

## MIDIDOS E

Diaphragm Dosing Pump



**EN**

<sup>02</sup>

## Operation & Maintenance Instructions

Read these operation and maintenance instructions before start up!

To be held for future reference.

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## 1. Safety

### 1.1 General

This Operation & Maintenance Manual contains basic information to be noted during installation, operation and maintenance. It is therefore essential that the contractor read the manual before installing and commissioning the pump/system as well as by the relevant operating personnel/owner of the pump/system. It must remain accessible at the dosing pump/system for reference at all times.

In addition to the general safety instructions under this main heading of Safety, the special safety precautions outlined another section must also be observed.

### 1.2 Warning symbols used in this Operation & Maintenance Manual

This Operation & Maintenance Manual contains vital information, which may endanger people, the environment and the dosing pump/system if disregarded. These statements are identified by the following symbols:

#### **DANGER!**

Refers to an imminent danger.

Non-compliance can lead to death or serious injury.



#### **WARNING!**

Refers to a potentially hazardous situation. Non-compliance can lead to death or serious injury.



#### **CAUTION!**

Refers to a potentially hazardous situation. Non-compliance can lead to minor injury or property damage.



#### **NOTICE! or INFORMATION!**

Appear in conjunction with safety instructions, which may endanger the pump/system and its operation if disregarded.



#### **IMPORTANT!**

Draws attention to supplementary information to make the work easier and ensure trouble free operation.



Markings that are affixed directly to the pump, such as

- Cable markings
- Markings for process fluid connections

must be observed without fail and remain fully legible at all times.

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### 1.3 Qualification and training of personnel

The personnel employed for installation, operation, inspection and maintenance work must be qualified to do so. The areas of responsibility, competence and supervision of the personnel must be precisely defined by the owner. Personnel who do not have the required knowledge must be duly trained and instructed. If necessary, this training can also be provided by the manufacturer/supplier on behalf of the dosing pump's owner. In addition, the owner of the system must ensure that the relevant personnel are fully familiar with and have understood the contents of this Operation & Maintenance Manual.

### 1.4 Important safety instructions

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

READ AND FOLLOW ALL INSTRUCTIONS!



**WARNING!**

**WARNING!**

*To reduce risk of injury, do not permit children to use this product unless they are closely supervised at all times.*



**WARNING!**

**WARNING!**

*Risk of electric shock. Connect only to a grounding type receptacle protected by a ground-fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the receptacle is protected by a GFCI.*

Do not bury the cord. Locate the cord to minimize abuse from lawn mowers, hedge trimmers, and other equipment.



**WARNING!**

**WARNING!**

*To reduce the risk of electric shock, replace damaged cord immediately.*



**WARNING!**

**WARNING!**

*To reduce the risk of electric shock, do not use an extension cord to connect the unit to the electricity supply; provide a properly located outlet.*

SAVE THESE INSTRUCTIONS!

### 1.5 Hazards due to non-compliance with safety instructions

Failure to comply with safety instructions may endanger not only people, but also the environment and the dosing pump/system. Non-compliance with the safety instructions can lead to the loss of all entitlement to damages.

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The following hazard in particular may arise:

- Danger to people due to electrical, mechanical and chemical effects.
- Failure of dosing pump/system functions.
- Failure of specified methods for maintenance and repair.
- Danger to the environment due to leakage of hazardous substances.

## **1.6 Safe operation**

The safety instructions in this Operation & Maintenance Manual must be observed.

The owner is responsible for ensuring the compliance with local safety regulations.

## **1.7 Safety instructions for the owner/operator**

- Leakages (e.g. due to ruptures in the lining) of hazardous substances (e.g. toxic or abrasive) must be discharged in such a way as to exclude all danger to people and the environment. Statutory regulations must be observed.
- Danger due to electric current must be excluded (for further details, refer to the German VDE standards as well as local regulations or chapter 1.4).

## **1.8 Safety instructions for inspection-, maintenance-, and installation work**

The owner must ensure that all inspection, maintenance and installation work is undertaken by authorized and duly qualified personnel who have also studied this Operation & Maintenance Manual.

The dosing pump must always come to a complete stop before starting any work on the pump. The procedure specified in this Operation & Maintenance Manual for shutting down the Dosing/pump/system must be observed without fail.

Dosing pumps or systems in contact with potentially harmful media must be decontaminated.

All safety mechanisms and guards must be refitted and reactivated as the work is completed.

The instructions outlined in chapter 7.2 "Installation location" and 9. "Start up" must be observed before starting the pump/system.

## **1.9 Unauthorized modifications and production of spare parts**

The dosing pump may only be modified or converted in consultation with the manufacturer. Genuine spare parts and accessories authorized by the manufacturer ensure greater safety. The use of other parts can void the liability for the subsequent consequences.

## **1.10 Impermissible modes of operation**

The operational safety of the pump supplied can only be guaranteed when it is used in conformity with its intended use as specified in our contracts, especially in our order confirmation. The limit values specified in these documents must not be exceeded under any circumstances.

## 1.11 Dosing of chemicals



### CAUTION!

#### CAUTION!

*When working on dosing systems, the accident prevention regulations applicable on-site must be observed and the specified personal protective clothing is recommended, depending on the hazard associated with the metered medium:*



Googles



Protective gloves



Protective suit

It is recommended that all people responsible for the installation and maintenance of piping, hoses and accessories should wear this protective clothing.

Before working in the dosing pump and plant, disconnect it from the power supply and protect it from reconnection.



### CAUTION!

#### CAUTION!

*Any chemicals still present in the dosing head may spray out when the power supply is reconnected. This may lead to caustic or other burns to the face and hands. The dosing lines must always be reconnected before starting the pump up again.*

*The chemical resistance of the pump's materials of construction must be verified before dosing with aggressive media!*

*The dosing pump's dosing head as well as connections and lines of the system may be under pressure. Work carried out on the dosing system requires special safety precautions and may be carried out only by instructed technical personnel.*



### CAUTION!

#### CAUTION!

*Chemicals may spray out. This may lead to caustic or other burns. Always release the pressure from the dosing pump system before starting work on the pump.*

*Flush the pump with a harmless medium (mainly water) before working on the dosing head, valves and connections in order to avoid unintentional contact with the dosing medium.*



### WARNING!

#### WARNING!

*Never look into the open end of a clogged line or valve. Chemicals may emerge unexpectedly and cause caustic or other burns to hand and face*

*Before start up, all connections must be inspected for correct tightness and, if necessary, must be further tightened using the appropriate tools.*

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**CAUTION!**

*If connections at the dosing head are loosened during operation for venting or other reasons, the leaked chemicals must be removed professionally. This is the only way to avoid the danger of physical injury and corrosion at the dosing pump. Leaking chemicals may also damage the diaphragm pump at its mounting points.*

**CAUTION!****CAUTION!**

*When changing the chemical medium, check whether the pump and the system's materials of construction are chemically resistant. If there is danger of a chemical reaction between different media, a thorough cleaning is first mandatory.*

**CAUTION!****IMPORTANT!**

*After adjusting the stroke length, the locking screw must be retightened. Otherwise the adjusting knob may change its position. Thus causing irregular flow rates.*

**IMPORTANT!****CAUTION!**

*The base area of the dosing pump must be kept clear to allow sufficient air circulation to cool the motor down. If there is a danger of fluid collecting underneath the base of the pump, the pump must be elevated.*

**CAUTION!****DANGER!**

*Fire hazard. Pressure surge: catapulting parts could kill you. MIDIDOS E must not be used under any circumstances in an explosive environment.*

**DANGER!****1.12 Scope of delivery****IMPORTANT!**

*Please unpack the dosing pump and ordered accessories with great care in order not to miss any small parts. Immediately compare the scope of delivery with the delivery note. The cause of any discrepancies must be determined.*

**IMPORTANT!**

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## **2. General**

Dosing pumps are used to add chemicals in various processes. As leak free diaphragm dosing pumps with a dosing range of between max. 2 l/h and 120 l/h the MIDIDOS E has a broad field of application.

