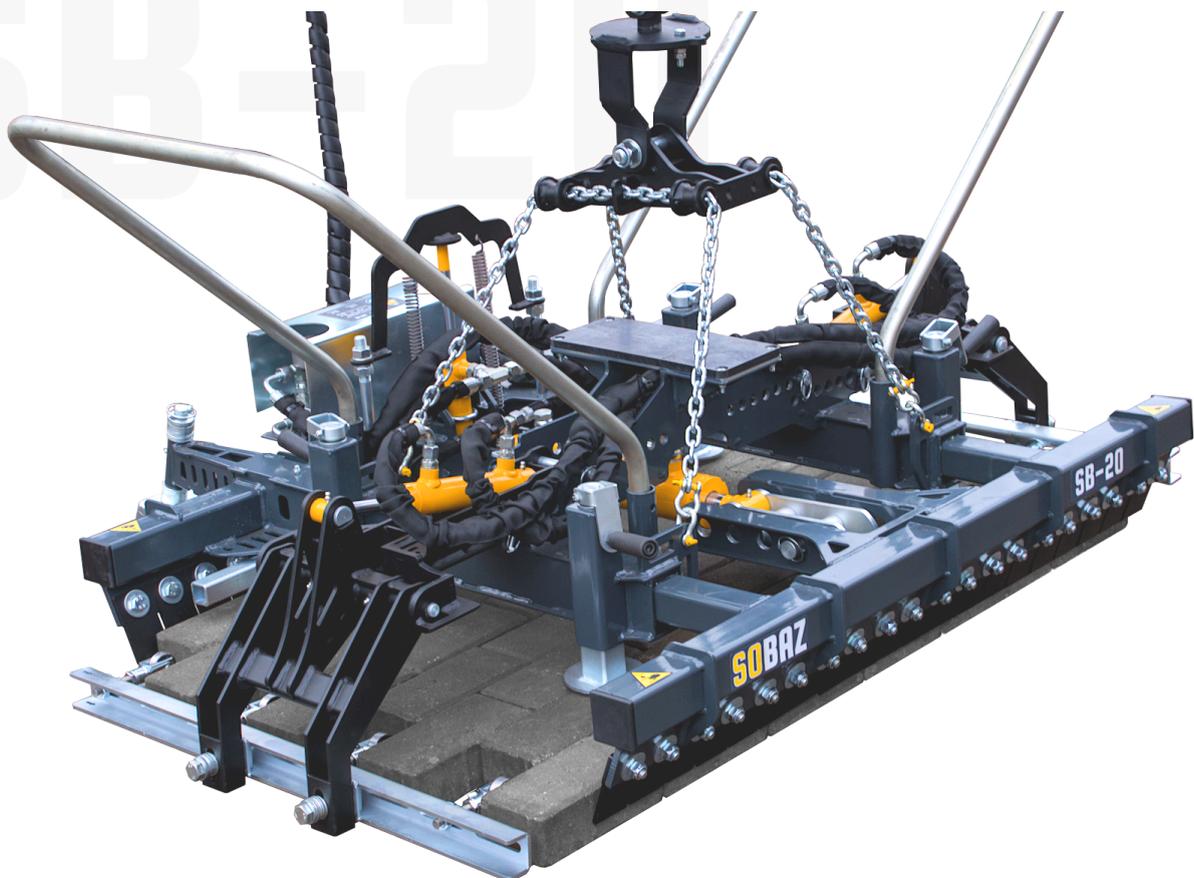


OPERATIONS AND MAINTENANCE MANUALS

HYDRAULIC PAVER LAYING CLAMP

SOBAZ SB-20



ORIGINAL INSTRUCTIONS

This technical and operating documentation is an integral part of the hydraulic laying clamp and it should be read before use.

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1. Work safety

1.1. Meanings of symbols

Symbol	Meaning
	Danger warning
	Danger of crushing hands
	Hanging weights Never stand under hanging loads!
	Every user of the machine must read and understand the attached operating instructions and familiarize themselves with the safety rules.

1.2. Definition of terms

Gripping range	Minimum and maximum dimensions of the material that the machine can grip
Opening width	It consists of a gripping range and an additional dimension that is necessary for proper gripping of the material.
Dead weight	Machine weight without held material
Load capacity (lifting capacity)	Maximum permissible weight of the lifted load

1.3. Health care

1.3.1. Protective equipment

Before starting work, each user of the machine must have the appropriate equipment for this job, which consists of:

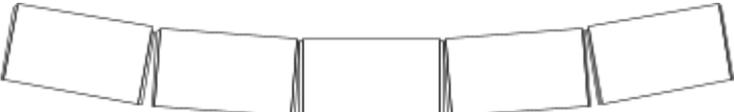
- protective helmet
- protective clothing
- protective gloves
- protective shoes

1.3.2. Prevention against accidents

- **Wet, dirty, icy and frozen building materials may cause it to slip out, so special caution is recommended.**
- The workplace must be secured against entry by unauthorized persons.
- Adequate lighting of the work area is crucial to avoid unforeseen and dangerous situations.

1.4. Quality of the transported material

It is necessary to correctly determine the quality of the material before starting work with it, any irregularities may lead to the layers breaking when gripping or to cracking of individual pieces of material.

<p>The ankle should not have any bulges or wider feet</p>	<p>✓ </p>
<p>The stone layers are collapsing</p> <p>There is a risk of the stone falling out when moving it</p>	<p>✗ </p>
<p>The stone has "feet" (e.g. manufacturing error)</p> <p>There is a risk of the stone falling out during transport and breaking.</p>	<p>✗ </p>

2. Introductory information

2.1. General information

The Operation and Maintenance Manual is intended for users of the paving stone grab. Familiarity with the information contained in this documentation is essential for safe use and for its intended purpose.

The company is constantly working to improve the final product, so the documentation may contain minor design differences in relation to your machine.

