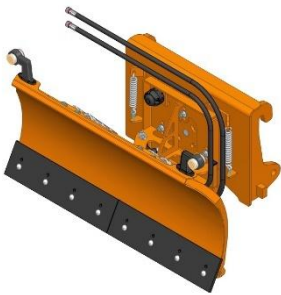


INSTRUCTION MANUAL

GUARANTEE



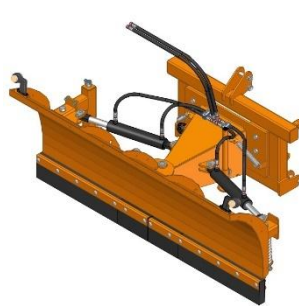
SNOW PLOUGH
STRAIGHT
COMMUNAL

CPK



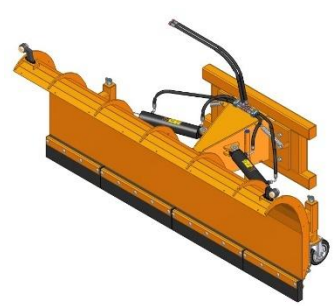
SNOW PLOUGH
STRAIGHT
LIGHTWEIGHT

CPLH



SNOW PLOUGH
STRAIGHT
STANDARD

CPSH



SNOW PLOUGH
STRAIGHT
HEAVYWEIGHT

CPCH

Bytów 2021
ORIGINAL INSTRUCTIONS
Issue 01



NOTE!

These instructions for use should be read before use and observe the safety instructions contained therein.

The instruction manual is the basic equipment of the machine !

The instructions should be kept in a safe place, where they should be available to the user and operator throughout the life of the machine.

If lost or destroyed, a new one must be purchased by ordering one from at the machine's point of sale or from the manufacturer.

If the machine is sold or made available to another user, the operating instructions together with the declaration of conformity for the machine must be included.

The manufacturer reserves all rights to the instructions for use. Reproduction, processing of the manual and its parts without the permission of the manufacturer - **prohibited**.

The information contained in the manual is current as of the date of preparation. As a result of product improvement, some data and illustrations may not correspond to the actual state of the machine delivered to the customer. The manufacturer reserves the right to make design changes to improve the product, without making changes to this publication. If you do not fully understand the information contained in this manual, please contact the manufacturer or your dealer.

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

Table of contents

1. Introduction	4
2. Work safety rules	5
2.1 User safety	5
2.2. Safety signs on the machine and their meaning	9
2.3 Hazards in snow plough operation	10
3. Purpose of the device	11
4. Description of the device	12
4.1 Equipment and fittings	13
4.1.1 Basic	13
4.1.2 Additional	13
4.2 Technical characteristics	16
4.3 Forces acting on the snow plough	20
5 Use of the device	22
5.1 Snowplough installation	22
5.2 Hydraulic control system	23
6. Operation and maintenance	24
6.1 After-service operation	24
6.2 Lubrication of moving connections	24
6.3 Post-seasonal maintenance	26
6.4 Deletion, environment	26
7. Spare parts catalogue	27
7.1 Hydraulic supply components	31
8. Guarantee	32
9. Declaration of conformity	34

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

1. Introduction

It is essential that you read this operating manual with understanding and follow all the instructions before using the snow plough for the first time.



NOTE!

Read the operating instructions
Before using the snowplough

This manual contains a description of the hazards that can occur if the safety rules are not observed when operating and handling the snow plough. The manual lists precautions to be taken to minimise or avoid hazards.

The manual also contains rules for the correct handling of the snow plough and explains the maintenance work to be carried out when doing so.

If you do not understand the information given in the manual, please ask the manufacturer directly for clarification.



NOTE!

The symbol warns of a hazard.
This warning symbol indicates
important information on hazards given in the
instructions. Please read the information given
carefully, follow the instructions and take special care.

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

2. Work safety rules

2.1 User safety

The snowplough should only be operated by adults who are familiar with the operation of the plough

and the contents of this manual and who are suitably qualified. Ploughs should be operated with all precautions in mind, in particular:

- In addition to the instructions in this manual, also observe the general rules of health and safety at work.
- Observe the warning symbols on the machine.
- Never allow a vehicle operating a plough to be driven by anyone other than its operator, and under no circumstances allow other persons to be on the vehicle and machine during operation.
- The snow plough must be operated by a person who is qualified to drive the vehicle to which the plough is fitted in accordance with the manufacturer's recommendations.
- The operator's workstation during snowplough operation is the cab of the vehicle to which the plough is fitted.
- Please note that there are many places on the plough that can cause injury (sharp edges, protruding components, etc.). When working, increased caution must be exercised when moving in the vicinity of the critical areas mentioned and personal protective equipment such as:
 - protective clothing,
 - protective gloves,
 - safety footwear
- It is prohibited to carry persons or objects on the snow plough.
- It is forbidden to move or shift solid objects other than bulk materials. In this respect, the manufacturer's recommendations must be strictly adhered to.
- It is forbidden to operate the snow plough by unauthorised persons who are not familiar with the instructions for use.
- When working with loose materials such as snow, it is necessary to wear protective clothing appropriate to the material being pushed, in particular rubber boots, gloves, coat, cap, and a respirator - for dusty materials.
- An employee working with an off-site snowplough must be provided with a first aid kit containing first aid supplies with instructions for their use.
- In case of poisoning or infection, contact a doctor immediately.
- When moving the vehicle with the plough not in operation, ensure a safe transport height of ~0.3m).

