



NetterVibration



Operating instructions for
electric impactors
of the series ePKL

Jan. 2026
No. 2210E
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These operating instructions apply to: **ePKL 740**



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Scope of delivery

Please refer to the delivery note for the scope of delivery.
Check the packaging for possible transport damage. In the event of damage to the packaging, check the contents for completeness and possible damage. Inform the carrier in the case of damage.

Designation

The electric impactors of the series ePKL are hereafter referred to as "ePKL".

Version of document

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1 General information


Use and storage	<p>Before installing the ePKL read these instructions carefully. It is the basis for any action when dealing with the ePKL, and may be used for training purposes. The instructions should be subsequently stored at the operation site.</p>
Target group	<p>The target group for these instructions is technical staff, who have basic knowledge in electrics and mechanics.</p> <p>Only complying technical staff may work on the ePKL.</p> <p>The ePKL may only be installed, put into operation, maintained, troubleshot and disassembled by persons authorised by the operator.</p>
Copyright	<p>This documentation is protected by copyright.</p> <p>NetterVibration reserves all rights such as translations, reprinting and reproduction of the instructions, as well as parts thereof.</p>
Limitation of liability	<p>All technical information, data and instructions for installation, operation and maintenance in these instructions are based on the latest information available at the time of printing and take our past experience to the best of our knowledge into account.</p> <p>No claims can be derived from the information, illustrations and descriptions in these operating instructions.</p> <p>The manufacturer does not assume liability for damages resulting from:</p> <ul style="list-style-type: none">• failure to observe the instructions,• improper use,• unauthorised repairs,• technical modifications,• use of non-permissible spare parts. <p>Translations are made to the best of our knowledge.</p> <p>NetterVibration does not assume liability for translation errors, even if the translation was made by us or on our behalf. Only the original German text remains binding.</p>
Directives / standards observed	<p>The electric impactors of the series ePKL are build according to the following directives:</p> <ul style="list-style-type: none">• 2014/30/EU - electromagnetic compatibility directive• S.I. 2016:1091 - Electromagnetic Compatibility Regulations 2016 (UK)• 2006/42/EG - EC Machinery Directive 2006/42/EG• S.I. 2008:1597 - Supply of Machinery (Safety) Regulations 2008 (UK) <p>The main standards observed are indicated in the CE declaration of conformity.</p> <p>The rules and regulations of the local associations for electrical engineering apply (e. g. IEC, VDE, OEVE, SEV, etc.).</p>

Instruction and warning symbols


The following instruction and warning symbols are used in these instructions:

Personal injuries


⚠ DANGER

	<p>indicates an immediate danger. Disregard of this notice will result in death or severe personal injuries.</p>
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⚠ WARNING

	<p>indicates a potential danger. Disregard of this notice can result in death or severe personal injuries.</p>
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⚠ CAUTION

	<p>indicates a potentially dangerous situation. Disregard of this notice can result in minor or moderate personal injuries.</p>
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Material damages


NOTICE

<p>indicates potential material damage. Disregard of this notice can result in material damage.</p>

Notes

IMPORTANT

<p>indicates actions, methods or notes that are not relative to safety, e.g. useful information and tips.</p>

	<p>Environmentally safe disposal indicates the obligation of environmentally safe disposal.</p>
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2 Safety

Intended use

General areas of application of the ePKL are for knocking off adhesive bulk materials from container walls (e.g. silos, hoppers, filter outlets, pipelines and reactors) and for emptying residues from weighing containers. The ePKL also prevent bridging and rat-holing, so that the material can continuously flow.

The ePKL may only be used within the permissible operating conditions. The ePKL can also be used outdoors as well as in dusty or dump environments, however not in water or any other liquids.

Any other use is considered improper.

Qualification of qualified personnel

Installation, commissioning, maintenance and troubleshooting of the ePKL may only be performed by authorised qualified personnel, who have basic knowledge in electrics and mechanics.

All handling of the ePKL is the responsibility of the operator.