Standard equipment of the SOBAZ SB-20 paving stone gripper:

- adjustable and movable sliding jaw on polyamide guides
- adjustable side arms for moving the bricks in the opposite way to gripping it
- two sets of side profiles (long and short) with 10 adjustable pushers for shifting
- a safety lock mounted on the actuator, protecting the actuator against uncontrolled movement
- overflow valve used to regulate the pressure in the gripper's hydraulic system
- positioning guide wheels
- a system for smoothing out unevenness in the first layer

Minimum operating weight of the excavator - 1.7 tons

The weight of other machines depends on their design and type, individual agreement required.

Hydraulic power requirements

- Working pressure [bar]: min 150, max 200
- Volume flow [l/min]: min 25, optimal 35 to 45

2.2. Purpose and construction

The gripper is intended solely for transporting and laying a single layer of paving stones placed on a pallet in a way that does not expose the gripper or the operator to damage.

The machine should not be used to transport objects other than paving stones. Failure to follow this rule may result in damage to the machine or personal injury.

Transports carried out by machine that do not comply with the above-mentioned or applicable regulations are **strictly prohibited**.

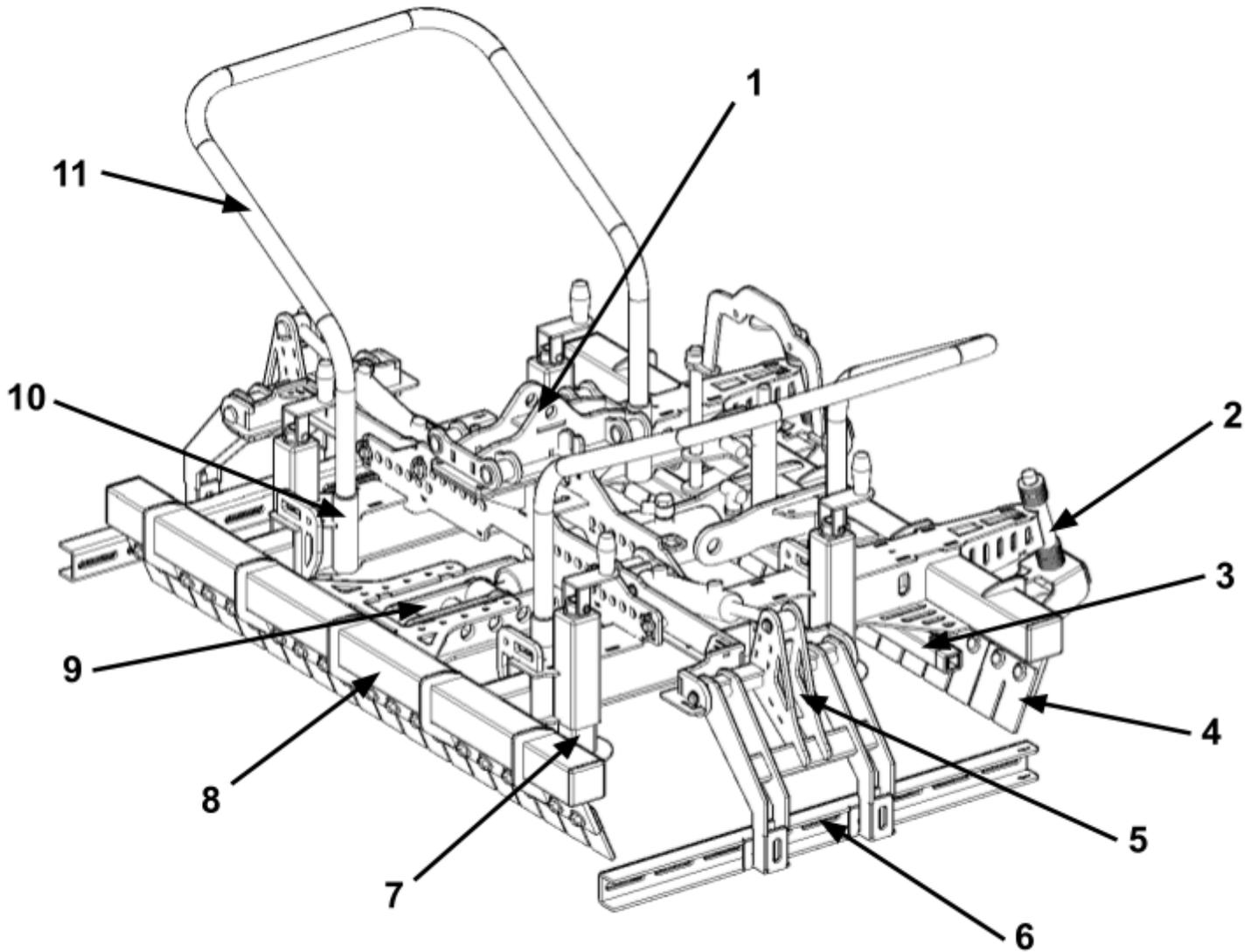
It is particularly **prohibited** to:

- **transport of people and animals**
- grabbing any other construction materials not described in this instruction manual
- gripping and transporting goods that may be deformed or broken
- capturing and transporting goods about **conical or round shape**
- gripping and transporting goods with a significantly reduced coefficient of friction (e.g. wet, icy, dirty), **there is a high risk of slipping**
- grab material with significant damage

Exceeding the maximum permissible load capacity of the machine is **prohibited**.

Any unauthorized modification carried out without the manufacturer's consent may cause damage to health. - **strictly prohibited!**

2.3. Illustrative drawing



1	Suspension mount	7	Supporting foot
2	Positioning guide wheel	8	Movable jaw
3	Pushing bar	9	Movable jaw's mount
4	Adaptive plates	10	Working handle attachment
5	Side pressure arms	11	Working handle
6	Side profiles		

2.4. Technical parameters

Technical parameters (dead weight, load capacity, maximum pressure) are located on the nameplate or elsewhere on the machine.

