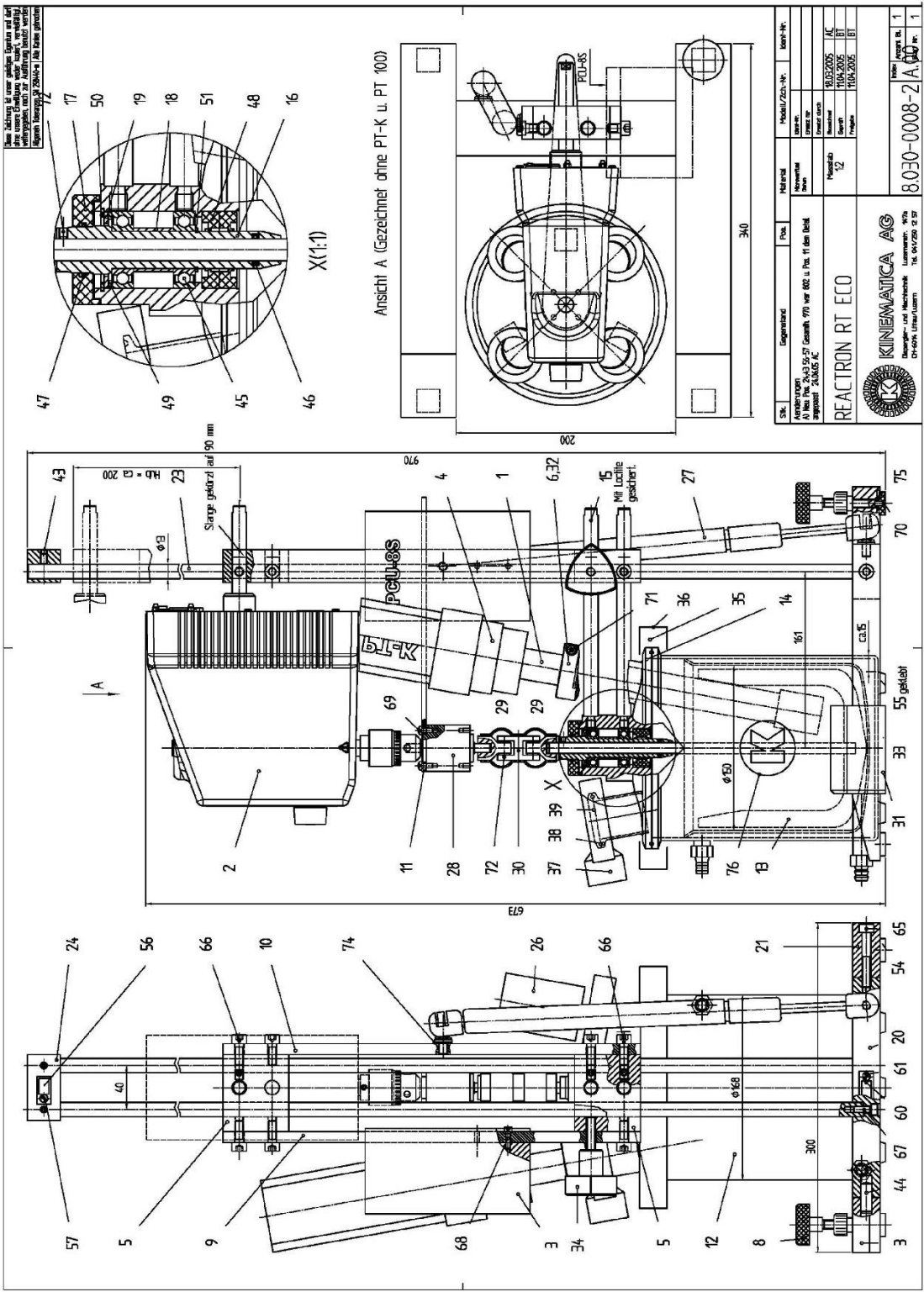
Werkstrasse 7, C-D
CH-6102 Malters
Switzerland

