
Translation of the original instructions

Motor piston diaphragm dosing pump

MEMDOS KMS

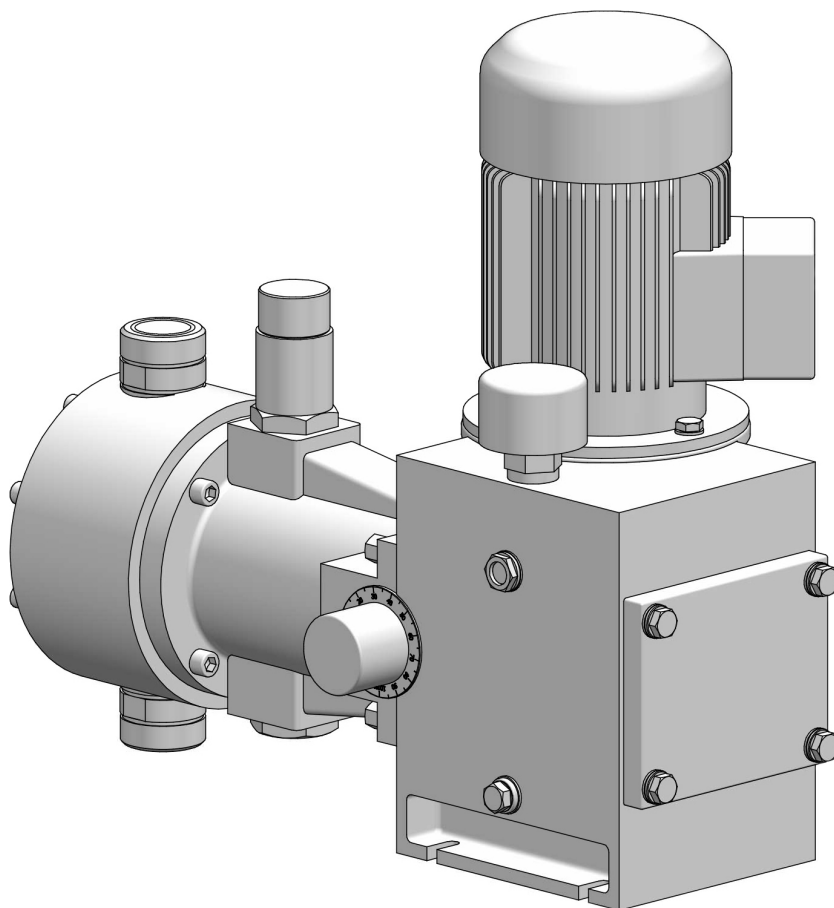


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1 About these operating instructions

This document:

- Is part of the product.
- Describes the safe and correct use of the product in all operating phases.
- Must be read completely before the product is commissioned.
- Must be read and applied by every person tasked with working on the product.
- Must be kept for the duration of the service life of the product.
- Must be passed on to any subsequent owner of the product.

1.1 Target groups

Target group	Task
Operator	1. Keep these operating instructions available at the place of use of the product, including for later use. 2. Instruct employees to read and comply with these instructions, especially the safety instructions and warnings. 3. Comply with additional system-related specifications and regulations.
Qualified personnel Trained persons	► Read, observe and follow these operating instructions, in particular the safety instructions and warnings.

Table 1: Target groups and their tasks

1.2 General non-discrimination

For better readability, these operating instructions always use the masculine form when referring to persons. However, all genders are addressed equally.

1.3 Warnings

Warnings are intended to help you recognise risks and avoid negative consequences. They are structured as follows in these operating instructions:

Warning sign

SIGNAL WORD

Type and source of danger

Consequences of non-compliance

► A safety precaution to be taken to eliminate the hazard.

Fig. 1: Design of warnings

Signal words

These operating instructions use the following signal words to emphasise the severity of possible injuries if the danger is ignored:

DANGER

Imminent danger

Non-compliance can result in death or serious injury.

WARNING

Possible danger

Non-compliance can lead to death or severe injuries.

CAUTION

Potentially hazardous situation

Non-compliance can result in minor injuries.

NOTE

Potentially hazardous situation

Non-compliance can result in damage to property or malfunctions.

INFORMATION

Information or recommendation

Simplifies handling or extends the service life of the product or system.

Warning signs used

These operating instructions use the following warning signs to indicate the type and source of danger:

General hazard

Danger from electrical voltage

Danger from corrosive substances

Danger from potentially-explosive substances

Danger from automatic startup

Risk of machine damage or malfunction

1.4 Action steps

Action steps are structured as follows:

- ✓ This prerequisite must be met before you can start with the action steps.

- ▶ Single step

Multiple steps in sequence are structured as follows:

1. First step
 2. Second step
 - ↳ Intermediate result of a step
- 📌 Overall result

1.5 Cross-references

Cross-references are marked with an arrow.

Example: (→ Fig. 5)

1.6 Latest version

Please find the latest version of these operating instructions at www.lutz-jesco.com.

1.7 Copyright

The content of these operating instructions and the images contained in them are subject to the copyright protection of Lutz-Jesco GmbH.

2 Safety

2.1 General warnings

The following warnings are intended to help you eliminate the dangers that can arise while handling the product. Risk prevention measures always apply regardless of any specific action.

Safety instructions that warn against risks arising from specific activities or situations can be found in the respective sub-sections.



DANGER

Mortal danger from electric shock!

Wrongly connected or located cables or damaged ones can injure you.

- ▶ Connect the device only to a SCHUKO socket outlet protected by a ground fault circuit interrupter (GFCI).
- ▶ Replace damaged cables without delay.
- ▶ Do not use extension cables.
- ▶ Do not bury cables.
- ▶ Secure cables to avoid damage caused by other equipment.



DANGER

Danger to life through explosions!

When using dosing devices without ATEX certification in a potentially explosive area, explosions can occur that result in fatal injuries.

- ▶ Never use the device in potentially explosive areas.



WARNING

Danger from unsuitable materials

The materials of the dosing pump and hydraulic parts of the system must be suitable for the dosing medium that is used. Should this not be the case, the dosing media may leak.

- ▶ Make sure that the materials you are using are suitable for the dosing medium.
- ▶ Make sure that the lubricants, adhesives, sealants, etc. that you use are suitable for the dosing medium.



WARNING

Caustic burns or other burns through dosing media!

While working on the dosing head, valves and connections, you may come into contact with dosing media.

- ▶ Use sufficient personal protective equipment.
- ▶ Rinse the dosing pump with a liquid (e.g. water) which does not pose any risk. Ensure that the liquid is compatible with the dosing medium.
- ▶ Release pressure in hydraulic parts.
- ▶ Never look into open ends of plugged pipelines and valves.



WARNING

Danger of automatic start up!

After the mains supply has been connected, residual dosing media in the dosing head can spray out.

- ▶ Stop the dosing pump before disconnecting it from the mains supply.
- ▶ Before connecting the mains supply, connect the dosing lines.
- ▶ Check that all the screw connections have been tightened correctly and are leak-proof.



CAUTION

Danger when changing the dosing medium!

Changing the dosing media can provoke unexpected reactions, damage to property and injury.

- ▶ Clean the dosing pump and the system parts in contact with the media thoroughly before changing the dosing medium.



CAUTION

Increased risk of accidents due to insufficient qualification of personnel!

Dosing pumps and their accessories may only be installed, operated and maintained by personnel with sufficient qualifications. Insufficient qualification will increase the risk of accidents.

- ▶ Ensure that all action is taken only by personnel with sufficient and corresponding qualifications.
- ▶ Prevent access to the system for unauthorised persons.

2.2 Hazards due to non-compliance with the safety instructions

Failure to follow the safety instructions may endanger not only persons, but also the environment and the equipment.

The specific consequences can be:

- Failure of important functions of the product and the associated system
- Failure of required maintenance and repair methods
- Danger for individuals through dangerous dosing media
- Danger to the environment caused by leaking substances

2.3 Working in a safety-conscious manner

In addition to the safety instructions specified in these operating instructions, you must comply with additional safety regulations:

- Accident prevention regulations
- Safety and operating provisions
- Safety provisions for handling dangerous substances (particularly the safety data sheets of the dosing media)
- Environmental protection provisions
- Applicable standards and legislation

2.4 Personal protective equipment

Based on the degree of risk and the type of work you are carrying out, you must use corresponding personal protective equipment. Read the Accident Prevention Regulations and the Safety Data Sheets for the dosing media to find out what protective equipment you need.

The following protective equipment is recommended as a minimum:



Protective goggles



Protective clothing



Protective gloves

Table 2: Protective equipment required

Wear the protective equipment when performing the following tasks:

- Commissioning
- Working on the dosing pump during operation
- Shut-down
- Maintenance work
- Disposal

2.5 Personnel qualification

Any personnel who work on the product must have special knowledge and skills.

Anybody who works with the product must meet the conditions below:

- Attendance at all the training courses offered by the owner
- Personal suitability for the respective activity
- Sufficient qualification for the respective activity
- Training into the handling of the device
- Knowledge of safety equipment and the way this equipment functions
- Knowledge of these operating instructions, particularly the safety instructions and sections relevant for the activity
- Knowledge of fundamental regulations regarding health and safety and accident prevention

All persons must have one of the following minimum qualifications:

- Trained as a specialist to work independently with the product
- Sufficient training to work on the product under the supervision and guidance of a qualified specialist

These operating instructions differentiate between the following user groups:

Qualified personnel

Thanks to their professional training, knowledge, experience and knowledge of the relevant specifications, qualified personnel are able to perform the job allocated to them and recognise and/or eliminate any possible dangers by themselves.

Trained persons

Trained persons have received training from the operator about the tasks they are to perform and about the dangers stemming from improper behaviour.