High voltage

DANGER

Risk of electric shock due to high voltage

Live parts can cause severe injuries or even death.

- Installation, connection, commissioning, maintenance and disassembly of the ePKL may only be carried out by authorized qualified personnel.
- The housing of the ePKL must not be opened when live.
- Installation, connection, maintenance and disassembly may only be carried out in a voltage-free state.
- When handling the ePKL the provisions and regulations of the local electrical engineering associations (e.g. VDE) and the accident prevention regulations must be observed.
- Perform all work only with insulated tools suitable for the application.

Safety rules
 **DANGER**
Electric shock

An electric shock will result in serious injury or even death. The ePKL must be free of voltage during assembly, start-up, maintenance and troubleshooting.

Observe the following five safety rules:

1. Disconnect the ePKL from the mains supply.
2. Secure the ePKL against re-activation.
3. Establish that the ePKL has no voltage.
4. Earth and short-circuit the power supply of the ePKL.
5. Cover adjacent live parts or fence them off.

Falling parts
 **WARNING**
Falling parts

The ePKL, construction parts as well as fastening screws can come loose due to vibration. Falling parts can lead to severe personal injuries.

- Use only Netter fastening kits (NBS) to fasten the ePKL.
- Check the fastening screws after one hour of operation and thereafter at regular intervals (generally monthly).
- Retighten the fastening screws, if necessary.
- A safety device with a safety cable is mandatory for critical mounting situations.

Heavy parts
 **WARNING**
Risk of injury while handling heavy parts

Risk of serious injury due to weight during transport and installation of the ePKL.

- Observe the weight information in chap. Technical data, starting on page 9.
- Only qualified personnel may transport and install the ePKL.
- Use suitable load handling devices and slinging equipment.
- Wear suitable personal protective equipment.

Moving parts

⚠ WARNING

Moving parts

When opening housing screws, there is a risk that housing parts could be thrown off due to the spring tension and cause serious injuries.

- Never open the housing screws of the ePKL.

Sound level

⚠ WARNING



Sound level

Near the ePKL or near constructions connected to the ePKL the sound pressure level may exceed 80 dB(A). Human hearing can be permanently damaged by high noise levels.

- Use hearing protection during work in a noisy area if 80 dB(A) is exceeded.
- Mount the ePKL with an EE kit.

Hot surfaces

⚠ CAUTION

Risk of burns due to hot surfaces

The electric motor of the ePKL can strongly heat up during operation. Direct contact may cause burns.

- Do not touch the ePKL during operation or shortly after being switched off.
- Only operate the ePKL within the permissible ambient temperature, see page 9.

Moving parts

⚠ CAUTION

Risk of injury when changing the impact plate

Improper procedure when changing the impact plate can lead to injuries from moving parts.

- Follow the instructions for changing the impact plate exactly, see page 14.
- Use a suitable base (e.g. foam board) for dismantling the impact plate.
- Hold the ePKL only by the housing. Do not touch the underside of the ePKL when disassembling the impact plate.



Moving parts

NOTICE

Damage to the ePKL due to moving parts

Multiple impacts of the ePKL when not mounted can lead to damage to components.

- Only operate the ePKL when it is securely mounted.
- Only use the Netter fastening kits NBS to fasten the ePKL.

3 Technical data

Permissible operating conditions

Impactor: ePKL	
Series	ePKL 740
Ambient temperature	-20°C to +40°C
Humidity	The relative humidity should not exceed 80% (without condensation).
Supply voltage	24 V/DC via M12 A coded socket +24 V = pin 4 GND = pin 3 Maximum permissible voltage: 26 V/DC Minimum permissible voltage: 18 V/DC
Nominal current	2.5 A
Nominal power	60 W
Max. Installation height above sea level (without power limitation)	1500 m
Degree of protection	IP 65
Cable specifications	Connection cable + plug M12 A-coded, female (not included in scope of delivery)
Duty cycle	100%
Max. number of strokes per minute	5

Service life

The technical performance data changes over the service life (wear and contamination).