The MIDIDOS E is supplied as a simple dosing pump with the dosing head mounted on the left hand side.

The motor is connected directly into a terminal box. The electrical power is supplied through a three-phase motor. Operation with alternating voltage is likewise possible with the use of an operating capacitor. To adapt the dosing performance the stroke length can be set manually between 0 – 100%.

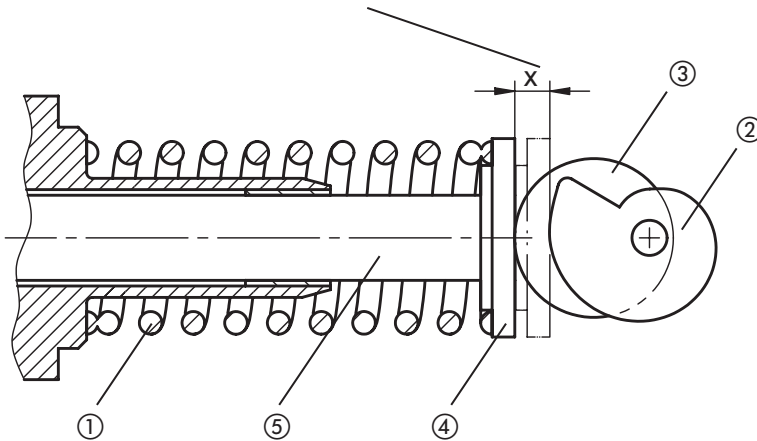


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### 3. Function

The gearbox is based on a single level worm-wheel transmission. The gear parts as well as the storage are greased for life. The dosing stroke functions through a cam that the membrane moves over a spring-loaded tappet. The siphon is reached through a spring-loaded position.

Drive eccentric continues to run free until the plunger plate is reached again.



#### Legend

- ① Retaining spring for the siphon
- ② Stroke limiter eccentric cams
- ③ Eccentric drive cam
- ④ Impact plate
- ⑤ Diaphragm rod

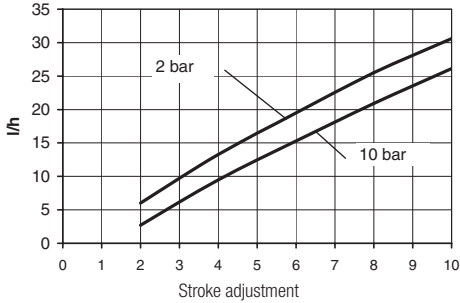
## 4. Technical Data

MIDIDOS	E 24	E 48	E 72	E 120
Flow rate [l/h] - max. pressure [bar]	24 - 10	48 - 10	80 - 6	114 - 4
max. pressure at 1~ mode [bar]	10	5	3	2
Stroke frequency [1/min]	48	96	142	96
Stroke volume [ml/Hub]	8.5	8.5	8.5	20.8
Diaphragm-Ø [mm]	64	64	64	90
Suction lift [mbar]	700	700	700	300
Max. supply pressure [mbar] ( $\Sigma$ static + dynamic)	500	500	500	500
Double ball valve in pipe diameter	DN6	DN6	DN6	DN10
max. environment temperature [°C]	45 (with PVC max. 40)			
max. medium temperature [°C]	50 (with PVC max. 35)			
Motor specifications 3-Phase	400V / 50Hz - 440V/60Hz - 0,05kW - 0,5A			
Motor specifications 1 -Phase	230V/50Hz - 0,05kW - 0,85A, 120V/60Hz - 0,09kW - 1,6A			
Weight of plastic model [kg]	7	7	7	8

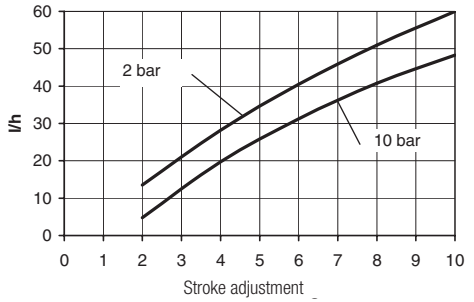
## 5. Mechanical Handling Capacity Performance Curves

The performance curves of the handling capacity are at 20°C (68°F) for water. Media (specific gravity and viscosity) and temperature change the handling capacity. Therefore dosing pumps have to be litered out when used.

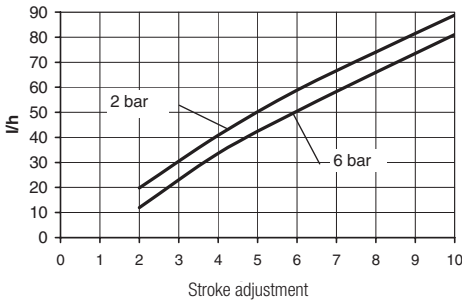
**MIDIDOS E24**



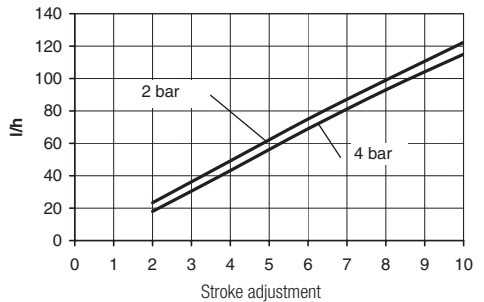
**MIDIDOS E48**



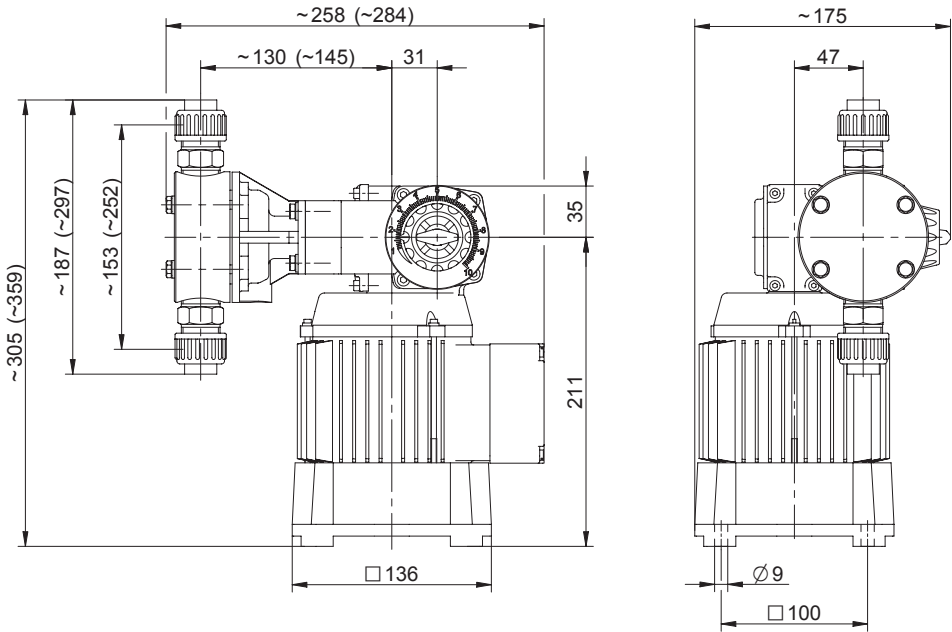
**MIDIDOS E72**



**MIDIDOS E120**



## 6. Measurement Drawing



Dimensions in mm, Dimensions for MIDIDOS E 120 in parenthesis.