Trained persons have attended all trainings offered by the operator.

2.5.1 Personnel tasks

Incorrect handling of the product can cause severe personal injury and damage to property. Therefore, ensure that all work is carried out by qualified personnel only.

The following table shows which qualifications are required for the corresponding activities.

Qualification	Activities
Qualified personnel	• Assembly • Hydraulic installation • Electrical installation • Maintenance • Repairs • Commissioning • Shut-down • Disposal • Troubleshooting
Trained persons	• Storage • Transportation • Operation • Troubleshooting

Table 3: Personnel tasks

3 Intended use

3.1 Notes on product warranty

Any non-designated use of the product can compromise its function or intended protection. This leads to invalidation of any warranty claims!

Please note that liability is on the side of the user in the following cases:

- The product is operated in a manner that is not consistent with these operating instructions, particularly the safety information, action steps and the intended use.
- People operate the product who are not adequately qualified to carry out their respective activities.
- No original spare parts or accessories of Lutz-Jesco GmbH are used.
- Unauthorised changes are made to the product by the user.
- The user uses different dosing media than those indicated in the order.
- The user does not use dosing media under the conditions agreed with the manufacturer such as modified concentration, density, temperature, contamination, etc.

3.2 Intended purpose

The dosing pump MEMDOS KMS is intended for the following purpose:

- The conveying and dosing of liquids

Motor piston diaphragm dosing pumps are used for dosing liquids into a process in a precisely-defined time period. Dosing can be performed on a continuous or discontinuous basis. Dosing time and dosing quantity per time unit can be selected freely in their area. It is imperative that you comply with the specifications of the installation, operation and maintenance instructions to ensure a faultless function.

3.3 Principles

Observe the following principles:

- Before delivery, the manufacturer inspected the dosing pump and operated it under specific conditions (with a specific dosing medium with a specific density and temperature, with specific pipe dimensions, etc.) As operating conditions vary, the operating company must calibrate or readjust the dosing pump after delivery.
- Comply with the information pertaining to the operation and ambient conditions.
- Any restrictions regarding the viscosity, temperature and density of dosing media must be followed. You must only use dosing media at temperatures above freezing point or below the boiling point of the respective medium.
- The materials of the dosing pump and hydraulic parts of the system must be suitable for the dosing medium that is used. Please note, the stability of the components can change as a result of operating pressure and media temperature.



INFORMATION

Information on the suitability of materials combined with different dosing media can be found in the Compatibility Chart of Lutz-Jesco GmbH.

The information in this resistance list is based on information from the material manufacturers and on expertise obtained by Lutz-Jesco from handling the materials.

As the durability of the materials depends on many factors, this list only constitutes initial guidance on selecting material. In all cases, test the equipment under operating conditions with the chemicals that you use.

- The dosing pump is not intended for outdoor use unless appropriate protective measures have been taken.
- Avoid leaks of liquids and dust into the casing and avoid direct exposure to sunlight.
- You must never operate dosing pumps in a potentially explosive atmosphere if they do not have a corresponding rating plate or an appropriate EC Declaration of Conformity for potentially explosive atmospheres.

3.4 Prohibited dosing media

The device must not be used for the following media and substances:

- Gaseous media
- Radioactive media
- Solid substances
- Combustible media
- All other media that are not suitable for delivery using this device

3.5 Foreseeable misuse

The following section provides information regarding the device applications that are classified as non-intended use. This section is intended to allow you to detect possible misuse in advance and to avoid it.

Foreseeable misuse is assigned to the individual phases of the product's life cycle:

Incorrect assembly

- Unstable or unsuitable bracket
- Dosing pump bolted wrongly or loosely

Incorrect hydraulic installation

- Suction and pressure lines dimensioned incorrectly
- Unsuitable connection of the pipes due to wrong material or unsuitable connections
- Suction and pressure lines mixed-up
- Damage to threads due to them being tightened too much
- Bending of pipelines

- No free return flow of the pressure relief valve
- Excessive demand due to the pressure differences between the suction and pressure valves
- Through-suction at installation without back-pressure valves
- Damage due to undamped acceleration mass forces
- Exceeding the admissible pressure on the suction and discharge sides
- Using damaged parts
- Damage to plastic union nuts due to excessive tightening (not only by hand)

Incorrect electrical installation

- Connecting the mains voltage without a protective earth
- Unsecured mains or one that does not conform to standards
- Not possible to immediately or easily disconnect the power supply
- Wrong connecting cables for mains voltage
- Dosing pump accessories connected to wrong sockets
- Diaphragm monitoring not connected or defective
- Protective earth removed

Incorrect commissioning

- No gear oil filled before commissioning
- Start-up with damaged system
- Shut-off valves closed at commissioning
- Closed suction or pressure line, e.g. due to blockages
- Personnel was not informed before the start-up
- Recommissioning after maintenance work without restoring all of the protective equipment and fixtures etc.
- Inadequate protective clothing or none at all

Incorrect operation

- Protective equipment not functioning correctly or dismantled
- Modification of the dosing pump without authority
- Ignoring operational disturbances
- Elimination of operational disturbances by personnel without adequate qualifications
- Deposits in the dosing head due to inadequate purging, particularly with suspensions
- Bridging the external fuse
- Operation made more difficult due to inadequate lighting or machines that are difficult to access
- Operation not possible due to dirty or illegible display of the dosing pump
- Delivery of dosing media for which the system is not designed
- Delivery of particulate or contaminated dosing media
- Inadequate protective clothing or none at all

Incorrect maintenance

- Carrying out maintenance during ongoing operation
- Carrying out work that is not described in the operating instructions
- No adequate or regular inspection of correct functioning
- No replacement of damaged parts or cables with inadequate insulation
- No securing against reactivation during maintenance work
- Using cleaning materials that can cause reactions with the dosing media
- Inadequate cleaning of the system
- Unsuitable purging medium
- Unsuitable cleaning materials
- Detergents left in system parts
- Using unsuitable cleaning equipment
- Using the wrong spares or lubricants
- Contaminating the dosing medium with lubricant
- Installing spare parts without following the instructions in the operating instructions
- Blocking venting orifices
- Pulling off sections of the plant
- Contamination at installation without a dirt trap
- Mixing up the valves
- Mixing up the sensor lines
- Lines not fully reconnected
- Seals damaged or not fully installed
- No renewal of seals
- Non-compliance with safety data sheets
- Inadequate protective clothing or none at all

Incorrect decommissioning

- Not completely removing the dosing medium
- Dismantling lines while the dosing pump is running
- Device not disconnected from the power supply
- Using the wrong dismantling tools
- Inadequate protective clothing or none at all

Incorrect disposal

- Incorrect disposal of dosing media, operating resources and other materials
- No labelling of hazardous substances

4 Product description

4.1 Properties

During the development of the MEMDOS KMS, a focus was placed on ensuring the following advantages for the user.

Ease of installation

- Quick diaphragm change possible.
- No zero-point correction with dismantling of the piston flange required.

High flexibility

- The rational structure requires only a minimum of spare parts storage.
- The addition of a second dosing unit to the drive with an identical or different capacity range produces a double head pump, the MEMDOS ZKMS.
- Thanks to its symmetrical form, the piston flange can be installed on the left-hand or right-hand side of the simple pump.
- This ensures an economical and compact system design.
- The dosing pump can be converted or retrofitted from manual stroke adjustment to electric stroke adjustment.
- TÜV-checked pressure relief valves are integrated in all pumps; these prevent damage to the pump and the periphery.
- The pressure relief valves have been selected to match the pump capacity and the desired maximum pressure.

4.2 Scope of delivery

Carefully check the delivery prior to installation and refer to the delivery note to ensure that the delivery is complete and to check for any transport damage. Contact the supplier and/or carrier regarding any questions concerning the delivery and/or transport damage. Do not operate defective products.

The scope of delivery includes:

- Dosing pump MEMDOS KMS
- Operating instructions
- Gear oil container
- Inspection report and test certificate (optional)

4.3 Structure of the device

4.3.1 Overview

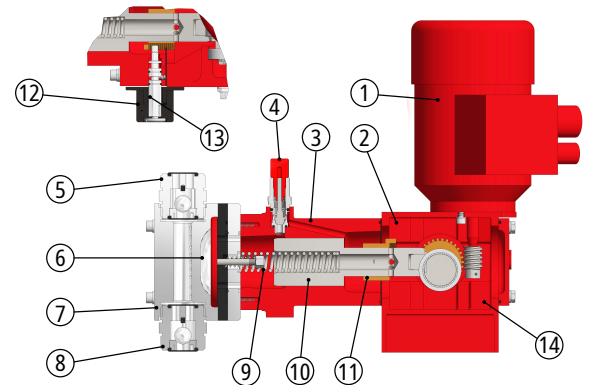


Fig. 2: Structure of the MEMDOS KMS dosing pump

1 Drive motor	2 Drive unit
3 Hydraulic unit	4 Pressure-relief valve
5 Pressure valve	6 Diaphragm
7 Dosing head	8 Suction valve
9 Piston spring	10 Piston
11 Slide valve	12 Adjusting knob
13 Adjusting spindle	14 Hydraulic fluid

4.3.2 Control elements

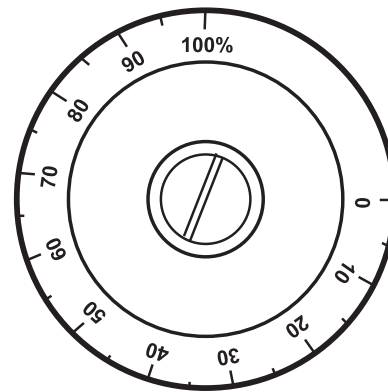


Fig. 3: Control of MEMDOS KMS dosing pump

The control is performed via a control dial. The control dial has a scale of 0–100%. The setting of the control dial determines the dosing capacity.