3. Before starting work

3.1. Introduction



Inspection and adjustment work should be carried out only and exclusively **while the machine is turned off!**



Adjustments must be carried out by a person familiar with the operating instructions and who is appropriately equipped during the adjustment (i.e. gloves, helmet, shoes and protective clothing). **There is a risk of hand injury when adjusting.**



Before starting work with the gripper, begin by checking the condition of the fasteners and their tightening torque. Do not begin work if any machine component is damaged.

ATTENTION!

Immediately after lifting, the load must be kept close to the ground (approx. 0.5 m). The load should only be lifted as high as necessary.

3.2. Adjusting settings

3.2.1. Main clamp width

The gripping width is adjusted by changing the position of the pin in the mounting on the movable jaw.

The pin in the hole can be moved every 50 mm, alternating with the front and rear mounting sleeves, which gives an adjustment stroke of 25 mm.

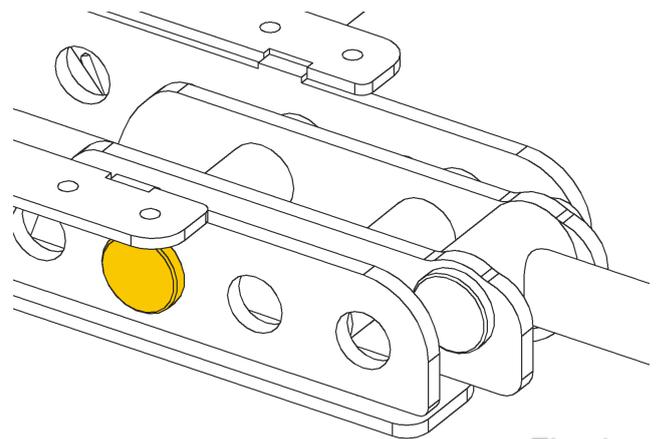


Fig. 1

ATTENTION!

Remember to secure the pins with a cotter pin when changing the mounting holes.

3.2.2. Tilt adjustment

To adjust the gripper tilt, insert the machine's chain links through the special mounting between the bushings (see Fig. 2). Both sides should be locked on the same link.

The correct gripper position when stacking is slightly tilted backwards or horizontally.



Fig. 2

3.2.3. Support feet - grip height adjustment

Height adjustment is achieved by turning the crank from the support feet. Turning it counterclockwise causes the foot to extend, reducing the grip height. (See Fig. 3)

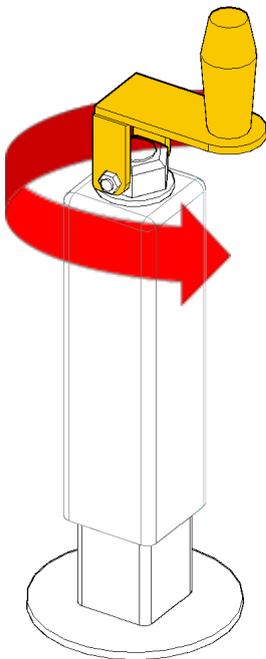


Fig. 3

The support feet should be set in such a position that when the adapter plate is placed on the stone, the jaws are at $\frac{1}{3}$ of the stone height (see Fig. 4).

Improper foot positioning will cause the stones to fall apart when lifted.

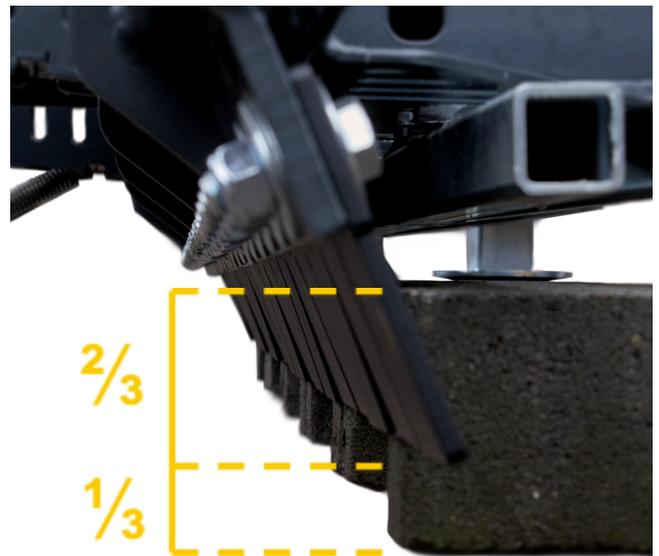


Fig. 4

3.2.4. Positioning guide wheel

Rotating guide wheels provide precise paving. By resting them on an already laid layer of paving stones, we can position the next layer.

Height adjustment is performed by moving the spacers located on the pin from top to bottom or vice versa (see Fig. 5).

The height of the wheel should be set in such a way that when laying the layer of blocks, a gap of $8\text{ mm} \pm 4\text{ mm}$ is ensured between the surface of the laid block and the adapter plate (see Fig. 6).