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## 7. Installation

### 7.1 General information

For the selection of a dosing pump when designing a system as well as for the installation and operation, local rules and regulations must be obeyed. This applies to the selection of appropriate materials of construction for the pump, the handling of chemicals and the electrical installation.

Likewise the technical data of the dosing pump (chapter 4) must be taken into consideration. The system must be designed accordingly/properly (e.g. loss of pressure in the piping, depending on nominal diameter and length).

The designer and the operator are responsible for ensuring that the whole system including the dosing pump is constructed in such a way that neither plant equipment nor buildings are damaged in the case of chemical leakage due to the failure of wear parts (e.g. a rupture in the dosing membrane) or burst tubing. If the chemical system poses great potential danger, the installation must be carried out in such a way that that no unreasonably high consequential damages occur, even if the dosing pump fails. Therefore we recommend the installation of leakage probes and containment tanks.

The draining pipe of the dosing head must be visible in order for a diaphragm failure to be detected. The flow from the drain pipe must be routed downwards without obstacles.

To increase the dosing accuracy and to ensure the functional reliability, we recommend the use of additional accessories. These include, amongst others, backpressure valves, relief valves, leakage probes and low level indicators, as shown in the installation examples.

Always use appropriate tools for the installation of plastic connecting parts. To avoid damage, never apply excessive force.

#### **IMPORTANT!**

*Plastic parts (especially parts made out of PVC) can be tightened and loosened with greater ease if the thread is first lubricated with Vaseline or silicon grease.*

#### **NOTICE!**

*The compatibility of the lubricant with the dosing chemicals must be verified.*

### 7.2 Installation location

The installation location of the dosing pump must be easily accessible for the operating and service staff. When installing the dosing pump below the level of the process fluid, care must be taken to ensure that chemical leakages due to a broken diaphragm cannot cause any damage for example – collection pan, leakage sensor.

Further more it is possible to install the pump direct to the dosing supply tank.

The maximum environment temperature permissible for the dosing pump must be observed (see technical specifications). Heat radiation from the apparatus and heat exchanges must be shielded from radiation heat, so that the dosing pump can sufficiently emit its own heat. Direct sunlight must be avoided. When the dosing pump is installed in the open, a canopy is provided as protection the effect of the weather.



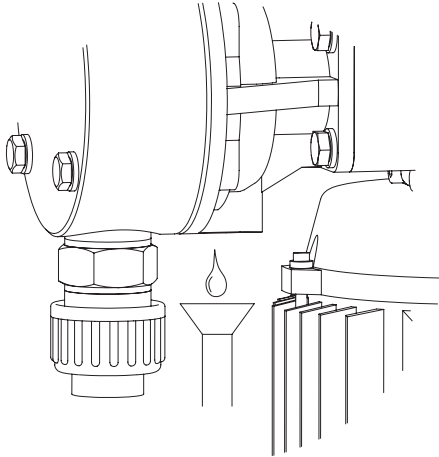
**IMPORTANT!**



**CAUTION!**

The dosing pump is to be erected with the suction and pressure valves in an upright position. To guarantee its stability, the pump must be screwed appropriately into the ground. The system's piping must not put any force on the dosing pump's connections or valves. To avoid backfiring dosing after the process end, an electrical and hydraulically locking device is provided on the dosing pump.

### 7.3 Drainage discharge



#### **NOTICE!**

*Released gases can destroy the dosing pump's transmission!*



#### **NOTICE!**

The drainage as well as the leakages from the separate chamber must slope downwards, i.e. to go in a descent to the collection tank. Under no circumstances is the drainage pipe to go direct through the lidded receptacle back to the medium; otherwise the released gases can infiltrate the dosing pump's transmission. The drainage pipe must be directed only to a gas free collection tank (in a decline) or it has to be lead on a decline to a collection funnel over which it then has to end with enough distance in between. The leakages can then be directed back via the funnel through the tank cover. Moreover possible leakages are detected with greater ease from the gap to the collection funnel.

### 7.4 Pressure sustaining and safety valves

Pressure sustaining valves are accessories for optimizing the dosing process. They are used:

- to increase the dosing accuracy in the presence of fluctuating back pressure
- with long dosing lines in order to prevent excess delivery, as the accelerated medium continues moving on account of its own inertia even when the delivery stroke has already ended.
- to prevent siphoning when the suction pressure is higher than the pressure system.

Safety and pressure relief valves protect the dosing pump and the associated accessories and lines from overloads. They prevent an impermissibly high increase of pressure on

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the discharge side of the dosing pump that may be caused for example by the accidental closing of valves whilst the pump is in operation or by a clogged injector.

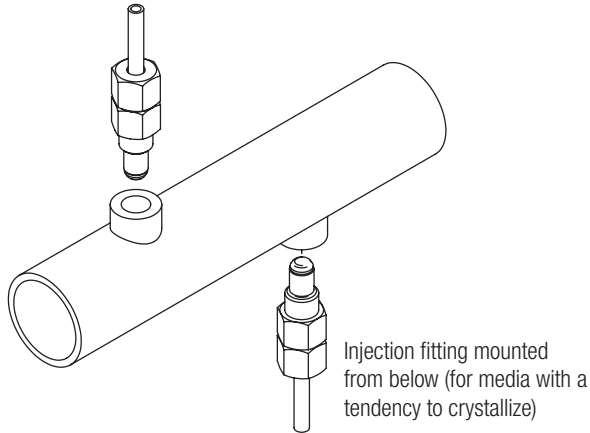
The PENTABLOC is a combi-accessory that combines, amongst others, the function of a pressure-sustaining valve as well as being a safety valve. Furthermore, the functions such as anti-siphon, pressure-relief and flow indicator and monitor are also integrated.

## 7.5 Injection nozzles

Injection nozzles are used to mix the metered process fluid into a main stream and simultaneously fulfill a non-return function. The injection nozzle is usually installed in the main line from above. Installation from below is only recommended in the case of media with a tendency to crystallize. Thus entrapped air is able to leave.

In the case of media with a tendency to contaminate the injector, it is advisable to use an injector that can be dismantled for maintenance and shut off.

Injection fitting mounted from above



## 7.6 Electrical connection

- The electrical connection of the dosing pump must be made according to the local rules and regulations and may only be carried out by technical experts.
- The type of cable and supply pipe's cross section of the cable must be chosen in accordance with the engine's data.
- The connection of the cable to the engine terminal box must be carried out correctly. We recommend a plug socket screw joint with strain relief.
- The required level of protection is guaranteed by the correct installation of the electrical connector.
- To avoid incorrect dosing after the process ends an electrical and hydraulic locking device is provided for the dosing pump.