4.4 Function description

All item numbers within this text refer to → Section drawing of the pump [► 13].

The sectional drawing illustrates how the pump functions. The drive (3) and piston flange (6) are filled with a hydraulic fluid (19). A hydraulic connection has been made over the hollow-bored piston (9) which is fitted with a number of spill ports. The slide valve encloses the piston (7).

The hydraulic fluid (19) displaced by the pressure stroke from the piston flange (6) flows through the piston (9) into the drive (3) until the spill ports of the piston are closed by the fixed slide valve (7). Only now is dosing performed via the elastic working membrane (10).

The slide valve (7) is position-adjustable via the spindle (20), through which the dosing capacity can be changed sensitively and entirely linear in the range 0–100%.

If the eccentric cam (4) is rotated from its highest point to its lowest point, the suction stroke is triggered. The piston spring (8) returns the piston (9) to its zero position; dosing medium is sucked in as long as the slide valve (7) closes the spill ports.

During the suction stroke, the suction valve (16) opens and the pressure valve (17) closes. During the pressure stroke, the suction valve (16) closes and the pressure valve (17) opens. This function alternates with the revolutions of the eccentric cam.

4.5 Pressure-relief valve

To prevent damage from exceeding the permissible operating pressure, a pressure relief valve is installed on the piston flange. It is set and fixed to the operating pressure of the pump at the factory. The pressure relief valve is actuated if valves installed on the suction or pressure side are closed or the suction or pressure line is blocked. The pressure relief valve is only to be viewed as a short-term safety feature. Faults that lead to the actuation of the pressure relief valve require immediate remedy.

- The pressure relief valve is designed to protect certain pump parts against impermissible positive pressure.
- A further advantage is that all other system components such as lines from fittings are protected in accordance with the positive pressure control.
- Installation in the pump hydraulics provides the valve with almost complete protection from the type of soiling which could develop in the piping system.
- Independent of this, the operating company of dosing pumps is also permitted to install further pressure relief valves set to a level above or below the opening pressure of the dosing pump pressure relief valve.
- Installation in other pumps or machines is not permissible.
- The safety pressure relief valve must not be used to bridge the dosing stop with a running pump. It is a safety component.

4.6 Rating plate

The rating plate clearly identifies the product and provides important information such as the manufacturer, product designation, year of manufacture and technical and safety-relevant data. The rating plate must be kept legible for the duration of the service life of the product.

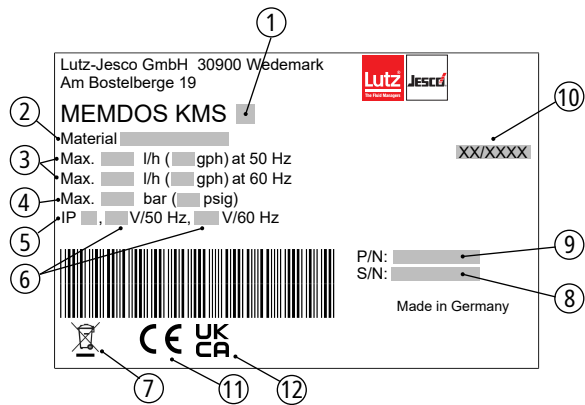


Fig. 4: MEMDOS KMS rating plate

1	Product type, nominal size	2	Material of the dosing head/seals
3	Maximum delivery rate at 50 and 60 Hz	4	Maximum back pressure
5	Protection class	6	Power supply
7	WEEE label	8	Serial number
9	Part number	10	Month/year of manufacture
11	Label showing conformity with applicable European directives	12	Label showing conformity with applicable UK directives

4.7 Section drawing of the pump

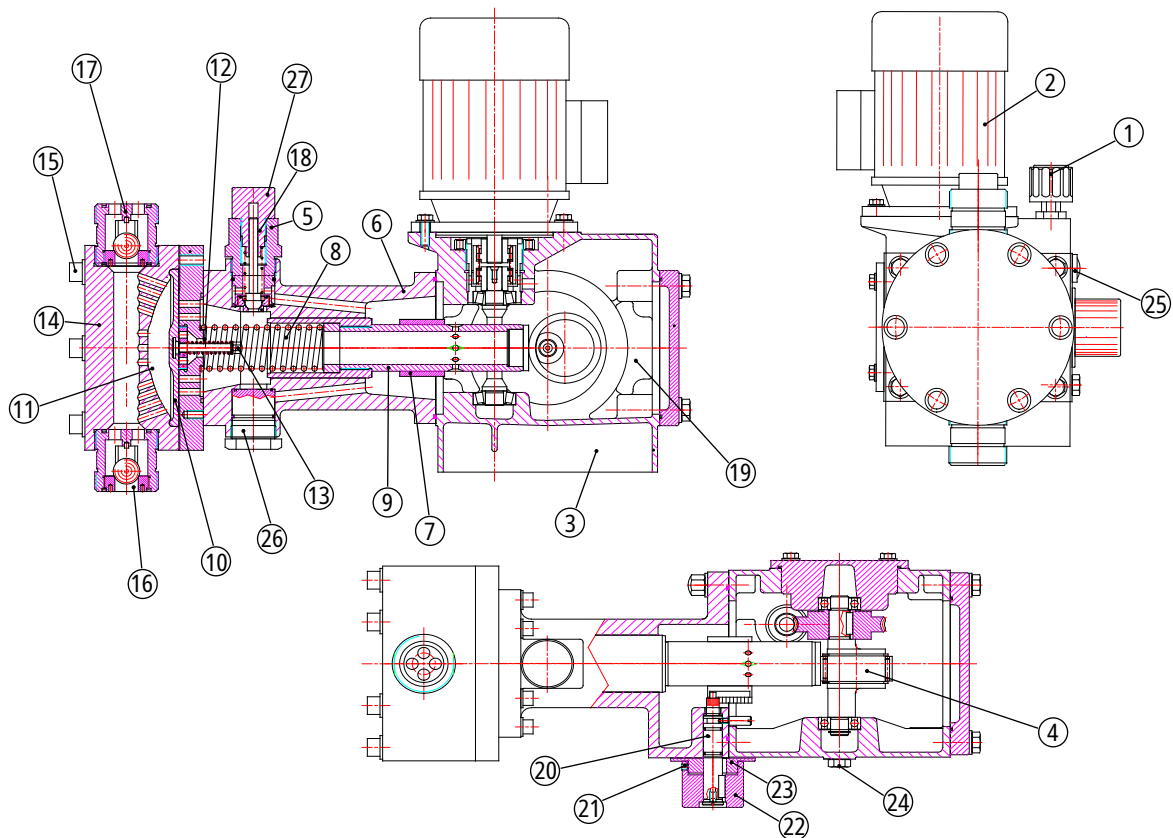


Fig. 5: Section drawing of the pump

1 Ventilation screw	2 Motor
3 Drive unit	4 Eccentric
5 Pressure-relief valve	6 Piston flange
7 Slide valve	8 Piston spring
9 Piston	10 Diaphragm
11 Diaphragm mount	12 Diaphragm spring
13 Cap nut M6 DIN 917	14 Dosing head
15 Dosing head screw	16 Suction valve
17 Pressure valve	18 Valve seat
19 Hydraulic fluid	20 Adjusting spindle
21 Set screw	22 Adjusting knob
23 Scale	24 Closing screw
25 Oil level gauge	26 Oil drain plug
27 Valve core	

5 Technical data

5.1 MEMDOS KMS standard pumps and KMS-HP high-pressure pumps

MEMDOS KMS, KMS-HP			1-HP	2-HP	6	9	9-HP	12	24	24-HP	46	80	100
Delivery capacity at max. backpressure		l/h	50 Hz	1	2.8	6.3	9.2	9	12	24	46	80	100
			60 Hz	1.2	3.2	7.5	11	10.6	14	28.8	55.2	96	-
		ml/stroke		0.56	1.6	1.8	1.7			3.3		6.4	11
Max. delivery pressure		bar		70	25	10	16	25	10		25	10	8
Max. stroke frequency		rpm	50 Hz	30		60	90		120				140
			60 Hz	36		72	108		144				-
Suction lift for non-gassing media		mWS		2									
Piston diameter		mm		10	14				20		27	37	
Nominal valve width				DN8								DN20	
Weight	PVC	~ kg	-	-	11		-	11		-	11	15	
	PVDF		-	-	11		-	11		-	11	15	
	Stainless steel (1.4571)		13		12				13		12	18	
Approved ambient temperature		°C		-5 to +45									
Approved media temperature		°C		-5 to +45									
Dosing accuracy				1%									

Table 4: Technical data MEMDOS KMS

MEMDOS KMS, KMS-HP			140	137	272	350	470-HP	490	564-HP	582	582-HP	882	1100	1058	1280	1536	
Delivery capacity at max. backpressure		l/h	50 Hz	140	137	272	350	470	490	564	582		882	1100	1058	1280	1536
			60 Hz	168	164	326	420	564	576	-	698		1058	1320	-	1536	-
		ml/stroke		19	20	41	52	70	73	67	87		131	164	126	190	183
Max. delivery pressure		bar		8	10			16	6	16	4	10		5	10	4	
Max. stroke frequency		rpm	50 Hz	120	112				140		112			140		112	140
			60 Hz	144	134.4				-		134.4			-		134.4	-
Suction lift for non-gassing media		mWS		2													
Piston diameter		mm		45	32	45	52	58			65		80	90	80	95	
Nominal valve width				DN20				DN32									
Weight	PVC	~ kg	31		33	40	80	42	80	60	85	90		100			
	PVDF		31		33	40	80	42	80	60	85	90		100			
	Stainless steel (1.4571)		40		42	45	85	47	85	65	90	100		120			
Approved ambient temperature		°C		-5 to +45													
Approved media temperature		°C		-5 to +45													
Dosing accuracy				1%													