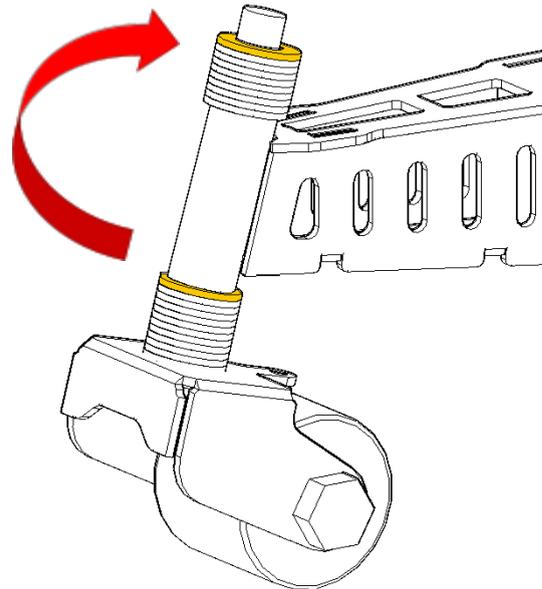


Fig. 5

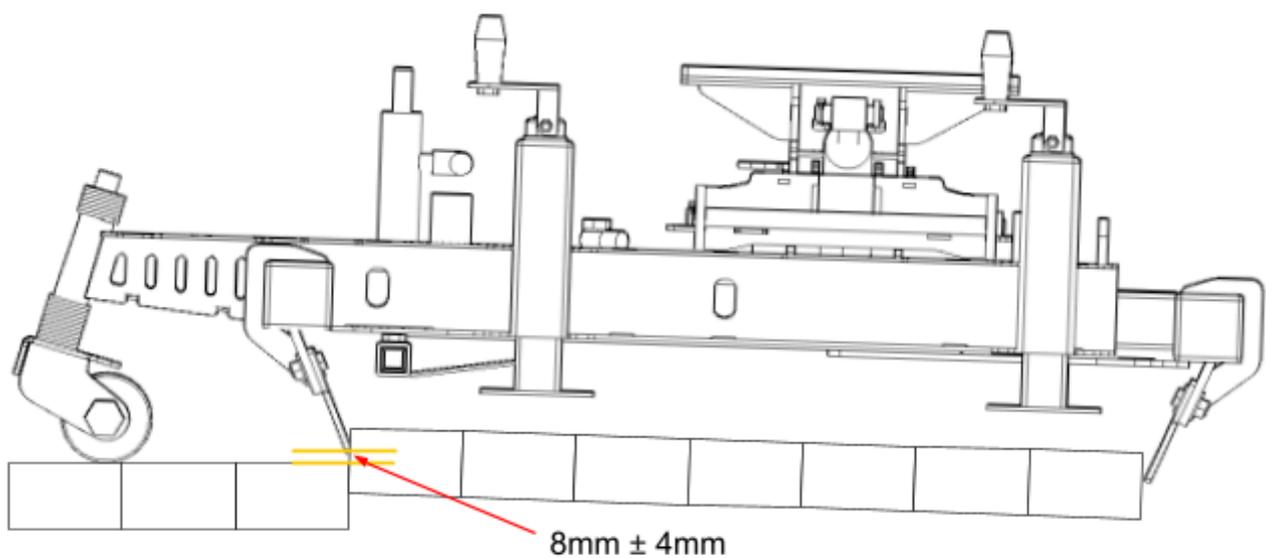


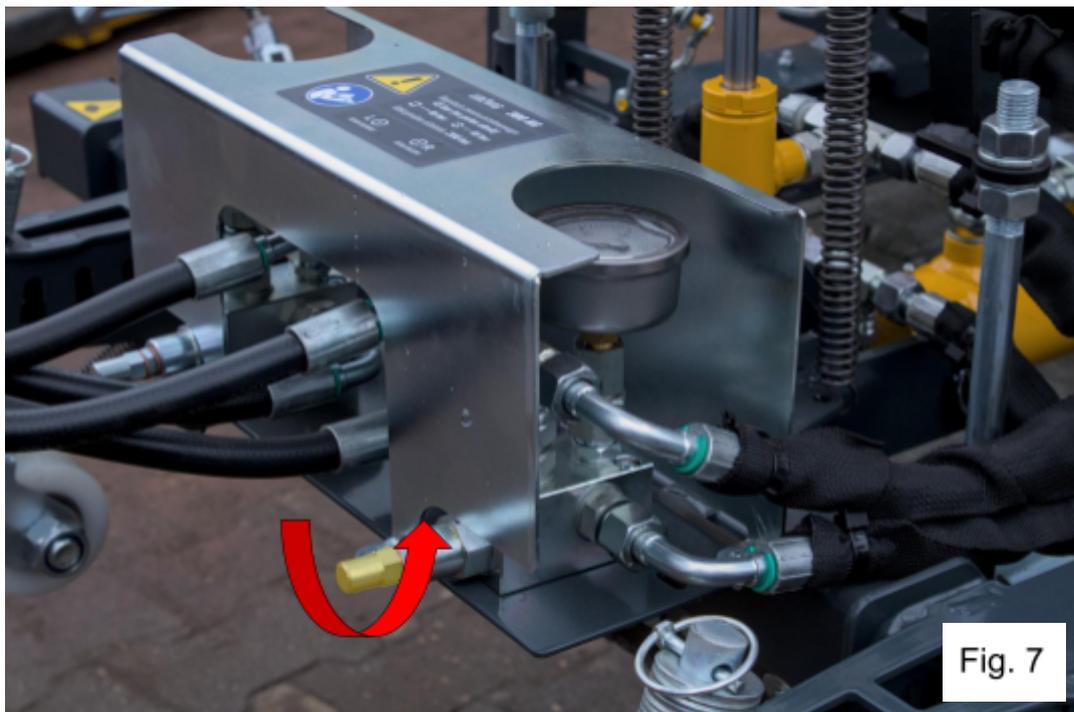
Fig. 6

3.2.5. Adjusting the gripping force

The relief valve (pressure valve) is used to stabilize and limit the maximum pressure in the entire hydraulic system. A pressure gauge mounted on the relief valve indicates the current oil pressure.

The valve is adjusted using a screw protruding from the housing and secured with two nuts; these must be unscrewed to gain access to the adjusting screw (see Fig. 7).

Increased maximum pressure occurs when the screw is turned clockwise, turning it counterclockwise will reduce the pressure.