Sound level

The sound pressure level of the ePKL may exceed 80 dB(A) (single sound incident). Depending on the impact sequence the continuous sound level is below this value.

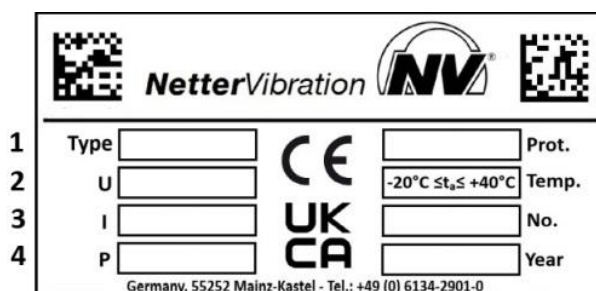
The sound emitted by the ePKL can be dampened by coverings. The sound pressure level is reduced only with simultaneous insulation of the applied sheets.

Parameters

Type	Piston weight [kg]	Impact force * [kg]	Overall weight [kg]	Suitable for wall thickness of [mm]
ePKL 740	0.74	2.1	3.57	2 - 4

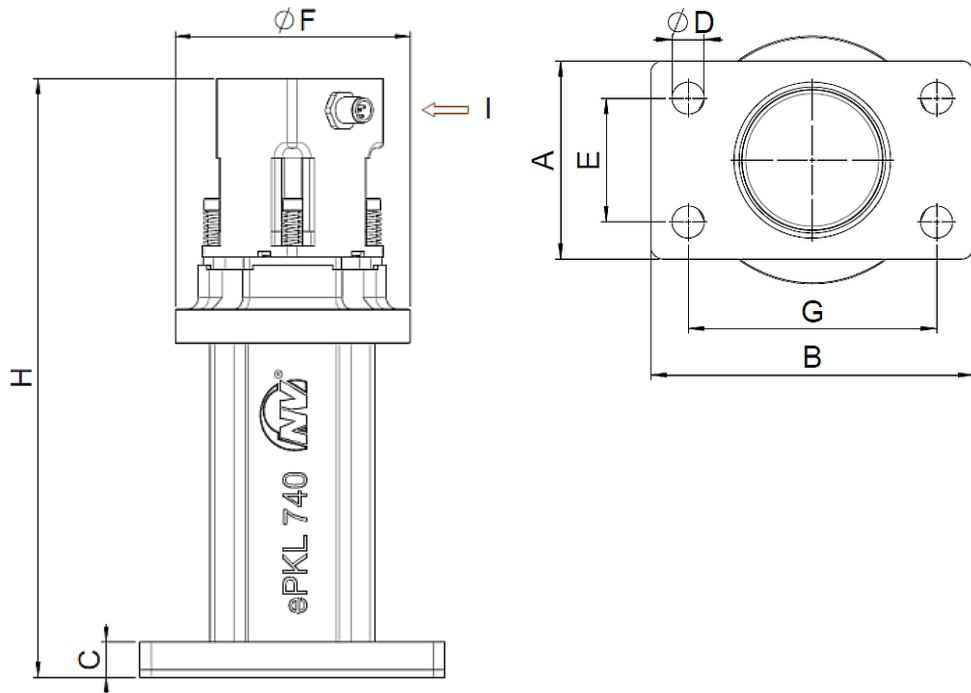
* The force of impact corresponds to the impact of the given weight falling from a height of 1 m.

Type plate



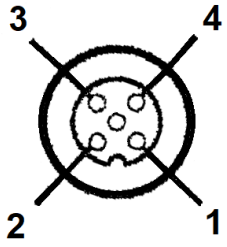
- 1 Type designation
- 2 Nominal voltage
- 3 Current
- 4 Power
- 5 Degree of protection
- 6 Permissible ambient temperature
- 7 Serial number
- 8 Year of manufacture