Table 5: Technical data MEMDOS KMS

5.2 MEMDOS KMS-V for highly viscous media

MEMDOS KMS-V			12-V	20-V	50-V	137-V	175-V	235-V	291-V	440-V	640-V
Delivery capacity at max. backpressure	l/h	50 Hz	12	20	50	137	175	235	291	440	640
		60 Hz	14	24	60	-	210	282	349	528	768
	ml/stroke		6.7	11.1	18.5	40.8	52.1	69.9	86.6	131	190.5
Max. delivery pressure	bar		10	6		10					4
Max. stroke frequency	rpm	50 Hz	30		45	56					
		60 Hz	36		54	-	67.2				
Suction lift for non-gassing media	mWS		2								
Piston diameter	mm		27	37	45		52	58	65	80	95
Nominal valve width			DN20	DN32							
Weight	PVC	~ kg	13	15			68		74	80	100
Approved ambient temperature		°C	-5 to +45								
Approved media temperature		°C	-5 to +45								
Dosing accuracy			1%								

Table 6: Technical data MEMDOS KMS-V for highly viscous media

5.3 Motor data

Rated output P = 0.18 kW		
Frequency	50 Hz	60 Hz
Nominal voltage	Y 380 – 420 V, Δ 220 – 240 V	Y 440 – 480 V, Δ 254 – 280 V
Nominal current	Y 0.65 A Δ 1.05 A	Y 0.55 A Δ 0.95 A
Speed min ⁻¹	1410	1700
Power factor	cos φ 0.67	cos φ 0.65

Table 7: Motor data MEMDOS KMS Rated power 0.18

Protection class: IP55

ISO class: F

Design: IM V18

Weight: 5 kg

Rated output P = 0.55 kW		
Frequency	50 Hz	60 Hz
Nominal voltage	Y 380 – 420 V, Δ 220 – 240 V	Y 440 – 480 V, Δ 254 – 280 V
Nominal current	Y 1.3 A Δ 2.3 A	Y 1.4 A Δ 2.4 A
Speed min ⁻¹	1400	1720
Power factor	cos φ 0.70	cos φ 0.66

Table 8: Motor data MEMDOS KMS Rated power 0.55 kW

Protection class: IP55

ISO class: F

Design: IM V1

Weight: 10 kg

Rated output P = 1.1 kW		
Frequency	50 Hz	60 Hz
Nominal voltage	Y 380 – 420 V, Δ 220 – 240 V	Y 460 V ± 10%, Δ 265 – 460 V
Nominal current	Y 2.6 A Δ 4.5 A	Y 2.2 A Δ 3.8 A
Speed min ⁻¹	1450	1750
Power factor	cos φ 0.72	cos φ 0.73

Table 9: Motor data Memdos KMS Rated power 1.1 kW

Protection class: IP55

ISO class: F

Design: IM V1

Weight: 15.6 kg

6 Dimensions

All dimensions in millimetres (mm).

MEMDOS KMS 1-HP, 2-HP, 6 – 100, 140 and MEMDOS KMS-V 12, 20, 50

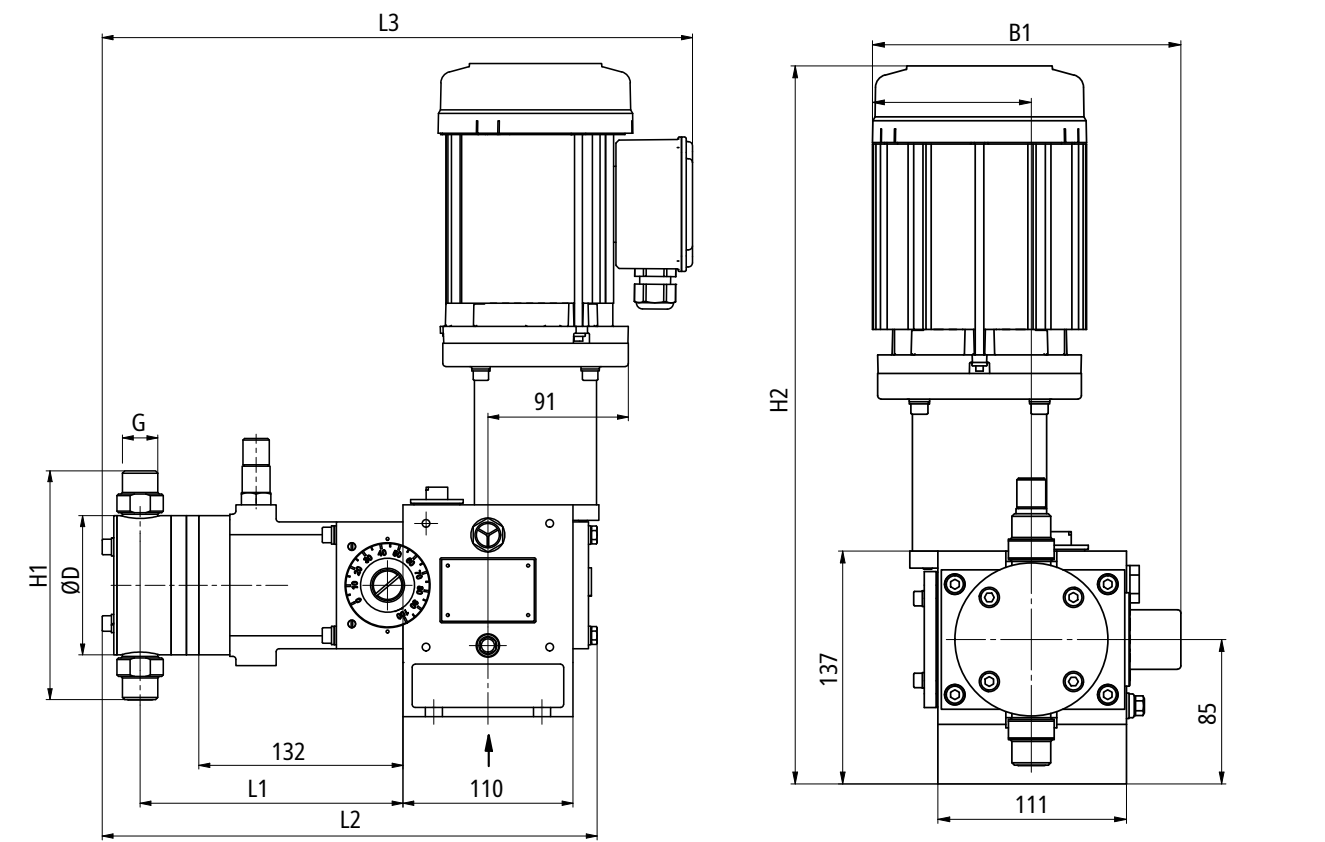


Fig. 6: Dimensions

KMS	Piston-Ø	L1	L2	L3	H1	H2	B1	ØD	G
1-HP, 2-HP, 6, 9, 9-HP, 12, 24, 24-HP	10–20	170	~320	~382	148	~423	~182	90	G 5/8
46	27	183	~333	~387	168	~423	~182	110	G5/8
80, 100, 140	37–45	192	~354	~407	166	~423	~182	110	G1 1/4

KMS-V	Piston-Ø	L1	L2	L3	H1	H2	B1	ØD	G
12	27	183	~345	~407	164	~300	~172	~110	G1 1/4
20	37	190	~365	~436	200	~300	~172	120	G2
50	45	190	~365	~436	208	~320	~180	130	G2

