

Original Operating Instructions
Damping device

Series EE 408 / Type 01



If you have any questions about the machine, please contact Customer Service, stating the machine type, series and type number, and if you have any questions about the Operating Instructions, please get in touch with the responsible contact person at:

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1 Introduction

1.1 Notes on these Operating Instructions

- The Operating Instructions describe the technical status of the machine at the time of delivery.
- The Operating Instructions are part of the machine. The Operating Instructions and safety instructions must always be available in full and in a legible condition at the machine's place of use.
- The operator must supplement safety regulations with special instructions adapted to the local operating conditions.
- All persons who work on the machine must read these Operating Instructions so that they are familiar with the correct handling procedures and the safe operation of the machine.
- Subsequent modifications to the machine are not taken into account in these Operating Instructions.
- The Operating Instructions must be kept for future use and passed on to new owners.

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1.1.1 Revision history

Version	Date	Name	Description
1.0	12.12.2024	Servotech GmbH	New document
-	-	-	-

1.2 Labelling of the text types

Text

Body text

Enumeration

- First level enumeration
 - Second level enumeration

Instruction for action

- Step of an instruction for action without a time sequence, or in the case of individual actions
- 1. Step of an instruction for action with a defined sequence
- 2. Step of an instruction for action with a defined sequence
 - Interim result of an instruction for action or an unexpected device reaction
- 3. Step of an instruction for action with a defined sequence
 - Final result of an instruction for action

Reference

- 🔗 Cross-reference

Key

Item	Description
1	
2	
3	
4	
5	
6	

Note

Note!



Important information and tips for using the machine.



1.3 Declaration of conformity

The machine complies with the basic requirements of the applicable European directives. Conformity has been demonstrated. A copy of the declaration of conformity can be found in the annex to these Operating Instructions.

2 Safety

2.1 Safety instructions

2.1.1 Structure of safety instructions

 Signal word of the danger classification	
	Type and source of danger Consequence of danger ➤ Remedy for danger


2.1.2 Danger classification

The dangers that can occur on the machine are categorised into the following classes:

- Danger
- Warning
- Caution
- Attention



Danger

This safety instruction indicates a danger with a high risk. Failure to observe the safety regulations can result in death or serious injury.

 Danger	
	Type and source of danger Consequence of danger ➤ Remedy for danger



Warning

This safety instruction indicates a danger with medium risk. Failure to observe the safety regulations may result in death or serious injury.

 Warning	
	Type and source of danger Consequence of danger ➤ Remedy for danger



Caution

This safety instruction indicates a danger with a low risk. Failure to observe the safety regulations may result in mild or slight physical injury.

 Caution	
	Type and source of danger Consequence of danger ➤ Remedy for danger

Attention

This safety instruction indicates a danger with a low risk. Failure to observe the safety regulations may result in material or property damage.

 Attention	
	Type and source of danger Consequence of danger ➤ Remedy for danger

2.1.3 Warning signs








Symbol	Meaning	Symbol	Meaning
	General warning sign		Warning of obstacles on the ground
	Biohazard warning		Low temperature / frost warning
	Warning of suspended load		Warning of hot surface
	Warning of hand injuries	-	-

Table 1 Warning signs

2.1.4 Prohibition sign

No prohibition signs are attached to the damping device.

2.2 Correct use

The damping device is used to dampen, by means of mechanical decoupling, force shocks and vibrations that can occur between components or functional groups in interconnected systems.

Its intended use includes compliance with the operating conditions specified by the manufacturer and compliance with the prescribed maintenance work in the form of a visual inspection. This also includes the use of suitable fasteners and installation methods.

The damping device must be submerged by at least 5 cm and may only be operated when submerged.

Use the machine only as intended.

Any other use is considered improper use. The manufacturer is not liable for any resulting damage here; the risk is borne by the operator.



2.3 Reasonably foreseeable misuse




- Using the machine in areas where a free fall of more than 1.25 metres within liquid media is to be absorbed or dampened.
- Using the machine in areas where a free fall of more than 0.25 metres outside liquid media is to be absorbed or dampened.
- Operating the machine in strongly acidic media, as a reduced service life is then to be expected.
- Using the machine in areas for personal protection.
- Operating the machine with parameters for which it is not designed.
- Operating the machine if the safety devices are deactivated, have been tampered with or are defective.
- Operating the machine while untrained persons are in the danger zone.
- Operating the machine in a potentially explosive atmosphere.