**Dimensions
ePKL 740**



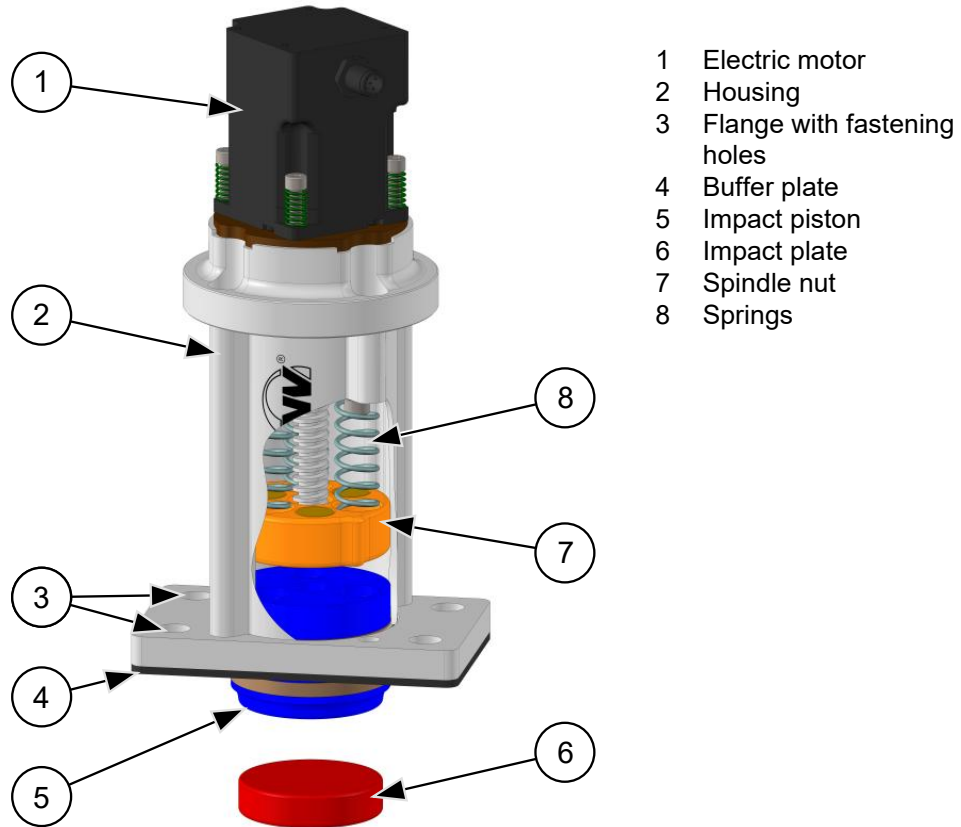
Dimension	A	B	C	D	E	F	G	H	I
[mm]	80	130	15	Ø 13	50	Ø 100	100	254	M12x1

**PIN
assignment**

PIN assignment connecting cable	
	
1	RS-458-B
2	RS-458-A
3	Ground
4	24 V/DC

4 Design and function

Design



Function

ePKL are electrically operated knockers. They are screwed to a suitable mounting surface by means of the fastening holes (3).

After the voltage is applied, the electric motor (1) moves the impact piston (5) against the springs (8) in the housing (2) with the aid of a spindle.

The piston is then struck against the impact plate (6) by the spring tension. The impact pulse is transferred to the mounting surface.

5 Transport and storage



Observe the safety instructions in chap. Safety, starting on page 5.

Transport conditions

Special conditions of transport are not required.

Packaging

The ePKL are packed and ready for assembly. Accessories and add-on parts are delivered unmounted, unless otherwise agreed upon.

The packaging protects the ePKL from transport damage. The packaging material has been selected from an environmentally safe and technically disposable point of view and is therefore recyclable.

The return of packaging to the material cycle conserves raw materials and reduces the amount of waste.

Storage conditions

- Store the ePKL in a dry and clean environment.
- Protect the ePKL from UV-exposures, weather and ozone.
- The storage temperature is between 5°C and +60°C.
- Close all openings when re-storing.

NetterVibration recommends storage at a constant storage temperature and humidity.

6 Installation



Observe the safety instructions in chap. Safety, starting on page 5.