Table 10: Dimensions

MEMDOS KMS 137, 272 – 582 and MEMDOS KMS-V 137, 175

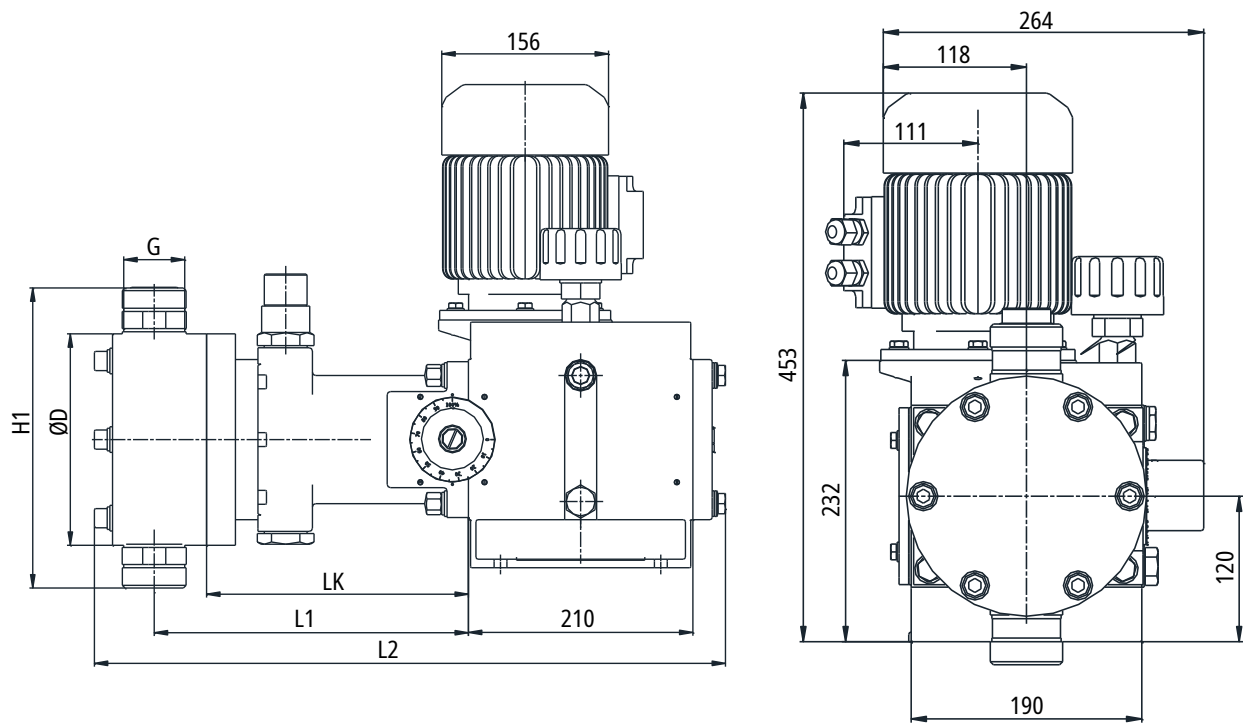


Fig. 7: Dimensions

KMS	Piston-Ø	L1	L2	LK	H1	ØD	G
137	32	272	~557 (555**)	240	196	150	G1 1/4
272	45	275	~562 (560**)	245	204	150	G1 1/4
350	52	280	~562 (560**)	245	232	178	G1 1/4
490, 582	58-65	294	~597 (595**)	245	281	198	G2

KMS-V	Piston-Ø	L1	L2	LK	H1	ØD	G
137	45	290	~584	240	228	150	G2
175	52	290	~584	245	256	178	G2

Table 11: Dimensions

*) p > 10 bar, PVC/PVDF **) with stainless steel dosing head

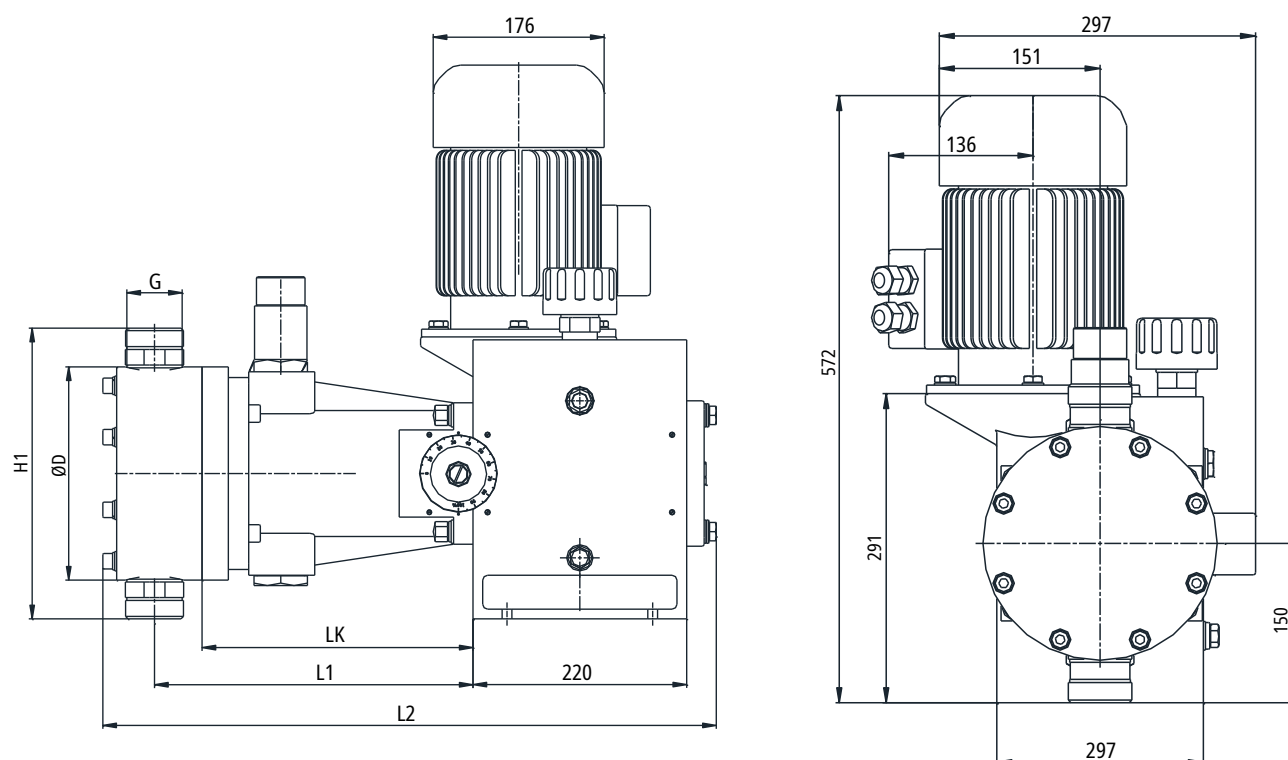
MEMDOS KMS 470-HP – 1536 and MEMDOS KMS-V 235, 291, 440, 640

Fig. 8: Dimensions

KMS	Piston-Ø	L1	L2	LK	H1	ØD	G
470-HP, 564-HP	58	294	697 (695*)	245	281	198	G2
582-HP	65	294	697 (695*)	245	281	198	G2
882, 1058	80	328	629 (627**)	279	300	220	G2
1100	90	336	643 (641**)	281	331	250	G2
1280, 1536	95	336	643 (641**)	281	331	250	G2

KMS-V	Piston-Ø	L1	L2	LK	H1	ØD	G
235, 291	58–65	294	697 (695*)	245	278	198	G2
440	80	328	629 (627**)	279	298	220	G2
640	95	336	643 (641**)	281	330	250	G2

Table 12: Dimensions

*) p > 10 bar, PVC/PVDF **) with stainless steel dosing head

7 Transportation



NOTE

Machine damage caused by leaking oil

The oil inlet at the dosing pump cannot be closed completely tightly. Oil may leak if the device is not transported in an upright position. This might cause damage to the control unit or the motor.

- Drain the oil completely through the oil outlet before you transport the dosing pump.

Please observe the following conditions when transporting the device:

- Clean the device thoroughly before transporting it. In the case of hazardous dosing media, you must also neutralise and decontaminate it.
- If the device is to be returned to the supplier/manufacturer, please note the documents to be enclosed (→ Decontamination declaration [► 34] and → Warranty claim [► 35]).

The complete component must be protected against breakage, humidity, cold and heat during transport. The transport and storage temperature must not exceed +70°C and must not fall below -15°C.

8 Storage

Storing the dosing pump correctly extends its service life. Avoid negative influences such as extreme temperatures, high humidity, dust, chemicals, etc.

Storage conditions:

- The storage place must be cold, dry, dust-free and moderately ventilated.
- The temperatures must lie between -15°C and +70°C.
- The relative humidity must be below 90%.

9 Installation



DANGER

Mortal danger from electric shock!

Electrically conductive liquid can enter pump housings, cable screw connections and mains connectors.

- ▶ Make sure that all protective measures comply at least with the requirements of protection class IP55.
- ▶ Always set up the dosing pump such that water cannot enter the housing.



DANGER

Mortal danger from electric shock!

Only work on electrical systems while the device is disconnected from the power supply.

- ▶ Switch the system voltage-free.
- ▶ Secure the system to prevent it from being switched on again.
- ▶ Measure the absence of voltage in the system with a measuring instrument.
- ▶ Earth the system and then short-circuit it.
- ▶ Cover adjacent live parts.

Observe the following points before installing the dosing pump:

- Before installing a piston diaphragm dosing pump, it must be cleaned of packaging residues.
- Also check the data on the rating plate of the dosing pump and motor.
- Secure the dosing pump to a stand or a mounting bracket with the fastening slots on the drive.

9.1 Installation location

When installing, follow the basic principles below:

- The valves must be vertical: Pressure valve at top, suction valve at bottom. Pay attention here to the arrow on the valve housing. The dosing head must be aligned such that the arrow points vertically upwards.
- You should install the dosing pump at a convenient height for operation.
- It must not be installed under the ceiling.
- The frame of foundation for fixing the dosing pump must not be subjected to jolts. The pump must be vibration-free and stable.
- There must be enough free space in the area of the dosing head and the suction and pressure valves for these parts to be easily dismantled if required. The entire space requirement for installation and maintenance is approximately 1 m².
- The distance from the sides of the dosing pump to the wall or other dosing pumps or equipment must be at least 3 cm.
- There must be a guaranteed flow of circulating air.

- The maximum ambient temperature must be complied with (→ Technical data [► 14]). If necessary, radiant heat from surrounding equipment must be screened.
- Avoid exposure to direct sunlight.
- The dosing pump is not intended for outdoor use unless appropriate protective measures have been taken to prevent dust and water from entering the housing.
- Note the dimensions of the mounting holes (→ Dimensions [► 17]).
- The tightening torque for tightening the fastening bolts.

9.2 Hydraulic installation

All non-outgassing media can be drawn in up to max. 2 mWS based on their specific weight. Connect the dosing pump to sufficiently-dimensioned lines. When installing fittings, ensure a free interior diameter which corresponds to the requisite line cross-section.

When connecting the hose, you must ensure that the hose nozzles are sufficiently dimensioned. Plastic union nuts may only be tightened by hand in order to avoid damage.

A positive pressure difference of at least 10 mWS must always exist between pressure valve (17) and suction valve (16) of the dosing pump (→ Section drawing of the pump [► 13]). This must be observed especially if the dosing pump is to be connected to a pressurised line on the suction side. If the pressure difference amounts to less than 10 mWS, a pressure retention valve must be installed in the dosing line.