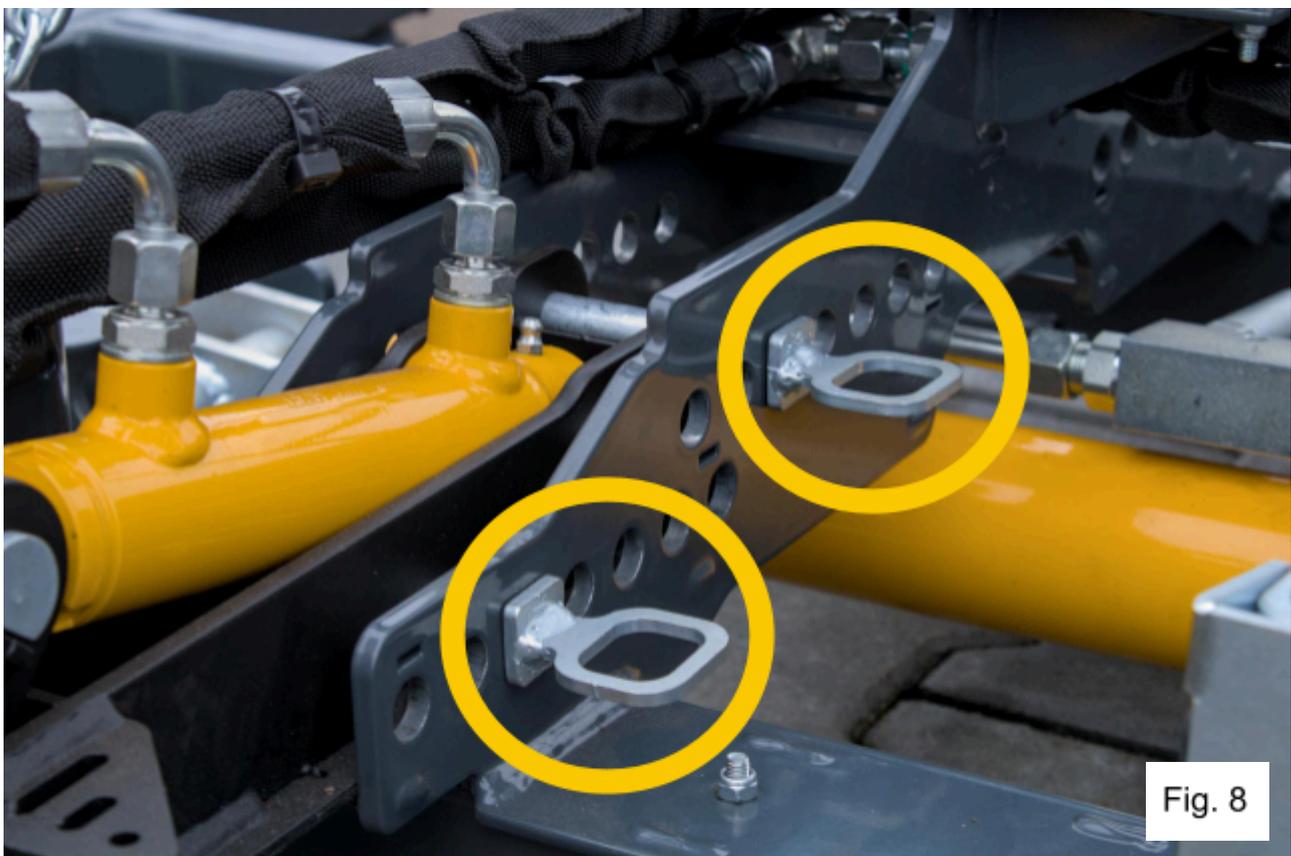


Maximum allowable pressure: 200 bar

3.2.6. Side shifting

The side clamp is used to move the stone rows and eliminate unevenness of the layer during gripping.

The main adjustment of the side clamp width is achieved by changing the position of the mounting pins and placing them in the holes corresponding to the required working width (see Fig. 8).



ATTENTION!

Remember to secure the pins with a cotter pin when changing the mounting holes.

Additional adjustment of the side profiles ensuring the full range of adjustment is done by moving the washers (see Fig. 9)

Remember to tighten the mounting screw!

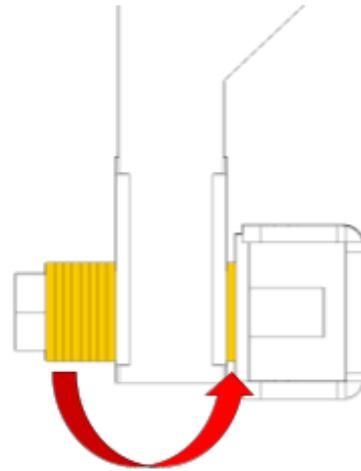


Fig. 9

The arrow on the side clamp profile should point towards the movable jaw.

Improper mounting of the profiles may result in damage!

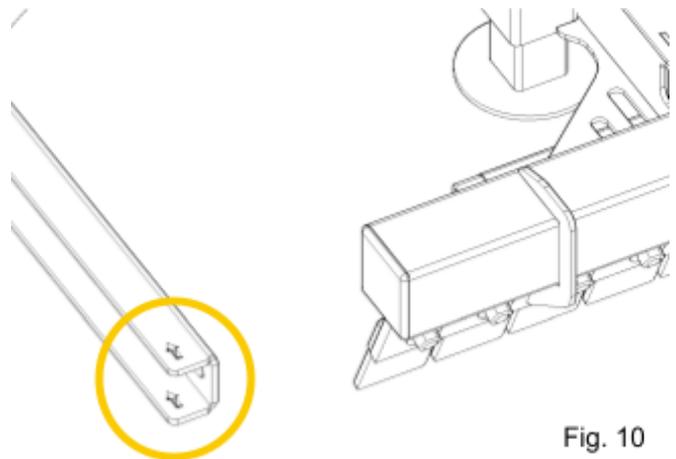


Fig. 10

3.2.7. Side pushers

The side pushers are adjusted by changing the position of the mounting nuts (see Fig. 11).

The end point of the side pushers should be set below half the height of the stone being laid.