Fixing devices

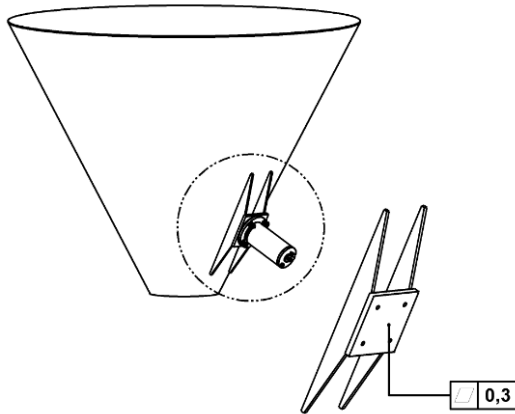
Appropriate fixing devices from **NetterVibration** with at least ± 0.3 mm flatness:

weld-on consoles, weld-on plates, glueing consoles

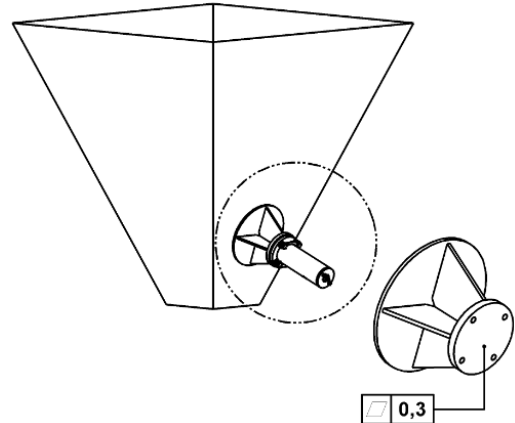
- Weld the weld-on consoles directly onto the container walls.
- Weld the plates onto previously mounted saddle plates (1.5 times the sheet thickness of the container).
- Glue the glueing consoles directly to container walls.

Examples:

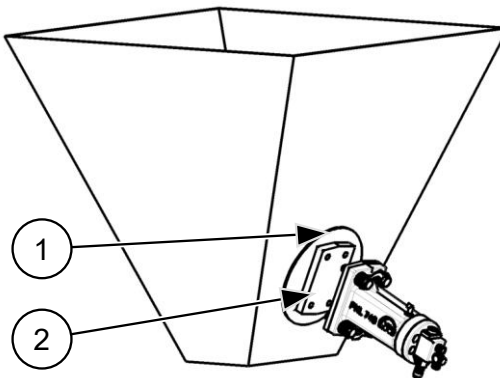
Weld-on console, plane



Weld-on console, round

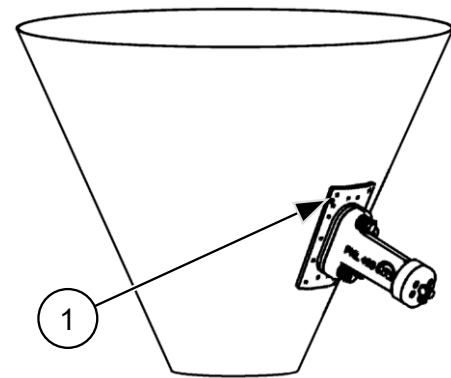


Weld-on plate



- 1 Saddle plate
- 2 Weld-on plate

Glueing console, conical



- 1 Glueing console

Changing the impact plate

With the ePKL, it is possible to replace the standard impact plate (hard-impact) with an optional elastomer impact plate (soft-impact).