The flow speed in the suction line should not exceed 0.3 m/s and 2.5 m/s in the pressure line. In the case of suspensions, special requirements must be observed. Ensure that the flow speed does not fall below 0.2 m/s in order to prevent sedimentation.

Oscillating displacement pumps generate a pulsing supply stream. The conveyed medium in the pipe line must be accelerated from shut down to the top speed with every stroke. The top speed with single head pumps is 3.2 times larger than the speed of a pump of the same size with an equal supply stream (e.g. a centrifugal pump), which must be taken into account in the dimensioning of pipe lines and fittings.

In many cases, we recommend installing pulsation dampers in the suction and pressure line. The dimensions of pulsation dampers are specified in the special instructions.

9.3 Electrical installation

The motor is to be connected as per the terminal connection plan and the motor rating plate, taking into account local regulations. The direction of rotation is to the right, viewed from the fan wheel. For the protection of the motor, motor protection corresponding to the nominal motor current is to be installed.

**DANGER****Mortal danger from electric shock!**

Electrically conductive liquid can enter pump housings, cable screw connections and mains connectors.

- ▶ Make sure that all protective measures comply at least with the requirements of protection class IP55.
- ▶ Always set up the dosing pump such that water cannot enter the housing.

**DANGER****Mortal danger from electric shock!**

Only work on electrical systems while the device is disconnected from the power supply.

- ▶ Switch the system voltage-free.
- ▶ Secure the system to prevent it from being switched on again.
- ▶ Measure the absence of voltage in the system with a measuring instrument.
- ▶ Earth the system and then short-circuit it.
- ▶ Cover adjacent live parts.

**DANGER****Danger to life from missing Emergency-Off switch!**

You must be able to disconnect the dosing pump from the power supply quickly following an electrical accident.

- ▶ Install an emergency stop switch or integrate the dosing pump into the plant safety concept.

**NOTE****Damage due to incorrect mains voltage**

The dosing pump can be damaged if you connect it to the wrong mains voltage.

- ▶ Observe the information on the mains supply that is given on the rating plate.

**NOTE****Insufficient electromagnetic compatibility**

When you connect the dosing pump to a socket without an attached protective earth, it is not possible to guarantee the interference radiation and interference immunity according to EMC regulations.

- ▶ Only connect the dosing pump to sockets with an attached protective earth.

- The electrical connection comply with local regulations.
- The dosing pump must be plugged into a grounded power outlet.
- To avoid dosing errors at the end of the process, the dosing pump must be locked electrically.
- The dosing pump must not be operated by switching the mains voltage on or off.
- Signal cables must not be laid parallel to high-voltage current lines or mains cables. You must route supply and signal lines in separate channels. An angle of 90° is required at line crossings.

9.3.2 Motor data

Comply with the data on the rating plate when connecting the electric motors to the mains supply and compare with the circuit diagram included in the scope of delivery. The terminal box of motors with a speed are usually equipped with a terminal strip with six terminals.

Examples:

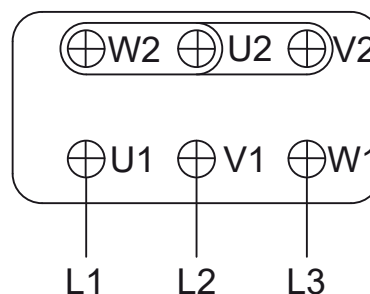


Fig. 9: Three-phase motor for Y-connection

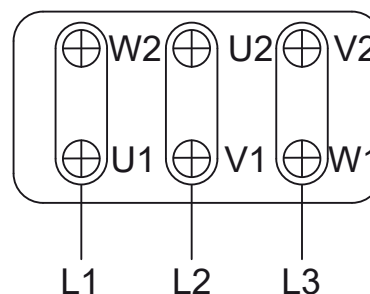


Fig. 10: Three-phase motor for delta connection

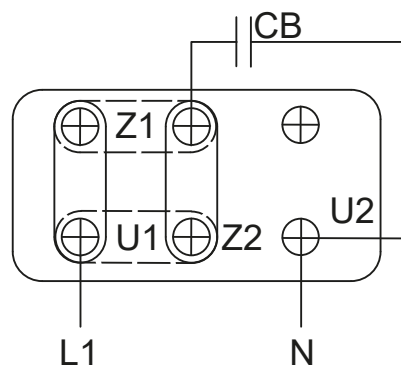


Fig. 11: AC motor

Every motor contains a circuit diagram in the terminal box. The mains supply must be connected by a specialist working with due care and attention. Adapt the supply lead cross-sections to the nominal current strength. Provide strain-relief for the connection cables.

9.3.1 Principles

Observe the following principles during the electrical installation:

It is imperative that the protective earthing conductor be connected to the marked earthing screw in accordance with VDE 0100. Use the original seal when closing the terminal box. Seal non-required introduction apertures dust- and water-tight.

9.3.3 Motor connection



DANGER

Mortal danger from electric shock!

The mains supply must be connected by a specialist working with due care and attention.

- Adapt the supply lead cross-sections to the nominal current strength.
- Provide strain-relief and connection cable.
- It is imperative that the protective earthing conductor be connected to the marked earthing screw in accordance with VDE 0100.
- Use the original seal when closing the terminal box.
- Seal non-required introduction apertures dust- and water-tight.

Comply with the data on the rating plate when connecting the electric motors to the mains supply and compare with the circuit diagram included in the scope of delivery. The terminal box of motors with a speed are usually equipped with a terminal strip with six terminals.

9.3.4 Direction of rotation

The motors are normally suitable for operation in both directions. Motors with only a single direction of rotation have this direction marked by an arrow.

9.3.5 Three-phase motors

To reverse the direction of rotation, you must lay the bridges horizontally.

9.3.6 Motor protection



DANGER

Protect the coils against thermal overload from blocking, overload and two-phase run!

Incorrect connections to the mains supply without a motor protection result in damage.

- It is imperative that the available protective equipment be connected before commissioning the motor.

Protect the coils against thermal overload from blocking, overload and two-phase run using (optional):

- Pos. 1: PTC thermistor temperature sensor in the stator winding in connection with a trigger device. A number of motors are not protected upon short circuit from a blocked rotor (inquiry required). Provide an additional motor protection switch if required.

- Pos. 2: Coil protection contact as an opener or closer in the stator winding. These provide no protection if the rotor is blocked. Provide an additional motor protection switch if required.
- Pos. 3: Motor protection switch with bi-metal trigger.

9.3.7 Motor maintenance



DANGER

Mortal danger from electric shock!

Only perform work on motors when they have been switched off and are voltage-free.

- Secure the motors against reactivation.

9.3.8 Roller bearing

The roller bearings are lubricated for life. The grooved ball bearing in motors in a series design up to the size 200 are covered on both sides. Given conventional coupling operation, approx. 20,000 operating hours are achieved in the 4-pole version or approx. 10,000 operating hours in the 2-pole version.

Given difficult operating conditions, varying and/or raised bearing loads, coolant temperatures over 40°C, vibrations etc. the grease-change intervals are correspondingly shorter. The same applies to high levels of humidity and excessive soiling. We generally recommend changing the grease and bearing after c. 5 years.

9.3.9 Information for explosion-proof EExe II motors



DANGER

Explosion protection of electrical systems!

When using the dosing pumps in explosion risk areas, you must observe the minimum requirements concerning zoning.

- When these motors are installed and operated, the provisions of DIN 57 165/VDE 0165/9.83 must be observed.
- The pertinent authority with regulatory responsibility for the site of operation is responsible for determining the degree of explosion hazard.



DANGER

Protecting the motor against impermissible warming!

Continuous overload of a motor will result in ever-stronger warming which results in gradual destruction of the insulation. This reduces the insulation so that a puncture occurs at the weakest position, which usually results in comprehensive destruction of the motor.

- Over-current device against impermissible warming of the motor in accordance with DIN VDE 0165.
- If the motor is to be monitored by an over-current device with a current-dependent delayed trigger in accordance with VDE 0660 (e.g. protective switch), all-pole protection is required.

The current-delayed triggers or relays are to be set to the nominal current of the motor. They are to be selected so that the motor is also thermally protected in the case of a short circuit (i.e. a locked rotor). This requirement is considered to have been met if the tripping time, based on the tripping characteristic curve (starting temperature 20°C) for the ratio I_A/I_N , is not greater than the warming time t_E specified for the temperature class affected.

Coils in delta circuits are to be protected so that the trigger or relay are switched in series with the coil phase windings. When selecting and setting up the trigger, you must work on the basis of the rated phase current i.e. $58 \times$ the nominal motor current. If the triggers are located in the mains supply lines, you must take protective measures that ensure sufficient motor protection even following a phase outage.

With pole-changing motors, current-dependent delayed triggers or relays are to be provided for every speed step. These should be locked against each other. If the motor is to be protected only by a temperature monitoring unit using temperature sensors, this design of the motor must be certified separately.

The motors may only be used for continuous operation and normal infrequent starts for which there is not significant start-up warming.

9.3.10 Mounting

EExe II motors of type IM V1, IM V5, IM V18 (shaft end points downwards) are delivered with a protective roof to prevent small, hard foreign bodies $>1\text{mm } \varnothing$ from falling into the fan guard.

Motors of type IM V3, IM V6, IM V19 (shaft end points upwards) must be installed in such a way that a corresponding cover or assembly with the working machine reliably prevents foreign bodies from penetrating vertically into the fan guard. The motor ventilation may not be impaired. The user is responsible for ensuring correct installation. Authorisation from the local technical monitoring agency is required.

9.3.11 Repairs



CAUTION

Repair damage from non-authorized workshops!