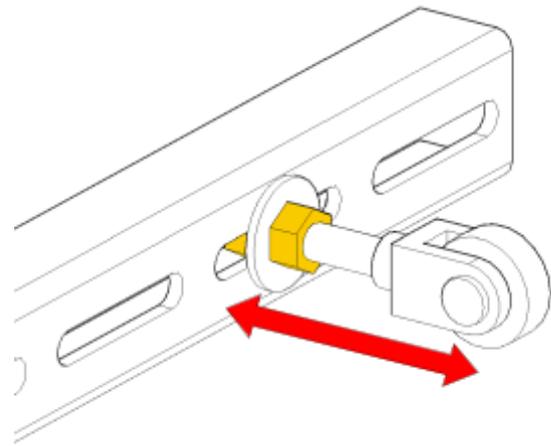
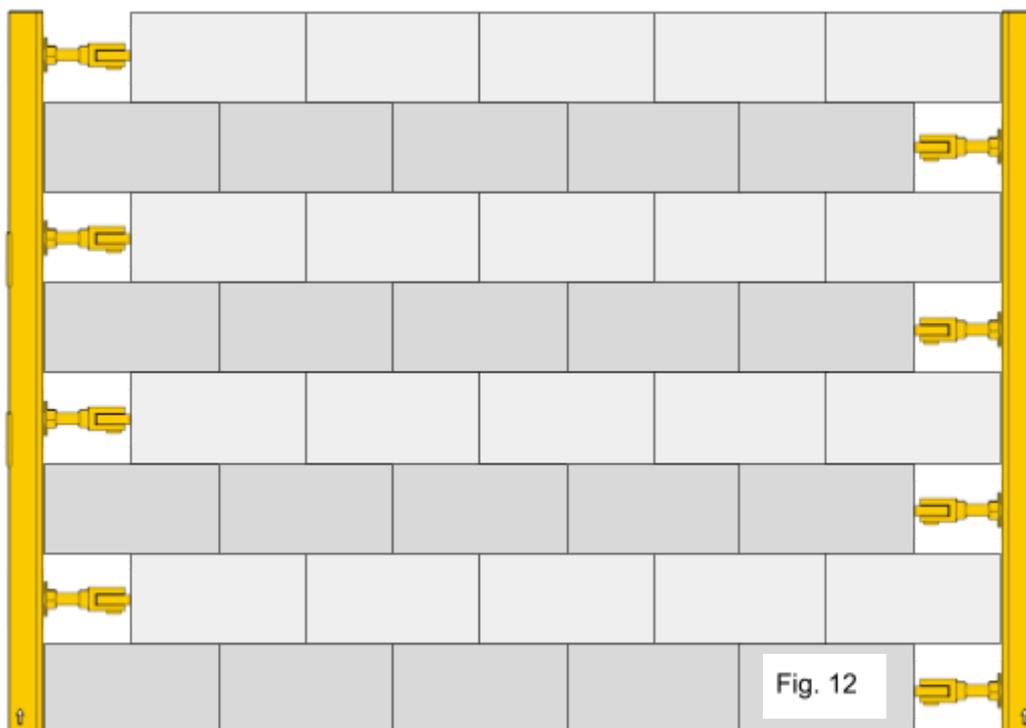


Fig. 11

The side pushers should be positioned so that their end point is halfway along the length of the paving stone being laid. This positioning will allow for even and accurate movement (see Fig. 12).



3.2.8. Changing the width of the jaws

The type of stone being gripped may require a change in jaw width, with smaller stone types. This can be done by unscrewing unnecessary adapter plates or replacing them with smaller ones (see Fig. 13).

ATTENTION!

Each time the lock nut securing the adapter plates is unscrewed, it must be replaced with a new one due to the loss of its securing properties.

The adaptive plates may protrude slightly beyond the outline, making it difficult to place them on the existing layer.

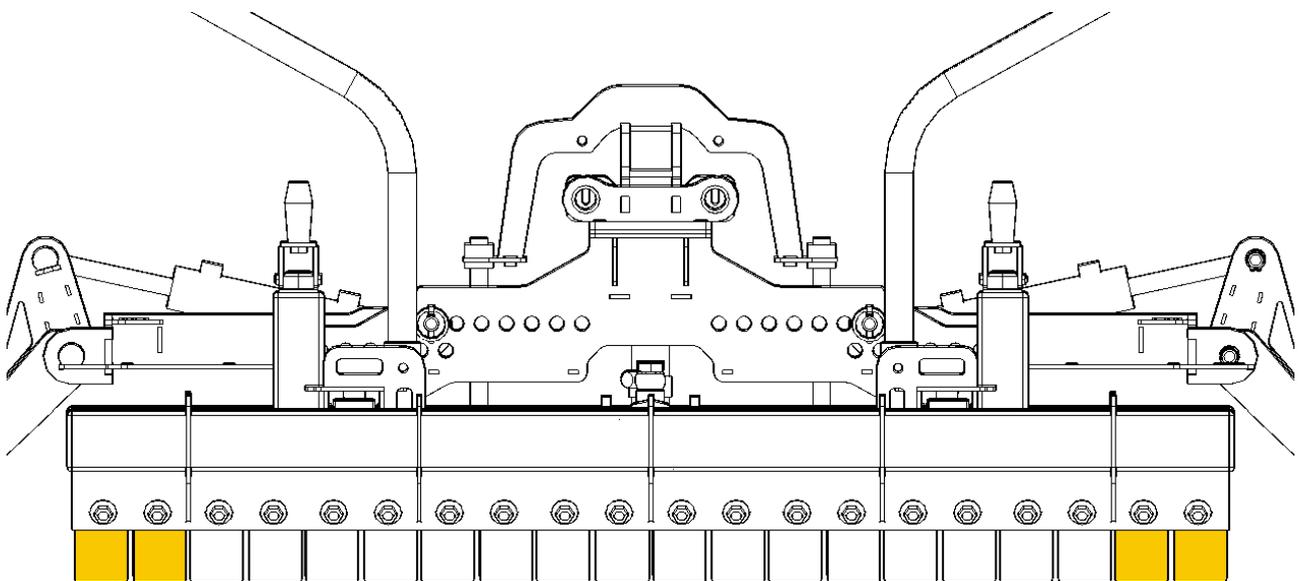


Fig. 13

3.3. Transport

To safely transport the gripper, it must be in a horizontal and static position. The securing device must prevent the load from shifting on the pallet. Any moving part of the gripper must be immobilized.