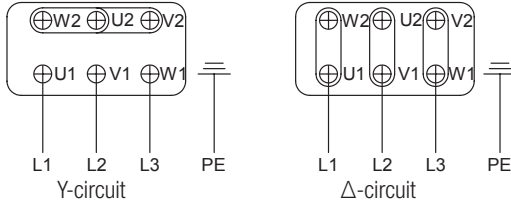
## Electrical connection data

(variants on request)

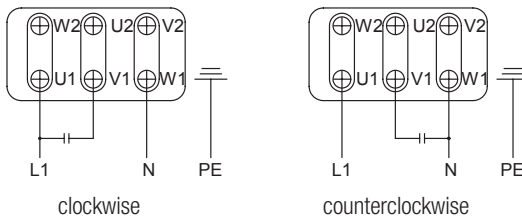
Pump sizes MIDIDOS	voltage [V]	output [Watt]	electricity [A]
E 24...120	400/230	50	0,50/0,87
	50 Hz		
	440/254	80	0,46/0,80
	60 Hz		
	400/230	80	0,42/0,73
	60 Hz		
	230/1-Phase	50	0,85
	50 Hz		
120//1-Phase	90	1,6	
60 Hz			

## Connection system for the driving motor

Supply of three-phase current



Alternating current supply with motor in the stonecutter circuit



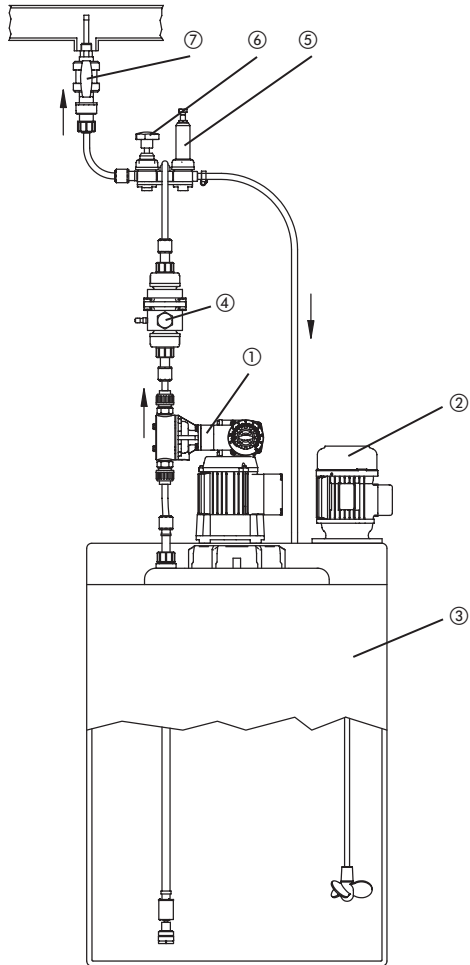
Special connector-variant: Other electrical connectors are to be taken from the separately shown circuit diagrams.



## 7.7 Installation example

### Legend

- ① MIDIDOS E
- ② Electric agitator
- ③ Chemical tank
- ④ Pulsation dampener
- ⑤ Pressure relief valve (safety valve)
- ⑥ Diaphragm stop-valve
- ⑦ Injection nozzle



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## 8. Stroke Length Setting



### **CAUTION!**

*The pump's stroke length is to be moved only when the motor is running!*

### **CAUTION!**

Set the stroke length as follows:

1. Loosen the mounted screw of the setting knob anti-clockwise (around to the left)
2. Set the stroke length to the desired value according to the capacity performance curves (chapter 5)
3. Under the retention of the stroke length setting, tighten the mount screw again.

---

## 9. Start Up

### NOTICE!

Personal protective equipment as specified by on-site regulations must be worn at all times while working on the dosing pump!



**NOTICE!**



Goggles



Protective gloves



Protective suit

1. Before starting up the dosing pump all the stages for "Installation" in chapter 7 have to be carried out. The safety advice must be adhered to.
2. The dosing pump is connected externally to the installed control system.
3. The manual performance setting should be set at maximum stroke length for improved suction. During the initial suction it should run without contra-flow pressure. For this purpose the installation of a relief valve on the pressure side of the dosing pump is recommendable.
4. If a suction aid is installed this has to be filled up with chemical beforehand. In case the dosing pump does not have suction, loosen the pressure valves and fill the dosing head with fluid when the pump is turned off. With safe media the dose medium itself can be used, other a neutral medium that does not disturb the process. (In many cases water is suitable).

### WARNING!

Chemicals can spray out. This may lead to caustic or other burns. Ensure that the line is not under pressure before disconnecting it.



**WARNING!**

Mount discharge valve, switch on the dosing pump and allow it to prime again.

5. If a venting facility is integrated in the dosing head or is available as a separate unit, open it whilst the dosing pump is running until the liquid escapes, then close it. In the case of effervescent media allow the process fluid to flow continuously (approx. 1 drop per 1...3 strokes)
6. If the ideal setting has been set, then the desired handling capacity is carried out at the adjusting knob (see chapter 8). The first time it is filled use the capacity performance curves (chapter 5). Depending on the installation and the chemicals used this value may change and has to be verified under operation conditions.
7. The manufacturer of the dosing equipment is not responsible for damages due to excessive or low flow rates resulting from faulty dosing pump settings or insufficient and incorrect installation of peripheral accessories and fittings.

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## 10. Shutdown

Before starting any maintenance and before prolonged downtime, drain the chemical from the pump and rinse it out with a neutral medium.



**CAUTION!**

### **CAUTION!**

*Excess chemicals must be disposed of in accordance with local rules and regulations. Note the applicable accident prevention regulations and wear personal protective clothing.*



Goggles



Protective gloves



Protective suit



**CAUTION!**

### **CAUTION!**

*Next the dosing pump must be disconnected from the power supply and secured to prevent unauthorized restarting.*



**CAUTION!**

### **CAUTION!**

*The pressure must be relieved before disconnecting the discharge line from the pump discharge valve so that chemicals will not spray out.*

It is advisable to loosen the discharge and suction check valves in order to drain the dosing head.

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## 11. Maintenance

Dosing pumps are produced according to the highest quality standards and have a long service life. Nevertheless some parts are subject to wear and tear caused by its running (e.g. diaphragm, valve seats, valve balls). To ensure a long operating life, visual inspection is recommended regularly. Periodic maintenance protects the dosing pump and system from unexpected downtime.

### 11.1 Lubricants

The diaphragm-dosing pump is designed to be maintenance friendly. The dosing pump's transmission is greased for life with a molybdenum-disulfide. Nonetheless the grease has to be renewed after approx. 5000 hours of operation when under heavy operational use such as under high environment temperatures and long running times. For this purpose you can use for example: "Molykote BR 2 plus" or „OKS400“.

#### **NOTICE!**

*The dosing pump motor is not to be greased with oil!*



**NOTICE!**

### 11.2 Maintenance of storage

The motor shaft storage are ball holdings caulked and greased for life. The other anti-friction bearings in the transmission as well as the plain bearing of the diaphragm insert are greased with the operational lubricant.

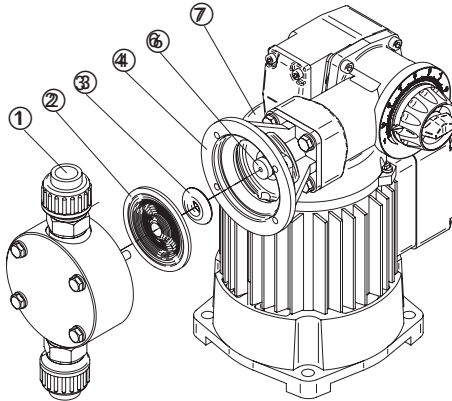
## 11.3 Replacing the diaphragm



**CAUTION!**

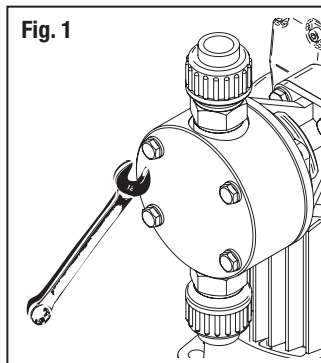
### CAUTION!