Repairs or changes to explosion-proof motors may only be performed by workshops accredited by the responsible national authority as experts. Only general repair work that does not influence the explosion protection can be performed without the involvement of an expert.

- ▶ Repairs may only be performed by workshops accredited by the responsible national authority as experts.
- ▶ This does not apply to repair work which does not influence the explosion protection such as: replacing bearings, fan cowls, fans, seals and terminal strips.

10 Commissioning

 Bleeding of the hydraulics completed.

All item numbers in the following sub-sections refer to → Section drawing of the pump [► 13].

10.1 Filling with gear oil

Before you start up the dosing pump, you need to fill the drive unit with the gear oil supplied.

✓ The gear oil is at hand.

1. Unscrew the ventilation screw (1) on the drive unit.
2. Remove the pressure relief valve (5) and the valve seat (18) by completely unscrewing the valve insert (27) on the pressure relief valve (5).
3. Set the adjusting knob (22) to "0" so that the hydraulic fluid that is poured in can reach the piston flange (6) through the spill ports in the piston (9).
4. Now slowly pour the gear oil into the drive unit until the oil level gauge is 3/4 covered. Do not add any more oil.
 - ↳ After a few minutes, the gear oil must be visible on the valve seat of the pressure-relief valve (5).
5. Check the level on the oil level gauge. Top up the gear oil if necessary (oil level gauge 3/4 covered).
6. Turn the valve seat and the pressure relief valve back into the piston flange.
7. Screw the ventilation screw back in.

 Drive unit filled with gear oil.

10.2 Flooding pump with dosing medium

The pump is flooded with dosing medium during initial commissioning.

1. If the pump does not have any inflow pressure, you can remove the pressure valve (17) and fill the dosing head (14) with the medium to initiate the first suction process.
2. Screw the pressure valve (17) back in (pay attention to the direction of flow!).
3. Connect the pressure line.
4. Switch the motor on.
5. Set the dosing capacity to 100% using the adjustment knob (22).
6. After 1-2 minutes operating time, you can set the desired dosing capacity on the adjusting knob (22).

 Pump flooded with dosing medium.

10.3 Bleeding the hydraulics

We recommend bleeding the hydraulics again via the pressure relief valve (5) after a number of operating hours.

1. Unscrew the adjusting screw.
2. Lift the sealing piece (18) of the pressure relief valve (5) and the valve seat.
3. After the bleeding process, screw the adjusting screw back in as far as it will go.

11 Operation

Dosing accuracy of the motor piston diaphragm dosing pump: Deviations of up to 1% are possible.

11.1 Readjusting the stroke adjustment

All item numbers in this sub-section refer to → Section drawing of the pump [► 13].

The zero point (zero dosing) of the pump is set at the factory according to the pressure relief valve. If the actual operating pressure is significantly above or below this value, readjusting the zero point produces more exact dosing capacity values.

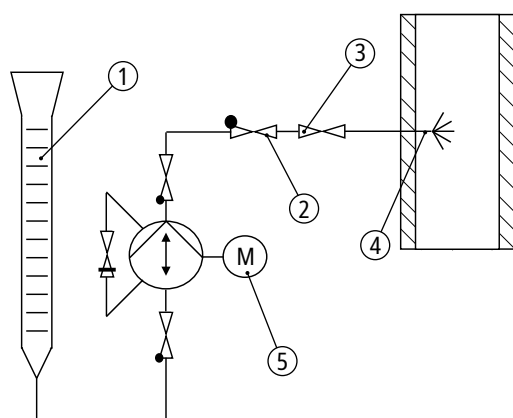


Fig. 12: Readjusting the stroke adjustment

1 Measuring tube	2 Non-return valve
3 Ball valve	4 Injection nozzle
5 Dosing pump	

1. Connect a measuring tube on the suction side (→ Fig. 12: Readjusting the stroke adjustment [► 27]).
2. Set the dosing capacity to approx. 15%.
3. Switch on the dosing pump and slowly turn the adjusting knob (22) clockwise until the observed dosing in the measuring tube stops.
 - ↳ The zero point is set exactly to the present operating pressure.
4. Loosen the set screw (21) and turn the dosing scale (23) only until the zero line on the scale matches the colour marking on the actuator.
5. Tighten the set screw (21) lightly.
6. Re-connect the suction line to the system.

☐ Stroke adjustment readjusted.

NOTE! The pump must always be readjusted with the pressure line connected and normal system pressure.

12 Maintenance

Products from Lutz-Jesco GmbH are manufactured to the highest quality standards and have a long service life. However, some parts are subject to operational wear.

This means that regular inspections are necessary to ensure a long operating life of the product. Regular maintenance protects the product against operational disruptions.

12.1 Lubricants

Lithium-saponified grease K3K in accordance with DIN 51502 is used as a lubricant.

- Service temperature range -20°C to +120°C.
- Drop point approx. +185°C. e.g. Shell, Alvania Grease R3, Calypsol H443GF.

Replace the bearing given conspicuous noise from the bearing or an unusually high grease outage. Grease sliding seals – axial or radial – within an appropriate period.

Lubricant for pumps ≤ 25 bar

Key figures		Alternative oils	
Density 15°C	0.870 g/cm ³ (DIN ISO 12185)	Total	EQUIVIS ZS 68
Viscosity 40°C	68 mm ² /s (ASTM D 7042)	Shell	Tellus T68
Flash point	>200°C (DIN ISO 2592)	OMV	HLP-M68
Change of state	≤-24°C (DIN ISO 3016)	TEXACO	Rando HDZ 68

Table 13: Lubricant for pumps ≤ 25 bar

Lubricant for pumps > 25 bar

Key figures		Alternative oils	
Colour number	5.5 (DIN ISO 2049)	BP	BP Energol GR-XP 220
Density 15°C	0.900 g/cm ³ (DIN ISO 12185)	ESSO	SPARTAN EP 220
Viscosity 40°C	220 mm ² /s (DIN 51562)	Shell	Shell Omala Oil 220
Flash point	>210°C (DIN ISO 2592E)		
Change of state	≤-10°C (DIN ISO 3016)		

Table 14: Lubricant for pumps > 25 bar

Lubricant for food approval

Key figures	
Colour number	5.5 (DIN ISO 2049)

Key figures	
Density 15°C	0.849 g/cm ³ (DIN ISO 12185)
Viscosity 40°C	100 mm ² /s (DIN 51562)
Flash point	>210°C (DIN ISO 2592E)

Table 15: Lubricant for food approval

12.2 Oil change

The gear oil of the dosing pump must be changed approximately every 8000 operating hours. Use only the oil prescribed by the works. If the pump has to be operated with food-grade gear oil, then it may only be refilled with food-grade gear oil.

At the same time, the diaphragm should be replaced as a preventive measure.



CAUTION

Danger from use of the incorrect oil!

If the pump has to be operated with food-grade gear oil, then it may only be refilled with food-grade gear oil.

- Use only the oil intended for the dosing pump.

12.2.1 Replacing the diaphragm

The item numbers in this subsection refer to → Section drawing of the pump [► 13].

- ✓ An oil drip tray is at hand.

1. Unscrew the screw plug (24) and drain the gear oil. Use the oil drip tray for this purpose.
2. Take a new seal and screw the screw plug (24) back in. Tighten well.
3. Shut off and disconnect the suction and pressure-side dosing line system.
4. Remove the screws (15) from the dosing head (14).
5. Remove the diaphragm (10) complete with diaphragm holder plate (11). The piston flange (6) with piston (9) and piston return spring (8) are not affected.
6. Dismantle the diaphragm (10) by loosening the cap nut (13) and the diaphragm spring (12).
7. Replace the old diaphragm with a new diaphragm.
8. Fit the diaphragm back onto the diaphragm holder plate (11) complete with diaphragm spring and cap nut.
9. Insert the diaphragm with diaphragm holder plate into the dosing head.
10. Screw the dosing head (14) back on with the screws, whereby the arrows of the valves (16 and 17) must point upwards.

NOTE! To avoid damaging the dosing head, the screws (15) on plastic dosing heads must be tightened carefully.

- ▢ Diaphragm replaced.

12.2.2 Adding oil

After replacing the diaphragm, pour in the gear oil and put the pump into operation.

- ✓ Gear oil of viscosity class ISO-VG-68 or ISO-VG-220.
The standard oil on delivery is DIVINOL HVI ISO 68 or, for higher pressures (> 25 bar), DIVINOL ICL ISO 220.
- ✓ 1-litre (MEMDOS KMS 1-HP - 140) or 6-litre (MEMDOS KMS 137 - 1536) oil container
- ▶ Fill with gear oil → Filling with gear oil [▶ 26].

12.3 Cleaning or replacing the valves

If the dosing capacity of the pump decreases, the valves (16 and 17 → Section drawing of the pump [▶ 13]) are dirty or worn and must be replaced.

1. Unscrew the valves.
2. Disassemble the valves with pointed pliers by unscrewing the valve parts.
3. Remove the ball and seat.
4. Clean the valve parts.
5. Replace damaged parts with new parts.
6. Re-assemble all the parts in the reverse order.

NOTE! When screwing in the valves, pay attention to the direction of flow (arrow direction). It is also important that the O-rings are placed cleanly into the intended groove. The valves may only be tightened by hand.

☞ Valve maintenance completed.

13 Troubleshooting

See below for information about how to rectify faults on the device or the system. If you cannot eliminate the fault, please consult with the manufacturer on further measures or return the device for repair.