It must be secured with appropriate harnesses, ropes, and belts. It should only be moved along with the pallet using appropriate equipment (e.g., a forklift).

4. Controlling the machine

4.1. General

Before each start of work with the gripper, a functional and visual inspection of the machine should be carried out.

ATTENTION!

Never use the main clamp (with or without material) when the side clamp is closed!

There is a risk of collision between the movable jaw and the side profiles, leading to damage to one of these elements.

ATTENTION!

Pay particular attention to the position of the boom arm on which the grab is mounted when transporting a layer of material. Extending the arm too far can cause the carrier (e.g., an excavator) to tip over.

ATTENTION!

It is essential to familiarize yourself with the actual connections and controls, and in particular, remember which lever function on the carrier corresponds to the clamp opening. This is very important to avoid accidental use of this function during material transport.

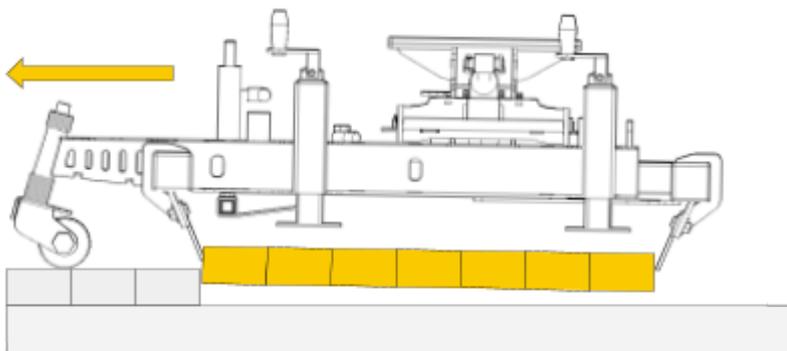
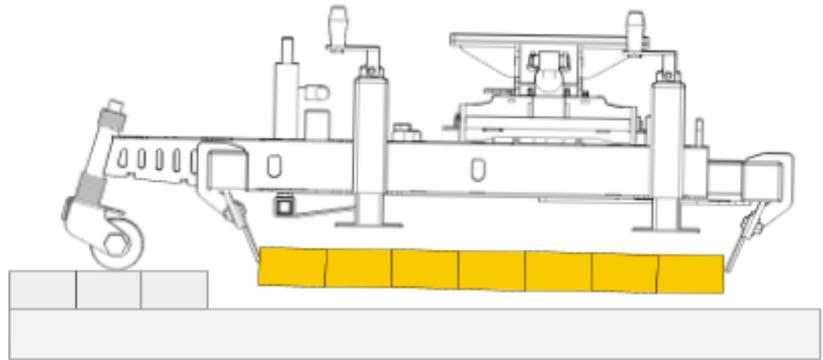
RISK OF ACCIDENT!

4.2. Laying paving stones

4.2.1. Illustration

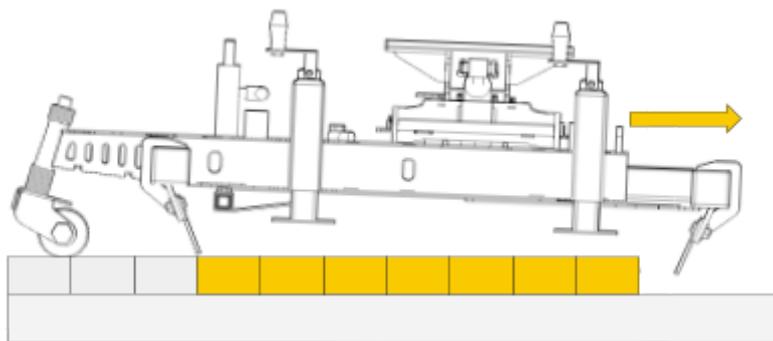
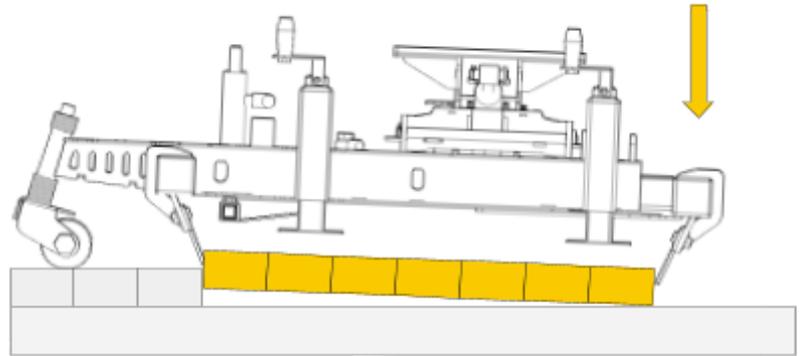
The illustrations below show how to properly lay paving stones with a gripper.

1. The guide wheels should be placed on the already laid layer of paving stones, maintaining the appropriate inclination of the gripper.



2. Then the layer of paving stones must be placed in the correct position and properly tightened to the already laid stones.

3. The grab with the paving stone layer should be lowered to the floor level.



4. The last movement is to open the gripper jaws and lift it without the material.

4.2.2. General instructions

Material assumptions:

- the laid material is standardized, uniform and has a pattern that allows for machine laying
- the laid material is equipped with spacer edges of at least 2.5 mm thickness

The correct and most efficient layout of the construction site is very important when it comes to the speed of paving, because the most time of the entire process is taken up by the transport of material.