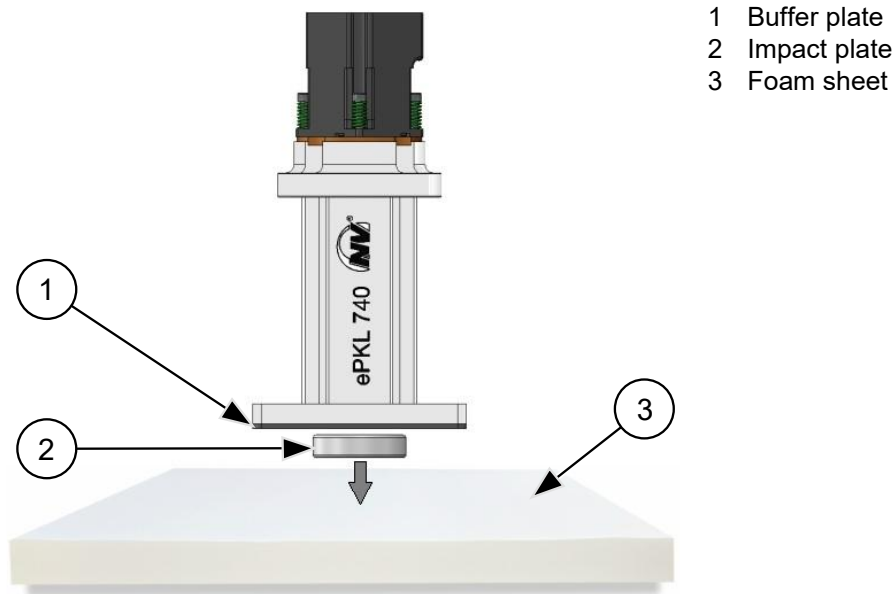
Precondition:

The ePKL is not fastened to a mounting surface.

Required aids:

- Foam sheet or similar material that absorbs impact energy
- EE kit (elastomer impact plate)

Overview:



Dismantle the impact plate:

1. Place a foam sheet on a suitable workbench.
2. Place the ePKL upright on the foam sheet (or another suitable base) and hold it firmly by the housing.
Do not touch the underside of the ePKL. There is a risk of injury.
The base (foam sheet) must provide sufficient clearance for the impact plate to be able to detach from the mounting flange. At the same time, the base must prevent the impact plate from bouncing off and being thrown away uncontrollably.
3. Connect the ePKL with a suitable power supply (24 V/DC or optional power supply unit) and carry out a stroke. The impact plate hits the foam sheet and can be removed.
4. Then disconnect the ePKL from the power supply.

Mounting the impact plate:

1. Place the buffer plate on a suitable workbench.
2. Press the new impact plate lightly into the housing on the underside.
3. Place the ePKL exactly on the buffer plate.
4. Carefully press the housing onto the buffer plate until the impact plate is even with the buffer plate.

Mount ePKL with fastening set NBS

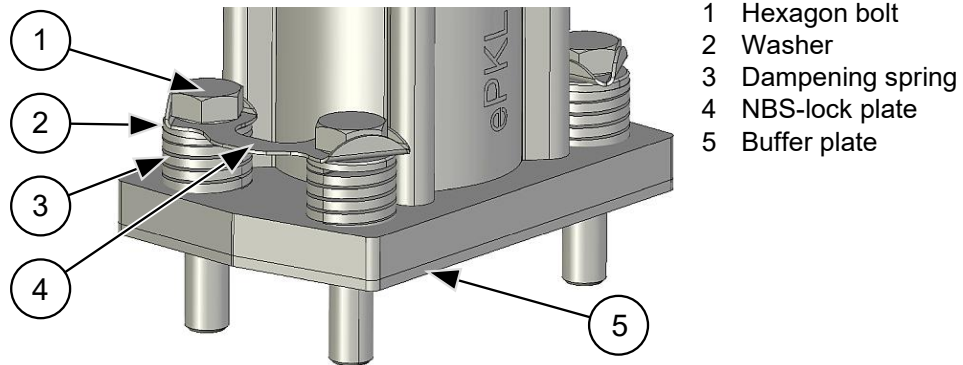
5. Mount the ePKL as described in the following section.

Use the mandatory NBS fastening kits to securely and permanently attach the ePKL.