Tel. +41-41-259 65 65
Fax +41-41-259 65 75
e-mail laboratory@kinematica.ch

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APPENDIX: DIMENSIONAL DRAWINGS & BILL OF MATERIAL

REACTRON RT 2 E: drawing-no. 8.030-0008-2



Bill of materials, drawing-no. 8.030-0009-S



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Stk.	Gegenstand	Pos.	Material	Mittel/Zsch.-Nr.	Ident.-Nr.
1	Kreuzgeleuk DN 10 doppelt	30	Inox		9340971
2	Faltenbag einfach	29	Noppen schwarz	HA-308.9-20-E	9340552
1	GYSIN Präzisionsgetriebe	28			9340962
1	Gasfeder 100 N Hub 250mm	27			9323117
1	PT 100 Sonde m. 1 1/2" (La-Anschl.)	26			9340334
1	Halter	25		6.021-0005-E	9750877
2	Stahlsäule	23		6.021-0028-E	9754067
1	Fuss rechts	22		6.031-0006-E	9800052
1	Fuss links	21		6.031-0005-E	9800053
1	Querträger (Nachbeauf.)	20		6.021-0024-E	9754000
1	Scheibe	19		6.030-0015-E	9753162
1	Distanzbüchse	18		6.030-0008-E	9753160
1	Dichtscheibe	17		6.030-0017-E	9753163
1	Hilfwelle	16		6.030-0009-E	9753159
2	Auslagerstange	15		0.020-0024-E	9750903
1	Deckel komplett	14		6.030-0055-E	9753994
1	Ankerrührer	13		6.030-0018-E	9753190
1	Behälter DN 150 / 2 lt.	12		6.030-0034-E	9753995
1	Drehmomentabsitzlung	11		6.030-0036-E	9753996
1	Scheibe rechts	10		6.030-0038-E	9753998
1	Scheibe links	9		6.030-0037-E	9753997
1	Wellenfuss	8		6.061-0042-E	9750856
1	Clamp-Stück 1 1/2"	6		6.030-0011-E	9753183
2	Kreuzmuffe So	5		6.030-0039-E	9754009
1	PT 10-35 / 230V	4		0.035-0028-S	9100006
1	PCU-8S 230V Drehzahlsteller	3		0.080-0016-E	9100009
1	POLYMIX PX-SR 50 E	2		5.050-0002-S	9158024
1	PTA 30/4 G	1		1.030-0018-S	9115267
	Zusammenstellung			8.030-0008-2	
	Massblatt				
	Material				
	Microverf. Datum			97145472	
	Erstellt durch				
	Gezeichnet			23.03.2005	AC
	Freigegeben			11.04.2005	BT
	Freigegeben			11.04.2005	BT
	Messstab				
	1:1				
	TB-Nr. 2005 03 08				
	Index				
	Anzahl Bl.				
	Blatt-Nr.				
	8.030-0009-S-A				

REACTRON RT ECO

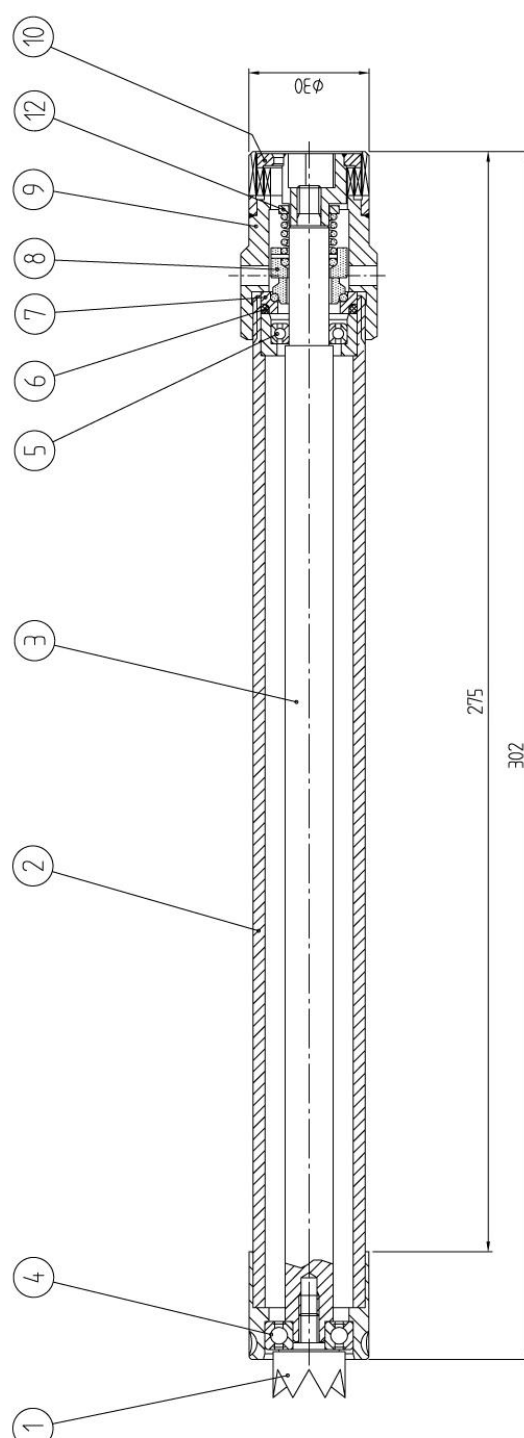
KINEMATICA AG
Oberglarner- und Messtechnik
CH-6004 Littau/Luzern
Luzernerstr. 147a
Tel. 041/250 12 57