Any other or additional use, e.g. for higher loads, for operating conditions that have not been agreed, or for structural modifications, shall be deemed improper use.




2.4 Residual risks


The machine corresponds to the state of the art at the time it is placed on the market. However, there is still a residual risk for people and machinery.


 Danger	
	<p>Danger to life due to lifted loads</p> <p>Lifted loads can fall or trap people. When lifting connected loads, parts can topple over, shift or fall down.</p> <ul style="list-style-type: none"> ➤ Use suitable lifting gear and fasteners. ➤ Do not walk under or around lifted loads! ➤ Remove all persons from the danger zone of the load.


 Warning	
 	<p>Risk of crushing and cutting during load changes</p> <p>Serious injuries to fingers at crushing points and interfaces that occur during load changes in the area of the pressure plate and between spacers.</p> <ul style="list-style-type: none"> ➤ Do not reach into the area of the spacers or the pressure plate during load changes.

 Warning	
 	<p>Risk of infection</p> <p>Risk of infection due to direct contact with surrounding media in the application environment (e.g. biogas plant substrates) and the bacterial cultures they contain.</p> <ul style="list-style-type: none"> ➤ Avoid contact with adhesive media. ➤ Clean the damping device thoroughly before working on it and remove any residual media. ➤ Wear the prescribed personal protective equipment when working on the damping device and clean or dispose of this equipment properly after use.

 Caution	
 	<p>Sharp-edged objects and surfaces</p> <p>People can cut themselves through direct contact with trapped sharp-edged objects and abraded metal parts.</p> <ul style="list-style-type: none"> ➤ Use hand protection. ➤ Carefully remove trapped objects before working on the damping device.

⚠ Caution	
	<p>Hot surfaces</p> <p>Surfaces of the damping device can store and release residual heat from hot operating environments.</p> <ul style="list-style-type: none">➤ Allow the damping device to cool down before working on it.➤ Only touch with suitable protective clothing / hand protection.

⚠ Caution	
	<p>Cold surfaces</p> <p>The surfaces of the damping device can store and release residual coldness from very cold operating environments.</p> <ul style="list-style-type: none">➤ Allow the damping device to warm up before working on it.➤ Do not touch very cold surfaces without suitable protective clothing.

⚠ Caution	
	<p>Tripping hazard</p> <p>People can trip over the damping device lying on the floor.</p> <ul style="list-style-type: none">➤ Do not place the damping device unsecured on the floor.➤ During transport, store the damping device safely and in suitable transport packaging.

2.5 Operator's obligations

- The operator is obliged to operate the machine only when it is in perfect condition. Machines that are not in perfect condition can lead to personal injury and machine damage.

2.5.1 Determine and instruct responsible persons

- Only use personnel who have received instruction in the relevant safety technology.
- Clearly define staff responsibilities for operation, set-up and maintenance.
- Regularly check that personnel are working in a safety-aware and hazard-conscious manner in accordance with the Operating Instructions.

2.5.2 Information obligation

- The machine operator must make these Operating Instructions available at all times to all persons who work with the machine.
- All persons must have read and understood the Operating Instructions before using the machine.
- Have machine personnel confirm that they have read the Operating Instructions.

2.6 Requirements for target groups

The contents of these Operating Instructions are intended for different target groups. The level of knowledge that the respective target group must have is defined here.

All target groups must have read these Operating Instructions and understood the contents.

Operating personnel must:

- be instructed in the use of the machine.
- know the country-specific accident prevention regulations.

Maintenance personnel must:

- know the maintenance points on the machine.
- have received appropriate professional training.

Servicing personnel must:

- have received a sound education and professional training.
- have received instruction from the operator regarding the service activities for the machine.
- be trained in the rules of conduct in the event of a malfunction.