*Chemicals may spray out this may lead to caustic or other burns. The dosing pump head must always be depressurized and rinsed with water or another suitable medium before starting any work on the dosing pump.*



### Legend

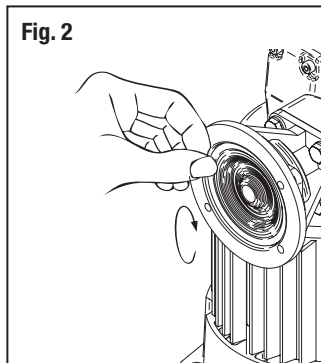
- ① Dosing head
- ② Diaphragm
- ③ Supporting plate  
(with MIDIDOS E 24, 48 and 72)
- ④ Diaphragm chamber
- ⑥ Diaphragm insert
- ⑦ Motor



**Fig. 1**

### Changing the diaphragm

1. Remove the dosing head ① with a suitable tool (Allen key SW 10 or SW13 for E120). (see Fig. 1)
2. The dosing pump is set whilst the motor is running at zero-capacity, whereby the diaphragm ② is secured into its stop position.
3. Turn the pumps off.
4. Diaphragm ②, take its edge and turn it anti-clockwise. So that the supporting plate ③ behind the diaphragm is also moved. (see Fig.2)



**Fig. 2**

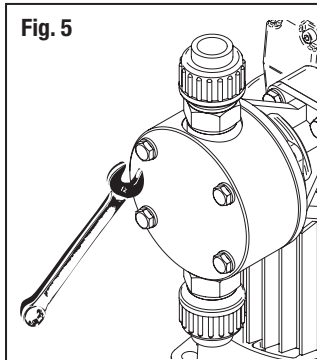
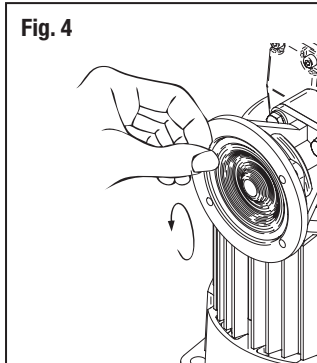
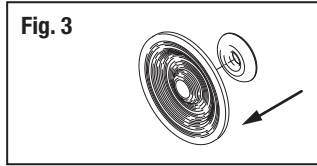


**IMPORTANT!**

### IMPORTANT!

*The supporting plate ③ must be cleaned from chemicals before a new diaphragm is built in, otherwise the diaphragm can be attacked from the rear.*

5. The diaphragm rod has to be greased with Molykote Longterm W2, only in the area of the bulkhead receptacle and along the diaphragm thread.
6. The supporting plate ③ is turned onto the arched side of the diaphragm and pushed onto the thread support of the new diaphragm. (see Fig. 3)
7. Screw the new diaphragm ② onto the support plate ③ clockwise, until it locks firmly onto the diaphragm rod. The smooth side of the supporting plate is then screwed onto the end of the diaphragm rod. (see Fig. 4)
8. Install the dosing head ①. Tighten the screws crossways, e.g. upper left, lower right, upper right, lower left. A tightening torque of 2 Nm is required for the dosing head screws on the MIDIDOS E24...E72 and 6 Nm for the MIDIDOS E120. (see Fig. 5)



**IMPORTANT!**

*The diaphragm will not provide a tight seal if the tightening torque is too low. The dosing head may be damaged if the tightening torque is too high.*

9. After the connection of the dosing pipe, the dosing pump is started up as described in the “start up” section (chapter 9). If the diaphragm is excessively worn, it can lead to the possible causes described in “trouble shooting” (chapter 13).



**IMPORTANT!**

## 11.4 Valves

The dosing pump valves have to be cleaned on a regular basis.



**CAUTION!**

### CAUTION!

*Chemicals may spray out causing caustic as well as other burns. Before working on the pump, release any pressure and wash with water or another suitable medium.*



### NOTICE!

*Unclean valves will reduce the dosing accuracy.*

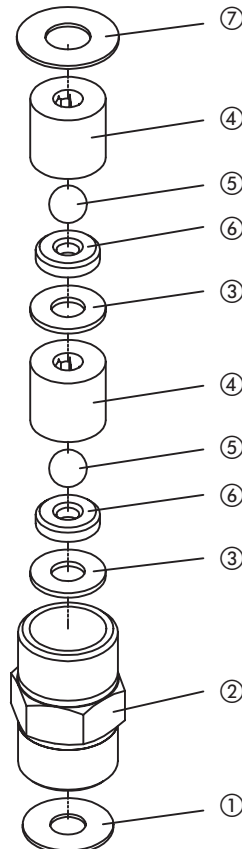
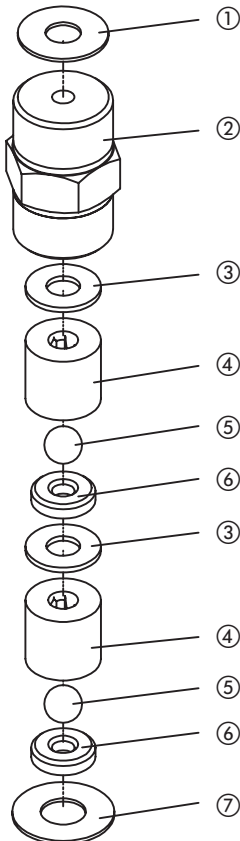
*These valves are supplied without valve stops. The internal pieces could fall apart when unscrewed.*

**NOTICE!**

### Double-ball valve DN6 (MIDIDOS E24...E72)

Pressure valve

suction valve



#### Legend

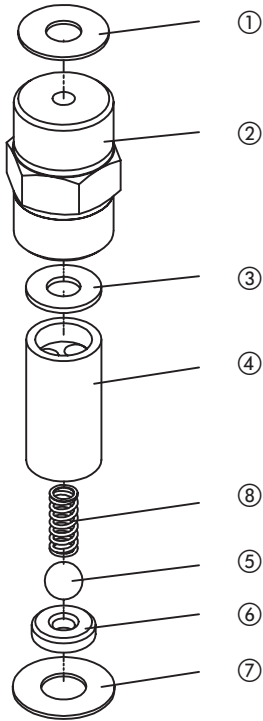
- 1. O-ring
- 2. \*valve casing
- 3. O-ring
- 4. \*ball guide
- 5. \*valve ball
- 6. valve seat\*
- 7. O-ring

\*not included in spare parts.