The following fastening kits are available for the ePKL:

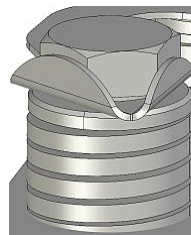
Description	Difference
NBS 740 G	For tapped hole
NBS 740 D	For through-hole
NBS 740	Without screws

Components of the optional fastening set NBS:



- 1 Hexagon bolt
- 2 Washer
- 3 Dampening spring
- 4 NBS-lock plate
- 5 Buffer plate

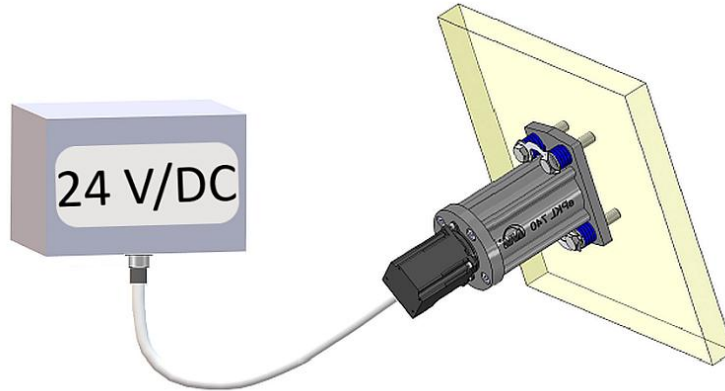
1. Fit 2 screws each with the elements of the fastening set in the following order:
NBS-lock plate, washer, dampening springs.
2. Insert the assembled screws into the holes on the flange of the ePKL. Ensure that the buffer plate (5) is positioned correctly.
3. Tighten the screw connections evenly, until the damping springs are completely pressed together.
4. Loosen all screw connections by one turn.



5. Then fold **all** protruding curves of the lock plates towards all screw heads

Standard installation

CAUTION: The ePKL starts to knock after the voltage is applied.



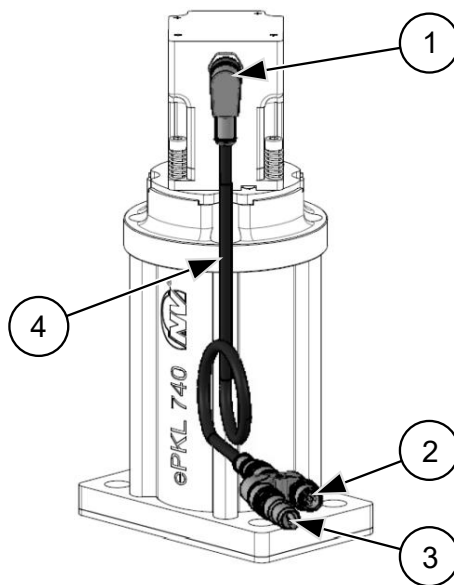
Connect the ePKL to a suitable power supply (24 V/DC, as specified in the chapter Technical data).

Installation with ST kit (optional)

The ST kit enables a continuous impact sequence for the ePKL.
CAUTION: The ePKL starts to knock after the voltage is applied.

Precondition:

The ePKL is screwed to a mounting surface with the NBS fastening kit.



- 1 Connector plug for ePKL
- 2 Socket 2: Connection for power supply
- 3 Socket 1: Assigned with coding plug
- 4 Y-cable

1. Connect the connector plug (1) to the socket on the ePKL.
2. Connect a suitable power supply (24 V/DC) to the M12 A-coded socket (2) on the Y-cable.
 The coding plug, which must not be removed, is located at socket 1. When voltage is applied, the ePKL with ST kit continuously performs 1 stroke/minute (factory setting).



**Checklist
installation**

Check that the following steps have been carried out:

- Permissible ambient temperatures observed?
- Mounting system attached for mounting the ePKL?
- ePKL mounted onto the fixing device (± 0.3 mm flatness) with NBS fastening set?
- Fastening screws secured with liquid safety agent if required?
- ePKL in critical assembly situations secured against falling by means of a safety cable?
- ePKL connected to a suitable power supply?
- Optional: ePKL connected to a suitable control unit?

7 Start-up and operation



Observe the safety instructions in chap. Safety, starting on page 5.

Permissible operating conditions

Please refer to chap. Technical data, page 9 for permissible operating conditions.