2.7 Personal protective equipment







Symbol	Personal protective equipment	Action
	Use foot protection	Always use foot protection.
	Use hand protection	Use hand protection during assembly, commissioning, cleaning and maintenance, troubleshooting and disassembly.
	Use eye protection	Use eye protection during assembly, commissioning, cleaning and maintenance, troubleshooting and disassembly.
	Use head protection	Always use head protection.

Table 2 Personal protective equipment

2.8 Notes on operation

 Danger	
	<p>Danger to life in the event of failure to observe safety instructions</p> <p>Danger to your own life and that of third parties.</p> <p>➤ Observe all safety instructions.</p>

2.8.1 Environmental protection regulations

- Observe the applicable environmental protection regulations for all work on and with the machine.

2.8.2 When working

Note!






In addition to the Operating Instructions and the binding accident prevention regulations applicable in the country of use and at the place of use, observe the recognised technical rules for safe and professional work.

- Only operate the machine when it is in a safe and functional condition.
 - Never shut down or remove safety devices.
 - Refrain from any working method that reduces safety.
- Do not make any changes or modifications to the machine. This applies both to the installation and adjustment of safety devices and to welding on load-bearing parts.
- Only use tools and other work equipment that are necessary for the intended work process and are in perfect, functional condition.
- Report any faults or damage to the machine to the responsible supervisor immediately. Interrupt operation of the machine until the fault/damage has been rectified.
- Wear protective work clothing. Remove rings, scarves, etc. and fasten open jackets. Use eye protection, foot protection, head protection, hand protection, etc. for certain work.

3 Transport / Installation / Commissioning

3.1 Transport

 Danger	
 	<p>Danger to life due to loads in motion</p> <p>Loads in motion can topple over, fall or trap people. When lifting the transport units, parts can topple over, shift or fall down.</p> <ul style="list-style-type: none">➤ Use suitable lifting gear and fasteners.➤ Do not walk under or around loads in motion!➤ Remove all persons from the danger zone of the load.➤ Wear safety shoes.➤ Wear a helmet.

3.1.1 Unpacking

☞ For disposal of the packaging material, follow the instructions in Section 8.1 Disposal.

3.2 Interim storage

➤ Store the damping device in a dry place and protect it from direct sunlight.

3.3 Commissioning

- General visual inspection for:
 - overall condition of the damping device
 - damage and deformations
 - wear and signs of ageing
 - functionality

3.4 Installation

1. Bring the load to be applied into a safe position and secure it if necessary.
2. Attach the damping device to the load using the lifting eye provided and suitable lifting gear, e.g. shackles.
3. Fasten the damping device to the load-bearing device using the free lifting eyes and suitable lifting gear.

Note!



The damping device must be installed between the load and the load-bearing side in a relaxed system in which no tensile forces are yet acting on the damping device.

4. Carefully build up tensile force on the damping device and ensure that the longitudinal axis of the damping device is aligned along the direction of tension.
 5. Apply a low active load and ensure that the damping device is functioning correctly.
 6. If necessary, gradually dismantle the securing of the load to be attached.
- The damping device is installed, ready for operation and can be loaded with the intended operating load.

3.5 Storage

In order to keep an unused machine functional over a longer period of time, a number of points must be observed:

- Protect from direct sunlight.
- Store the machine on level ground and secure it against tipping over, rolling away and unauthorised use.
- Do not expose the machine to extreme cold or heat.

3.6 Recommissioning

The following work must be carried out before recommissioning after a longer storage period:

- Check the machine for damage and correct function.

4 Technical Data

	Amount / Quality / Value
Service life	Up to 3 years
Temperature of use	-20 °C – 80 °C
Minimum active load	1000 N (spring preload)
Maximum operating load	5000 N (incl. dynamic additional loads)
Dynamic additional operating load	-1500 N to +1500N
Spring travel at max. operating load	35 mm
Maximum spring travel	58 mm
Breaking load	38,000 N

Table 3 Technical data

Note!



If the damping device experiences a breaking load of 38 kN, it must be replaced.

Dimensions

	Value
Size (length x Ø)	Approx. 432 mm x 95 mm
Weight	Approx. 3 kg
Lifting gear Ø	> 12 mm

Table 4 Technical data – dimensions

4.1 Type plate and load capacity plate



Figure 1 Type plate and load capacity plate, front and rear

Note!