Fault	Possible cause	Remedy
No or insufficient dosing capacity	Air in pipework system	Vent the pipes
	Non-return valves do not close	Remove and clean the non-return valves on the suction and pressure side, replace if necessary
	Non-return valves incorrectly installed	Check arrow on non-return valve, install valves correctly
	Pressure relief valve is vibrating	Check the suction and pressure-side pipework for blocked fittings or blockages and rectify
	Air in the hydraulic system of the pump	Bleed the pump hydraulics as described in the documentation
	Back pressure too low	• Install a pressure retention valve • Check the pressure retention valve and set it in accordance with the documentation
	Piston spring broken	Replace piston spring
Pressure relief valve is vibrating	Suction and pressure-side pipework blocked or fittings shut off System pressure too high	Check the suction and pressure-side pipework for blocked fittings or blockages and remove them • If possible, replace the pressure relief valve with a suitable replacement (consult Lutz-Jesco) • Replace the pump with a different type (consult Lutz-Jesco)
Oil level too low	Leaks in the housing	Check the affected seals and replace if necessary
	Diaphragm rupture	Change the membrane

Table 16: Troubleshooting

14 Shutdown and disposal

14.1 Shutting down in an emergency

Observe the following instructions in an emergency:

- In an emergency, you must immediately disconnect the dosing pump from the mains supply or activate the Emergency Stop switch installed in the system.
- Depending on the type of incident, you must depressurized the hydraulic connections or locked to prevent dosing medium from escaping.
- You must follow the safety data sheet of the dosing medium.

14.2 Disposal of old equipment

Observe the following instructions when disposing of an old device:

- Clean the device thoroughly. In the case of hazardous dosing media, you must also neutralise and decontaminate it.
- Dispose of dosing medium residue properly.
- You must dispose of the device in accordance with local laws and regulations. It should not be disposed of as domestic waste!

As the disposal regulations may differ from country to country, please consult your supplier if necessary.

In Germany, the manufacturer must provide free-of-charge disposal. However, this requires the device to have been safely returned along with a decontamination declaration (→ Decontamination declaration [► 34]).

15 Spare parts

15.1 Dosing head versions

Standard version

Dosing head with standard suction and pressure valve: The material and type of the dosing head with suction and pressure valve has been adapted to the corresponding media and operating states.

The following materials are available: PVC, PVDF and 1.4571.

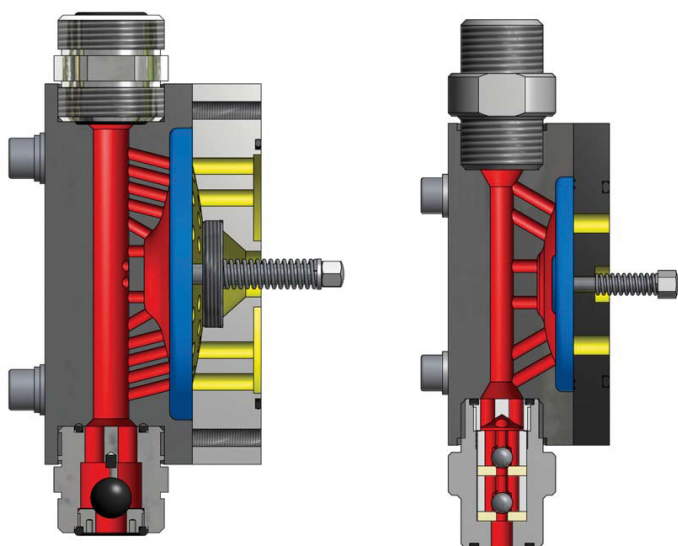


Fig. 13: Standard dosing head

Dosing head for viscous and abrasive media

Special design of dosing head with suction and pressure valve for abrasive media.

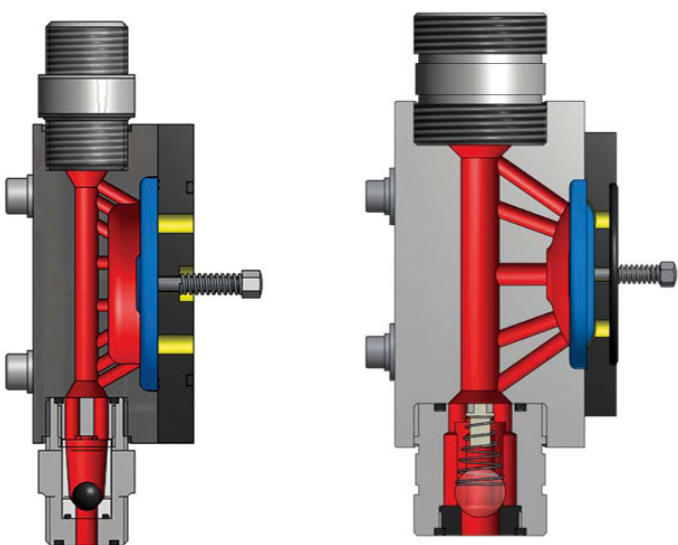


Fig. 14: Dosing head for abrasive and viscous media

16 EU declaration of conformity

**EG-KONFORMITÄTSERKLÄRUNG**

EC DECLARATION OF CONFORMITY

DECLARATION DE CONFORMITE C.E.

im Sinne der EG-Richtlinie Maschinen 2006/42/EG, Anhang II 1.A

according to the Directive on Machinery 2006/42/EC, Annex II 1.A

suivant la Directive relative aux Machines 2006/42/CE, Annex II 1.A

Der Hersteller
The Manufacturer
Le Fabricant

Lutz-Jesco GmbH
Am Bostelberge 19
D-30900 Wedemark

erklärt hiermit, dass folgendes Pumpenaggregat

declares hereby that the following pump aggregate

déclare par la présente que la pompe suivante

Produktbezeichnung:**Motor-Kolbenmembrandosierpumpe**

Product name:

Motor driven piston diaphragm dosing pump

Désignation du produit:

Pompe doseuse à piston et membrane par moteur

Typ / Type / Type:**MEMDOS KMS / MEMDOS ZKMS****Serien-Nr. / Serial-No. / N° de série:****s. Typenschild / Identification plate / Plaque signalétique**

in der gelieferten Ausführung allen einschlägigen Bestimmungen der oben genannten Richtlinie sowie den weiteren angewandten, nachfolgend aufgeführten Richtlinien und Normen entspricht.

complies in it's supplied version with all valid requirements of the above mentioned directive as well as the following additional directives and standards.

est construit, dans sa version fournie, en conformité avec toutes les spécifications en vigueur de la directive mentionné ci-dessus ainsi qu'avec les directives et normes suivantes.

Angewandte weitere EU-Richtlinien:

Applied additional EC-Directives :

Directives CE complémentaires appliquées :

EMV-Richtlinie (EMC) 2014/30/EU, Niederspannungsrichtlinie 2014/35/EU, Richtlinie RoHS 2011/65/EU

Electromagnetic Compatibility Directive 2014/30/EU, Low Voltage Directive 2014/35/EU Directive concernant la compatibilité électromagnétique 2014/30/EU,

Directive concernant la basse tension 2014/35/EU

Directive RoHS II 2011/65/EU

Angewandte harmonisierte Normen:

Applied harmonized standards:

Normes harmonisées appliquées: **EN 809:2012-10 EN ISO 12100:2011-03**

Die speziellen technischen Unterlagen gemäß Anhang VII Teil B können auf begründetes Verlangen einer einzelstaatlichen Stelle per Post übermittelt werden.

Special technical documents according to annex VII Part B can be sent by mail upon well-founded requests from national authorities.

Des réglementations au niveau national peuvent justifier l'envoi par voie postale des documents techniques spéciaux selon annexe VII Partie B.

Bevollmächtigte Person für die Zusammenstellung der technischen Unterlagen:

Authorized person for the composition of the technical documentation:

Personne autorisée pour la composition de la documentation technique:

Lutz-Jesco GmbH

Heinz Lutz, Geschäftsleitung /
Management / Direction

Wedemark, 01.02.2019

Datum / Date / Date

01.02.2019

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17 Decontamination declaration

Due to legal regulations for the protection of our employees and operating facilities, we need the completed and signed declaration of decontamination in order to process your return.

- 1. Copy this page and complete it **for each device separately!**
- 2. Attach the declaration to the outside of the packaging.
- 3. Return the device.

Decontamination declaration

We forward the following device for repairs:

Device designation:

Part no.:

Order no.:

Date of delivery:

Reason for repair:

Medium dosed

Description:

Irritant: ☐ Yes ☐ No

Properties:

Corrosive: ☐ Yes ☐ No

We hereby certify that the device has been thoroughly cleaned inside and out before being returned, contains no hazardous chemical, biological and radioactive agents and has been drained of oil.

If the manufacturer has to perform additional cleaning, we shall be invoiced the costs incurred.

We certify that the aforementioned information is correct and complete and that the device will be returned in accordance with legal requirements.

Company / Address:

Phone:

Fax:

E-mail:

Customer no.:

Contact person:

Date, Signature:

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18 Warranty claim

If the device breaks down within the period of warranty, please return it in a cleaned condition with the fully completed warranty claim.

1. Copy this page and fill in all fields.
2. Pack the device together with the completed warranty claim.
3. Return the device.

Warranty claim		Date:
Sender		
Company:	Phone:	
Address:	Fax:	
.....	E-mail:	
.....	Contact person:	
Manufacturer order no.:	Delivery date:	
Device type:	Serial number:	
Nominal power / nominal pressure:		
Fault details:		
.....		
.....		
.....		
.....		
.....		
Operating conditions of the device		
Application site / site description:		
.....		
.....		
Accessories used:		
.....		
.....		
Commissioning (date):		Operating hours (approx.):
Please state the specific characteristics of the installation and enclose a basic sketch or photograph of the installation, indicating the materials, diameters, lengths and heights.		
.....		



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