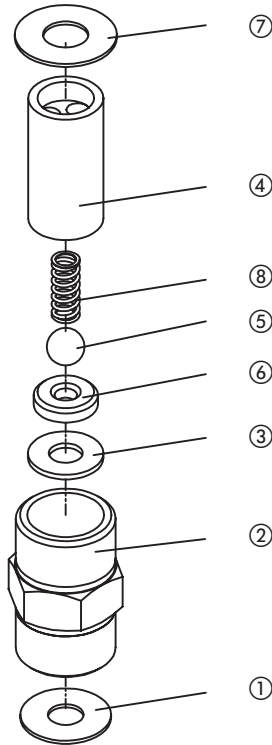


## Spring-loaded valves DN6 (MIDIDOS E24...E72)

Pressure valve



suction valve



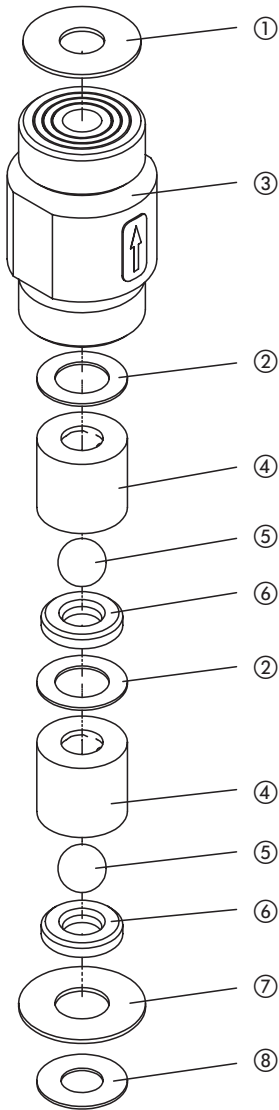
### Legend

- 1. O-ring
- 2. \*valve casing
- 3. O-ring
- 4. \*ball guide
- 5. \*valve ball
- 6. valve seat\*
- 7. O-ring
- 8. spring

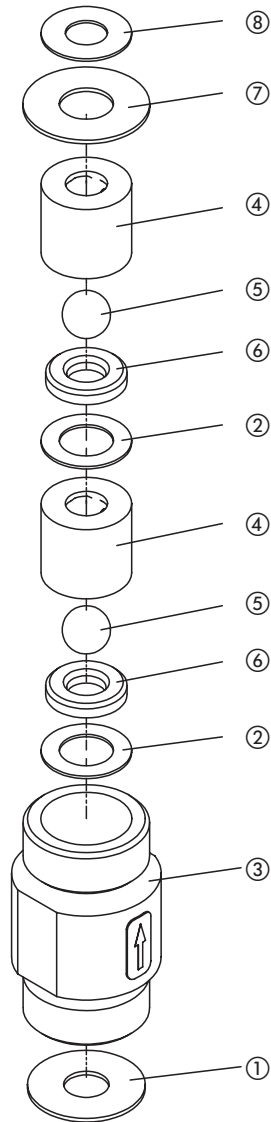
\*not included in spare parts.

## Double ball valve DN 10 (MIDIDOS E120)

Pressure valve



suction valve



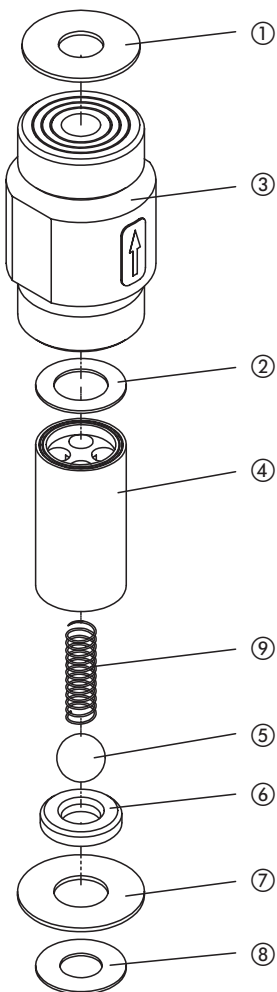
### Legend

- |                |                |                  |                |
|----------------|----------------|------------------|----------------|
| 1. O-ring      | 2. O-ring      | 3. *valve casing | 4. *ball guide |
| 5. *valve ball | 6. valve seat* | 7. O-ring        | 8. spring      |

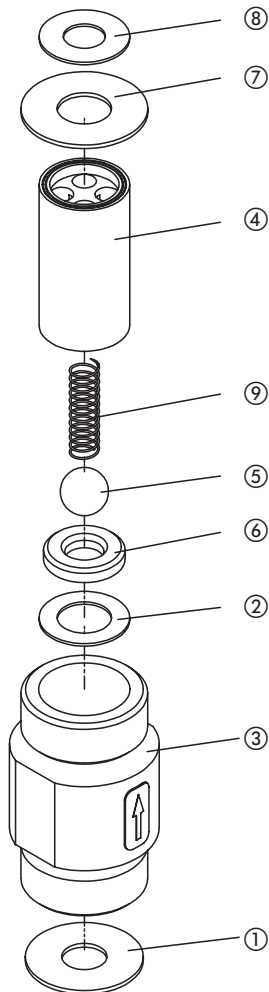
\*not included in spare parts.

## Spring-loaded valves DN 10 (MIDIDOS E120)

Pressure valve



Suction valve



### Legend

1. O-ring

2. O-ring

3. \*valve casing

4. \*ball guide

5. \*valve ball

6. valve seat\*

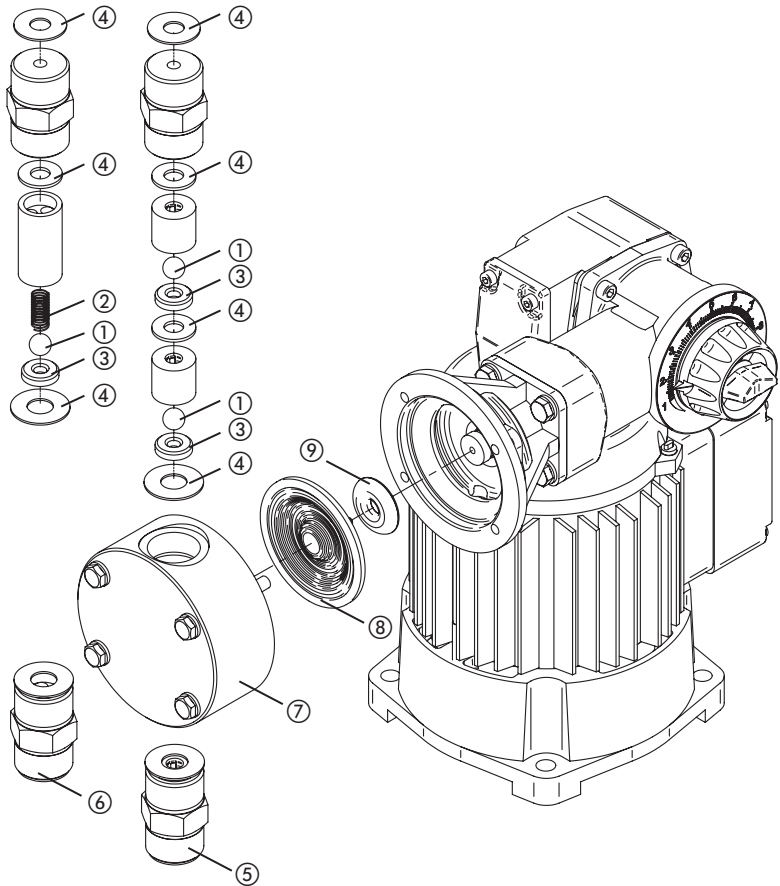
7. O-ring

8. O-ring

9. spring

\*not included in spare parts.