The Operating Instructions can be accessed online via the QR code. Alternatively via the following link: www.ptm-mixer.com/manuals-damping-device/.

5 Product Description

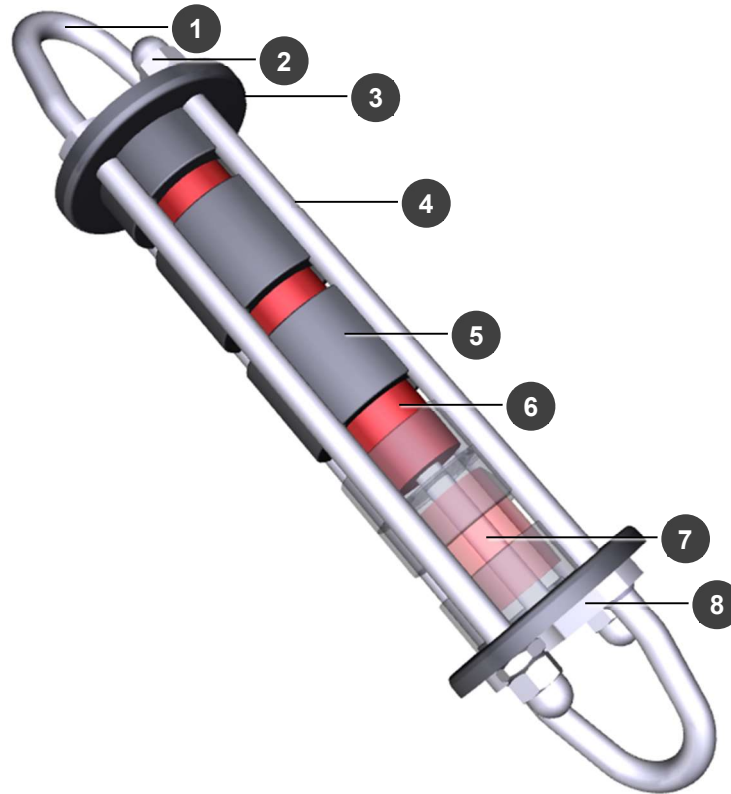


Figure 2 Overview of damping device

Item	Designation	Item	Designation
1	Lifting eye	2	Hexagon nut
3	Pressure plate	4	Pull tab
5	Spacer	6	Elastomer spring (damping element)
7	Guide rod for elastomer spring	8	Spacer

Use

The damping device dampens or absorbs force shocks and resulting vibrations in load-bearing systems. As a result, the damping device decouples the actual load from the load-bearing device and reduces the mechanical stress within the system.

Consequently, the damping device reduces the potential for the mechanical failure of other components within the load-bearing system and prevents dangerous breakdowns due to mechanical failure.

For this purpose, the damping device is installed between the load and the load-bearing device. For installation, lifting eyes (1) are provided on the top and bottom for attaching suitable lifting gear.

The damping device works both in systems in which the load to be decoupled is vertically aligned and in systems with a horizontally aligned load. For correct functioning, the damping

5 Product Description






device must always be aligned in the direction of action of the load. The active loads listed in Section 4 Technical Data must be observed during use. In horizontal systems in particular, the damping device always requires a sufficient active load in order to independently align itself along the direction of action if necessary.

The lifting eyes (1) are each connected to the opposite pressure plate (3) via two pull tabs (4) in order to support applied loads. If a load is applied to the damping device, the two pressure plates are pulled towards each other. This transfers the applied forces to the spacers (5) and damping elements (6) located in between.

Due to their nature, the damping elements made of special elastomer springs dampen vibrations and shocks from the applied active load.

6 Servicing

 Warning	
 	<p>Risk of infection</p> <p>Risk of infection due to direct contact with surrounding media in the application environment (e.g. biogas plant substrates) and the bacterial cultures they contain.</p> <ul style="list-style-type: none">➤ Avoid contact with adhesive media.➤ Clean the damping device thoroughly before working on it and remove any residual media.➤ Wear the prescribed personal protective equipment when working on the damping device and clean or dispose of this equipment properly after use.

6.1 Personnel qualifications

Only persons instructed in safety technology and authorised by the operator of the machine are permitted to service the machine.