Process procedures

Single impact:

- Connect 24 V/DC via M12 plug or optional power supply unit. (Pin 3 = GND / Pin 4 = +24 V/DC)
- After removing and reapplying the voltage, a single impact occurs again.

Continuous impact:

- Option 1:
Connect the optional ST kit and power supply. The ePKL works in continuous operation.
- Option 2:
Bridge between pin 2 and pin 3 to activate the continuous impact.

Checklist operation

Check that the following steps have been carried out:

After one hour of operation:
fastening screws checked and tightened, if necessary?
Observe the maintenance plan.



8 Maintenance and servicing



Observe the safety instructions in chap. Safety, starting on page 5.

Maintenance plan

Maintenance of the ePKL must be carried out as follows:

Interval	Action
After one hour of operation after initial start-up	Check fastening screws and tighten if necessary.
	Check electrical connections.
Monthly	Check fastening screws and tighten if necessary.
	Check fastening set NBS.
	Check electrical connections.
	Check impact effect.
At the latest after a total of 300,000 strokes	Have a general overhaul (revision) carried out by NetterVibration . All wear parts are replaced.

Maintenance intervals

The maintenance intervals essentially depend on the operating conditions and the operating time.

9 Troubleshooting



Observe the safety instructions in chap. Safety, starting on page 5.

Malfunctions and causes

In the case of malfunctions of the ePKL proceed as follows:

Malfunction	Possible causes	Corrective actions
No function	Missing or incorrect power supply	Establish correct power supply. Check the power mains. Check connections and plugs. Remove the plug and plug it in again.
	Mechanical problem	Carry out the procedure as described in the section below.
	Electric motor defective	Have the electric motor replaced by NetterVibration .
Weak impact	Electric motor defective	Have the electric motor replaced by NetterVibration .
	Contamination, wear	Have ePKL repaired by NetterVibration .
	Spring/springs broken	Have ePKL repaired by NetterVibration .

Actuate ePKL manually

If the ePKL is not working, the following procedure can help.

WARNING: all activities described should be carried out in the assembled state. Otherwise, the impact plate must be remounted as described in section 'Changing the impact plate', from page 14.

Required tools:

Slotted screwdriver with 16 mm wide cutting edge or alternatively needle nose pliers

1. Dismantle the electric motor.
2. Use the screwdriver to manually turn the spindle nut counter-clockwise downwards until the piston locks in place.
3. Use the screwdriver to manually turn the spindle nut upwards clockwise until the piston strikes.
4. Use the screwdriver to manually turn the spindle nut counter-clockwise downwards until the piston locks in place.
5. Mount the electric motor.
6. Connect the ePKL and actuate it.
7. Check the function of the ePKL again.

10 Spare parts and accessories

Ordering of spare parts

Please provide the following details when ordering spare parts:

- type of ePKL
- description and position of spare part
- required amount



Possible accessories

Following accessories for the ePKL are available:

Accessory	Description
NBS fastening sets	Compulsory for safe and permanent mounting (see chap. Installation, page 15)
Electrical connection cables and plugs	For connecting the ePKL
Power supply	For power supply of the ePKL
ST kit	Allows continuous impact sequences
EE kit	An impact plate made of elastomer dampens the impact and thus reduces the material stress as well as the sound level
Fixing devices	For stationary mounting
Safety cable	Protects the ePKL from falling down

11 Disposal

Disposal

	<p>All parts of the ePKL must be disposed of properly according to the material specifications.</p>
	<p>Do not dispose the electrical and electronic components of the ePKL in the normal household waste, but in a special collection point for the environmentally friendly disposal of electrical equipment.</p> <p>Observe the national regulations for disposal.</p>

Material specifications

ePKL 740:

Component	Material
Housing	Aluminium
Impact pistons, compression springs, screws	Steele
Seals	Plastics
Spindle nut	Brass
Electric motor	Metal housing, electronic components

12 Annex

The declaration of conformity can be found at: [www.**NetterVibration**.com](http://www.NetterVibration.com)