## 12. Spare parts list MIDIDOS E 24...72



⑧ Diaphragm	81465
⑨ Support plate	28977

⑦ Dosing head including screws	
Material	Order no.:
PVC	23909
PP	34661
PVDF	33330
Stainless steel 1.4571	23911

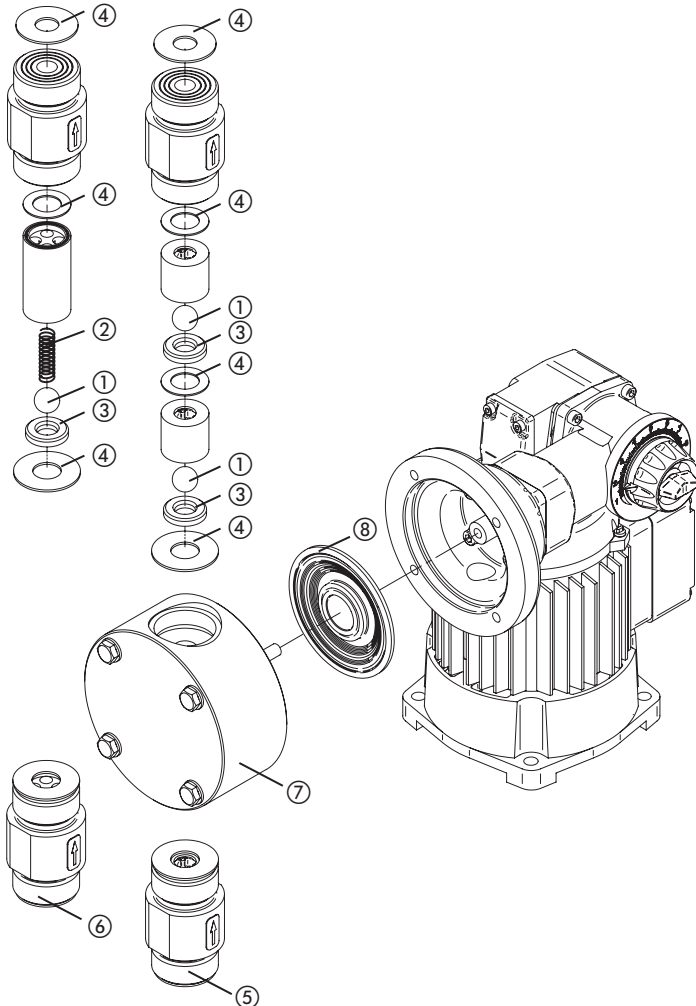
<b>Spare parts for MIDIDOS E 24...72 with double balls/valves DN6</b>		
Consisting of: ① balls ③ valve seats ④ O-ring ⑧ diaphragm	Material	Order no.:
	PVC/Glas/FPM	28275
	PVC/Glas/CSM	28274
	PP/Glas/FPM	35567
	PP/Glas/CSM	35346
	PVDF/PTFE/FPM	35756
Stainless steel / FPM	28277	

<b>⑤ Double ball valve DN6 complete</b>		
Material	Order no.:	
	Suction valve	pressure valve
PVC/Glas/FPM	18185	18186
PVC/Glas/CSM	18187	18188
PP/Glas/FPM	35199	35200
PP/Glas/CSM	34670	34671
PVDF/PTFE/FPM	33337	33338
Stainless steel / FPM	19176	19177

<b>Spare parts for MIDIDOS E 24...72 with spring-loaded valves DN6</b>		
Consisting of: ① balls ② spring ③ valve seats ④ O-ring ⑧ diaphragm	Material	Bestell-Nr.:
	PVC/Glas/FPM	27815
	PVC/Glas/CSM	27814
	PP/Glas/FPM	37496
	PP/Glas/CSM	37497
	PVDF/PTFE/FPM	37495
Stainless steel / FPM	27821	

<b>⑥ Spring-loaded valves DN6 complete</b>		
Material	Order no.:	
	Suction valve	pressure valve
PVC/Glas/FPM	25162	27517
PVC/Glas/CSM	25161	27516
PP/Glas/FPM	35260	35261
PP/Glas/CSM	34810	34811
PVDF/PTFE/FPM	38231	38233
Stainless steel / FPM	23408	23409

## 12. Spare parts list MIDIDOS E 120



⑧ Diaphragm	81466
-------------	-------

⑦ Dosing head inclusive of screws	
Material	Order-no.:
PVC	38306
PP grey	38178
Stainless steel 1.4571	32890
PVDF	32892

**Spare parts for MIDIDOS E 120 with double ball valves DN10**

Consisting of:	Material	Order-no.:
① balls	PVC/Glas/FPM	38196
③ valve seats	PVC/Glas/CSM	38197
④ O-rings	PP/Glas/FPM	28301
⑧ Diaphragm	PP/Glas/CSM	28300
	Stainless steel / FPM	28303
	PVDF/PTFE/FPM	38310

**⑤ Double ball valve DN10 complete**

Material	Order-no. Suction valve	pressure valve
PVC/Glas/FPM	34173	34174
PVC/Glas/CSM	34171	34172
PP/Glas/FPM	26842	27357
PP/Glas/CSM	26841	27356
Stainless steel / FPM	27652	27655
PVDF/PTFE/FPM	34078	34079

**Spare parts for MIDIDOS E 120 with spring-loaded valves DN10**

Consisting of:	Material	Order-no.:
① balls	PVC/Glas/FPM	38198
② spring	PVC/Glas/CSM	38199
③ valve seats	PP/Glas/FPM	28305
④ O-rings	PP/Glas/CSM	28304
⑧ diaphragm	Stainless steel / FPM	28307
	PVDF/PTFE/FPM	28312

**⑥ Spring-loaded valve DN10 complete**

Material	Order-no. Suction valve	pressure valve
PVC/Glas/FPM	34177	34178
PVC/Glas/CSM	34175	34176
PP/Glas/FPM	25707	27354
PP/Glas/CSM	26845	27353
Stainless steel / FPM	25797	27654
PVDF/PTFE/FPM	38308	38309

### 13. Troubleshooting

Problem	Cause	Recommended action
Dosing pump not delivering or output too low.	Valves are leaking or blocked.	Clean check valves and bleed dosing head. See also chapter 9.
	Valves are incorrectly installed.	Assemble valves again Ensure that the valve balls are above the valve seats.
	Suction valve or suction pipe leaking or blocked.	Clean and seal the suction pipe.
	Suction level too high.	- Set the dosing pump to "intake". - Install the pulsation dampener on the suction. - Install priming aid
	Viscosity too high.	- Install spring-loaded valves - Enlarge the pipe cross section - Use a special dosing head. >> Contact Lutz-Jesco
No existing stroke motion.	Dosing pump set on 0 strokes.	Correctly adjust the pump stroke length.
	Loaded spring broken	Replace springs.
	Interrupted supply flow/tension	Turn on line voltage.
Numerous ruptures in the diaphragm	missing support plate. See chapter 11 "maintenance"	Install a new diaphragm with supporting plate. When changing the diaphragm check if the diaphragm rod has been attacked by the medium sprayed through.
	The diaphragm is not properly screwed to the to the diaphragm rod.	Screw the new diaphragm up to the stop limit. The supporting plate must then be affixed inbetween the diaphragm and diaphragm rod..
	Backpressure too high (Measured at the pressure connection of the dosing pump).	Check the system. Clean out blocked injection nozzle. Stop pressure surges due to too long piping from the installation of the pulsation dampener. Check function of safety valves.
	Media sedimentin dosing head	Flush out dosing head.
The dosing pump delivers too much (Dosing pump levers through)	Suction side pressure too high.	Install pressure relief valve or a suction pressure regulator.
	Stroke stop shifted.	Reset the strokes.
Dosing pump powers strength noises.	Defective anti-friction bearings.	Replace the gear-box.
	Gear-box without molybdenum-disulfide.	e.g. renew with Molycote.
Motor throbs but doesn't draw in.	Wrong connection	Check electrical connection
	condensator defective, wrong size or wrongly connected.	Eventual condensator correctly clamped on or replaced.
	Pressure too high.	Check process.