6.2 Activities before maintenance work / visual inspection

1. Remove or additionally secure the active load.
2. Clean the damping device and remove any unwanted contamination.

6.3 Maintenance work / visual inspection

1. Check the condition of the individual parts.
2. Check the function of the lifting gear.

6.4 Cleaning

Attention	
	<p>Material damage due to improper cleaning work</p> <p>Incorrect cleaning agents or incorrect cleaning methods can cause damage to the machine.</p>

6.4.1 Notes on cleaning agents

- Spray the damping device with water.
- Do not use aggressive cleaning agents.

6.5 Maintenance plan






Item	Designation	Qualification	Interval			
			Month	Half-year	Year	3 years
1	Complete damping device	M	-	-	○ 	
2	Damping elements	M	-	-	 (■)	
3	Force/load-bearing components	M	-	 (■)	-	
4	Replacement of the complete damping device	M				■
Qualification:		Servicing personnel	Maintenance personnel		Operating personnel	
		S	M		O	
Maintenance activity:		 Check	○ Clean		□ Lubricate	
		 Set	■ Replace		() As needed	

Table 5 Maintenance plan

When checking the damping device and its components, the following main points must be checked:

- overall condition of the damping device
- damage and deformations
- wear and signs of ageing
- functionality

Note!



The cap nuts of the damping device are designed to be maintenance-free and should only be serviced or machined with tools in justified exceptional situations.

Note!



No individual spare and replacement parts are offered for the damping device. In the event of replacement, the entire damping device should always be replaced for safety reasons.



7 Fault Correction

If you have any questions about fault correction, please contact the Customer Service team, specifying the type or product name, at:

PTM GmbH

Zörbiger Strasse 7




06188 Landsberg

Germany

Phone: +49 34602 | 406960

info@ptm-mixer.com

8 Dismantling / Disassembly / Disposal

 Warning	
 	<p>Risk of infection</p> <p>Risk of infection due to direct contact with surrounding media in the application environment (e.g. biogas plant substrates) and the bacterial cultures they contain.</p> <ul style="list-style-type: none">➤ Avoid contact with adhesive media.➤ Clean the damping device thoroughly before working on it and remove any residual media.➤ Wear the prescribed personal protective equipment when working on the damping device and clean or dispose of this equipment properly after use.

- Secure moving and unsecured parts.
- Pack the machine appropriately.

8.1 Disposal

- All statutory waste disposal regulations applicable at the installation site must be complied with.

9 Annex

9.1 List of illustrations

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9.3 Warranty

9.3.1 Warranty claim

PTM GmbH provides the statutory warranty for its products of the machine type damping device, series EE408, type 01.

9.3.2 Liability

As the manufacturer of the machine, PTM GmbH is not responsible for any damage that may occur if:

- the damping device EE 408 machine is handled incorrectly.
- repairs/maintenance or installation are carried out by unauthorised persons.
- the damping device EE 408 is not used in accordance with these Operating Instructions.
- parts of the damping device EE 408 have been dismantled.
- spare parts and operating materials are used that have not been approved by the manufacturer.

9.4 Declaration of conformity

EU Declaration of Conformity in accordance with EU Directive 2006/42/EC

Manufacturer:

Name: PTM GmbH
Address: Zörbiger Strasse 7
06188 Landsberg
Germany

The manufacturer hereby declares that the following product complies with the relevant regulations, directives, standards and the state of the art at the time of construction, as well as with the technical and economic requirements. The standards harmonised at Community level have been taken into account for the design and construction of the product and applied where applicable.

Product:

Machine designation: Damping device EE 408 Type 01
Year built: 2025

Applicable Directive:

2006/42/EC Machinery Directive

The following harmonised standards are applied, among others:

DIN EN ISO 12100	Safety of machinery - General principles for design, risk assessment and risk reduction
DIN EN 13155	Cranes - Safety - Non-fixed load lifting attachments
DIN EN ISO 20607	Safety of machinery - Operating instructions - General principles for design

Name and address of the authorised representative for the technical documentation:

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Rostalski, Kay

Address

Surname; first name (authorised representative)

Landsberg, 12.12.2024

Place, date

Authorised representative (signature)





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