76	selbstklebend	9340515
75	U-Scheibe M5	9960005
74	A4	9951060
73		
72	A2	9951059
71	A2	9910516
70	A2	9930510
69	A2	995107
68	A2	9920416
67	A2	9930616
66	A2	9910820
65	A2	9900855
64		
63		
62		
61	A2	9900046
60	Nylon schwarz	9900738
59		
58		
57	A2	9900046
56	Nylon schwarz	9900738
55	Gummi	9320208
54	Gummi	9800070
53	A2	9900810
52		
51	Fed.-St. C75	9990077
50	Fed.-St. C75	9990706
49	Fed.-St. 6003	9340323
48	Gylen W	9340324
47	Viton	9320066
46	Viton	9320068
45	6003 2-RS 2	9322001
44	14-305	9991030
43	A2	9920610
42		
41		
40		
39	316 L	9340335
38	Viton	9324042
37	Tri-Clamp	9324043
36	316 L	9340974
35	EPDM	9340975
34	Thermoplast schwarz	9340340
33	VTR 50 8x30	9835418
32	230 V / EU	9320266
31	Viton	9340490
	ITRON T08	


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Dispersing Aggregate PT-DA 3030/4 G: drawing-no. 1.030-0009-3

Diese Zeichnung ist unser geistiges Eigentum und darf ohne unsere Einwilligung weder kopiert, vervielfältigt, weitergegeben, noch zur Ausführung benutzt werden.
Allgemein: Toleranzen SN 258446-m | Alle Kerben gebräuchlich



Stk.	Gegenstand	Pos.	Material	Modell/Zch.-Nr.		Ident.-Nr.
				Ident.-Nr.		
Aenderungen	PT-DA 3030/4 G		Microverf. f. Bauteil	Ersetz für		
			Material	Ersetz durch		
			Massstab 1:1	Gezeichnet	31.10.1996	RU
				Geprüft	04.11.1996	BJ
			Freigegeben	04.11.1996	BJ	
			Index		1	
			1.030-0009-3		Blatt Nr. 1	



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Dispersier- und Mischtechnik | Luzernerstr. 147a
CH-6014 Olten/Luzern | Tel. 041/250 12 57

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Bill of materials to drawing-no. 1.030-0009-3

IDENTIFIER	ID.-NO.	POSITION	QTY	MATERIAL
Crown coupling	9800701	1	1	316 L
Shaft tube	9800881	2	1	316 L
Shaft	9810078	3	1	316 L
Ball bearing	9340850	4	1	Stainless steel
Ball bearing	9805016	5	1	
O-ring	9320211	6	1	VITON
Ring	9805018	7	1	316 L
Mechanical seal	9735050	8	1	SBV
Stator PTG 30/4G	9751075	9	1	316 L
Rotor PTG 30/4	9800808	10	1	316 L
Disc	9810083	12	1	316 L