If the problem cannot be solved with the support of the above instructions, return the dosing pump to the factory or contact our Customer Service for further assistance. Repairs will be carried out promptly.



## 14. Declaration of conformity



### EU-Konformitätserklärung

Der Untereinhersteller Lutz-Jesco GmbH, Am Bodelsberge 19, 30900 Westermar, bestätigt, dass die nachfolgend bezeichneten Geräte in der von uns in Vertehr gebrachten Ausführung die Anforderungen der harmonisierten EU-Richtlinien, EU-Sicherheitsstandards und produktspezifischen Standards erfüllen. Bei einer nicht mit uns abgestimmten Änderung der Geräte verliert diese Erklärung ihre Gültigkeit.

### (EN) EU Certificate of Conformity

The undersigned Lutz-Jesco GmbH, Am Bodelsberge 19, 30900 Westermar, hereby certifies that, when leaving our factory, the units indicated below are in accordance with the harmonized EU guidelines, EU standards of safety and product specific standards. This certificate becomes void if the units are modified without our approval.

### (FR) Certificat de conformité aux directives européennes

Le constructeur, soussigné: Lutz-Jesco GmbH, Am Bodelsberge 19, 30900 Westermar, déclare qu'à la sortie de ses usines le matériel neuf désigné ci-dessous était conforme aux prescriptions des directives européennes énoncées ci-après et conforme aux règles de sécurité et autres règles qui lui sont applicables dans le cadre de l'Union européenne. Toute modification possible sur ce produit sans l'accord express de Jesco supprime la validité de ce certificat.

### (ES) Declaración de conformidad de la UE

El que suscribe Lutz-Jesco GmbH, Am Bodelsberge 19, 30900 Westermar, declara que la presente mercancía, objeto de la presente declaración, cumple con todas las normas de la UE, en la que a normas técnicas, de homologación y de seguridad se refiere. En caso de realizar cualquier modificación en la presente mercancía sin nuestra previa autorización, esta declaración pierde su validez.

### (NL) EU- overeenstemmingserverklaring

Ondergetekende Lutz-Jesco GmbH, Am Bodelsberge 19, 30900 Westermar, bevestigt, dat het volgende genoemde apparaat in de door ons in de handel gebrachte uitvoering voldoet aan de eis van, en in overeenstemming is met de EU-richtlijn(en), de EU-veiligheidsstandaard en de voor het product specifieke standaard. Bij een niet met ons afgesproken wijziging aan het apparaat verliest deze verklaring haar geldigheid.

### (HU) EG (EU)- Egyeztetési nyilatkozat

A Lutz-Jesco GmbH, Am Bodelsberge 19, 30900 Westermar ezáltal kijelenti, hogy a csatlakozó kiegészítő berendezés és szerelvények, valamint kiegészítő alkatrészei megfelelnek a vonatkozó alapvető biztonsági technikai és egyeztetési követelményeknek és az alábbi felsorolt EG-irányelveknek minden szempontból megfelel. A termékek egyeztetésként nem minősülnek módosítások időveltesítésre jogos nyilatkozat érvényesítés nélkül.

### (PT) Declaração de conformidade da UE

Os abaixo mencionados Lutz-Jesco GmbH, Am Bodelsberge 19, 30900 Westermar, por este modo certificam que ao sair da fábrica o aparelho abaixo mencionado está de acordo com as diretrizes harmonizadas da UE, padrões de segurança e de produtos específicos. Este certificado ficará nulo se a unidade for modificada sem a nossa aprovação.

Bezeichnung des Gerätes:	Membran-Desierpumpe
Description of the unit:	Diaphragm Metering Pump
Désignation du matériel:	Pompes doseuses à membrane mécanique
Designación de la mercancía:	Bombas dosificadoras de membrana
Omschrijving van het apparaat:	Membranaardoseerpomp
A termék megnevezése:	Membrán adagolószivattyú(k)
Designação do aparelho:	

### Typ / Type / Tipo / Tipejelölés:

MIDIDOS A	EU-Richtlinie / EU directives/ Directives européennes / Normativa UE / EU-richtlijn(en) / Vorratige EG-Verordnungen / Directivas da UE	Harmonizierde Normen / harmonized standards / Normas harmonizadas / Estándares acordados / Tegegyeztet normák / Hatólyos normák / Normas harmonizadas
MIDIDOS E	2006/55/EG	EN ISO 12100-1 : 2003
MIDIDOS M	2006/42/EG	EN ISO 12100-2 : 2003
MIDIDOS ML		EN 808 : 1998
MIDIDOS MR		
MIDIDOS GMR		
MIDIDOS TM		

i.V. Dipl.-Ing. Klaus Albert  
Lutz-Jesco, Westermar, 21.12.2008

Technische Leitung / Technical Department Manager / Direction technique /  
Dirección Técnica / Hoofd technische dienst / Műszaki irányvezető / Director Técnico

CE-Membran-Desierpumpe-104

---

## 15. Declaration of harmlessness

Please copy and send in with your apparatus!

Display anon the outer packaging.

### Declaration of harmlessness

(please fill out a separate form for each appliance – e.g. pump or accessory)

We forward the following dosing equipment for repairs:

Type (dosing pump or accessory): \_\_\_\_\_

Part-no.: \_\_\_\_\_

Order-no.: \_\_\_\_\_

Delivery date: \_\_\_\_\_

Reason for repair: \_\_\_\_\_

\_\_\_\_\_

Medium used: \_\_\_\_\_ Properties: irritant: yes/no  
corrosive: yes/no

We hereby certify that the machine has been thoroughly cleaned inside and out before its dispatch and that it is free from health risk chemical, biological and radioactive materials as well as having been drained of oil. \*)

*If the manufacturer find it necessary to carry out further cleaning work, we accept the charge will be made to us.*

We certify that the aforementioned information is correct and complete and that the unit is dispatched in compliance with legal requirements.

Company / address:

Phone:

Fax:

E-Mail:

Customer-number:

Contact person:

\_\_\_\_\_

Date

\_\_\_\_\_

Signature / stamp

\*) If not applicable please cross out!

---

## 16. Warranty

Please copy and send with MIDIDOS E!

If the dosing pump breaks down within the period of warranty, please return the MIDIDOS E in a cleaned condition with the complete warranty application, filled out.

---

Sender

Company:..... Phone:..... Date:.....

Address:.....

Contact person: .....

Lutz-Jesco order-no.: ..... Delivery date:.....

MIDIDOS type: ..... Serial no.: .....

Nominal capacity/nominal pressure: .....

Description of fault: .....

.....

.....

---

Type of fault:

1. Mechanical fault

- premature wear
- wear parts
- breakage/other damage
- damage in transit

3. Leaks

- connections
- dosing head

2. Electrical fault

- loose connections such as plug connector or cable
- operating elements (e.g.. switches/buttons)
- electronics - corrosion

4. No or inadequate suction

- defective diaphragm
  - other
- 

Service conditions of the dosing pump

Point of use / system designation:.....

Accessories used (Suction line, PDS, etc.):.....

Commissioning (date):.....

Duty period (approx. operating hours):.....

Please describe the specifics of the installation and provide a simple diagram with details of the material, diameter, length and levels.



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Quality Management  
ISO 9001:2008  
Environmental Management  
ISO 14001:2004  
Voluntary participation in regular  
monitoring

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