Depending on the material configuration, it may be necessary to add additional keystone to the arrangement to interlock with those already placed or to allow for the repositioning of individual stones.

5. Maintenance and upkeep

5.1. Maintenance

Before each use of the gripper, check the condition of all machine parts and whether they are properly lubricated.

It is only permissible to use **original spare parts!**

Failure to follow these recommendations will void the warranty.

In order to ensure trouble-free operation and a long service life, the maintenance work listed in the table (points 5.1.1 and 5.1.2) should be performed after the indicated periods.

All service work must be performed only after the machine has been disconnected from all power sources (hydraulic and electrical).

You must make sure that possibility of jaw closure **does not exist**, which may lead to health damage.

All maintenance work may only be performed by a qualified person.

5.1.1. Hydraulics

It is necessary to carefully check the continuity of the hydraulic lines, **abrasions or cuts** may cause it to **break**.

Any abrasions or cuts must be immediately eliminated by replacing the cable with a new one.

MAINTENANCE PERIOD	SCOPE OF WORK
First inspection after 20 hours of work	<ol style="list-style-type: none"> 1. Check the condition of all hydraulic connections, tighten if necessary.
First inspection after 40 hours of work	<ol style="list-style-type: none"> 1. Change the hydraulic oil in the entire system, including the carrier. Hydraulic oil recommendations: - mineral oil, HLP ISO VG 46 - cleanliness: ISO 4406 22/20/17 or NAS 9 2. Replace hydraulic oil filters
Every 40 hours of work	<ol style="list-style-type: none"> 1. Check the condition of the hydraulic system for leaks 2. Check the condition of all hydraulic connections, tighten if necessary. 3. Check the condition of all hydraulic hoses for kinks, abrasions, or cuts. Replace hoses if necessary. 4. Change the hydraulic oil in the entire system, including the carrier. Hydraulic oil recommendations: - mineral oil, HLP ISO VG 46 - cleanliness: ISO 4406 22/20/17 or NAS 9 5. Replace hydraulic oil filters 6. It is recommended to replace hydraulic hoses after 5 years of use, and should be replaced earlier if there are visible signs of wear, such as leaks, cracks, swelling, abrasion, corrosion of ends or loss of elasticity.

5.1.2. Mechanics

MAINTENANCE PERIOD	SCOPE OF WORK
<p>First inspection after 20 hours of work</p>	<ol style="list-style-type: none"> 1. Check the tightness of all mounting screws and, if necessary, tighten them to the appropriate torque according to their strength class.
<p>Every 40 hours of work</p>	<ol style="list-style-type: none"> 1. Check the tightness of all mounting screws and, if necessary, tighten them to the appropriate torque according to their strength class. 2. Check the condition of the suspension components, any irregularities (i.e. cracks, wear, corrosion) should be removed as soon as possible by replacing the components with new ones 3. Check all securing pins for proper operation, any damaged ones should be replaced. 4. Check the gripper jaw sliding guides for wear and replace if necessary. 5. Check the gripper jaw slide guides for lubrication, clean any contamination and lubricate again. 6. Check all moving parts, joints and rotating parts for lubrication, adjust and replace the grease. 7. Lubricate all places where grease fittings are installed. (industrial lithium grease recommended)

5.2. Troubleshooting

PROBLEM	CAUSE	SOLUTION
A layer of material falls out when lifted	Material quality	Check the material quality according to point 1.4 (page 4)
	Incorrect setting of the main clamp width	Adjust the grip width setting, the main cylinder cannot be fully closed during gripping
	Too much material layer	For larger material formats it is necessary to increase the gripping depth, the material should be gripped in the lower part of the layer
	Material grabbed too high	Grip the material to a depth consistent with section 3.2.3 (page 10)
Individual pieces of material fall out when picked up	The material is damaged or its dimensions are too different from the others	Replace a single piece of material
The material is not fully moved by the side clamp	Material blocking	You can not move material with locking teeth
	Side spacer pins lock into place, preventing movement	Move the material several times, opening and closing clamps
The hydraulic cylinders do not move	The hydraulic quick coupling is connected incorrectly	Correct the hydraulic quick coupling connection
	Power hydraulics element	Check and adjust or replace the damaged element

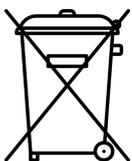
5.2.1. Gripping Recommendations

PROBLEM	SOLUTION
Material spacer pins are less than $\frac{3}{4}$ of the total height	Grasp the material as deeply as possible
The material has distortions resulting from the production process	Grasp the material as deeply as possible
The oil pressure is insufficient to maintain the film	Use the relief valve adjustment to increase the operating pressure as described in section 3.2.5 (page 12)
The material on the pallet is arranged with significant unevenness	Transfer the material to a flat surface

6. Machine disposal and recycling



This product may only be decommissioned and prepared for disposal or recycling by appropriately trained personnel. Individual components, such as metals, plastics, and liquids, must be disposed of or recycled in accordance with applicable national waste management regulations and rules.



The product or its components may not be disposed of with household waste.

7. CE Declaration of Conformity

CE Declaration of Conformity

Within the meaning of the Machinery Directive 2006/42/EC, Annex II, 1. A

Producer: SOBAZ Krystian Bazowski Damian Bazowski
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Trade name: SOBAZ gripper
Function: Gripper for laying paving stones
Type/model: SB-20

the mentioned machine meets the requirements of the following European directives

- Machinery Directive 2006/42/EC of 17 May 2006 (OJ L 157, 9 June 2006, p. 24)

A person residing or established in the Community, authorized to prepare technical documentation:

Name and surname Damian Bazowski
Address ul. Przemysłowa 13, 76-230 Potęgowo

Place, date and signature of the authorized person

Potęgowo, 11/12/2025

.....
(Damian Bazowski, partner)