Operating instructions

- Exercise extreme caution when travelling on public roads and comply with the current highway code.
- When driving on public roads, it is essential to use the electric marker lights with which the snowplough is equipped, checking that they are in working order and visible, and ensuring that they are clean. A triangular distinctive plate must be fitted to the rear of the vehicle. A warning-light device on the roof of the cab. Care should also be taken to ensure that the reflective lighting and warning signs on the structural components of the snow plough are clean and visible
- The transport speed should be adapted to the condition of the road surface.
- In order to maintain adequate manoeuvrability, snowploughs must be adjusted to the vehicle in accordance with the recommendations of the manufacturers - vehicle and plough and the suspension system used. The mounting rules from the snow plough manufacturer are described in section 5.1 Snow plough mounting - of this manual.
- It is important to ensure that the axle load of any vehicle with a plough fitted is not less than 20% of its weight.
- Do not leave the plough vehicle on slopes or other inclines without securing it to prevent it from rolling off on its own. The plough must be lowered to the ground. Place chocks under the wheels.
- The snowplough must be adjusted for operation when fitted to the vehicle. During operation, adjustment is permitted, which is possible from the cab without the operator leaving the vehicle cab.
- Before starting any preparation, assembly, disassembly or adjustment operation, switch off the drive, vehicle engine, immobilise the vehicle and wait for all moving parts of the machine to stop.
- After the first hour of operation, check the condition of all detachable connections, min. screw connections.
- Store the plough on flat, level, paved ground in a place that is inaccessible to bystanders and animals. Use a support foot for stable ploughing.
- Special care must be taken when fitting and removing the snow plough, paying particular attention to the structural components responsible for attachment to the vehicle.
- Before working with the snow plough, check the technical condition of the plough and the mating vehicle. The unit, vehicle and snowplough must be in good working order. Worn or damaged parts must be replaced immediately with new parts.
- The snow plough must be fitted with all guards (if provided by the manufacturer) to prevent access to moving parts. The guards must be complete and in full working order.

Operating instructions

- Before operating the snow plough, familiarise yourself with the operation by reading the operating instructions, the safety rules and the recommendations for operation and adjustment.
- Before starting work, familiarise yourself with the snow plough controls and its general operation.
- The weight of the snow plough suspended from the vehicle may affect the steering. Special care should be taken in this situation.
- The instruction manual must be kept with the plough. When lending a snowplough, it must be handed over in working order with the instruction manual.
- Before operation, prepare the snow plough according to the recommendations under : 5 Using the machine, Snow plough installation.
- It is prohibited to attach additional means of transport to the snow plough.
- During the initial start-up, check the plough function and make initial adjustments without load.
- Installation securing of the snow plough pins must only be carried out using the typical cotter pin securing. Working with other safeguards is not permitted.
- Due to the natural wear and tear of the materials, the recommendations described in Chapter 6 Operation and Maintenance must be followed.
- Before starting work, pay attention to the condition of the snow plough's hydraulic and electrical systems
 - . The cylinder, hydraulic lines and connections must be tight. Worn or damaged parts must be replaced immediately with new parts.
- During operation, the hydraulic lines are under high pressure. There should be no pressure in the lines when connecting and disconnecting the hydraulic system to the vehicle system.
- When receiving and transporting the snowplough, check the machine for damage by checking its technical condition.
- It is forbidden for people to be underneath a raised snow plough, as there is a risk of being crushed by structural elements.
- Do not be in close proximity to an operating snow plough.
- Do not insert fingers or limbs between plough components during adjustment.
- The operator of a vehicle that works with a snow plough must take care that no one comes near the plough or is in close proximity to it during operation and adjustment.
- When turning or reversing, manoeuvring with a snowplough, ensure that you have adequate visibility or have the assistance of a suitably trained person.

Operating instructions









- It is forbidden for the operator to be between the vehicle and the plough when the vehicle engine is running.
- Working on slopes exceeding 8% is not permitted.
- Take special care when working on the slopes.
- Exercise extreme caution when turning and turning the vehicle with the plough suspended, both during transport and when making a turn, especially if there are people, animals or objects in the vicinity.
- A vehicle working with a snow plough should have a cab.
- The operator of a vehicle fitted with a snow plough should wear a protective waistcoat - reflective.
- Never leave the vehicle with the engine running. Before leaving the driver's seat, lower the snowplough to the ground, switch off the vehicle engine, remove the ignition key, and apply the handbrake.
- Do not use unbuttoned, dangling parts of work clothes when working, assembling, dismantling, adjusting. Keep them away from structural components that can catch them.
- Do not detach the plough from the vehicle until the vehicle engine has stopped and the key has been removed.
- After work, it is recommended that the snow plough is cleaned and washed in a wash station equipped with a wastewater treatment plant or a settling tank to neutralise the resulting effluent.
- Snow plough storage should take place in places that are protected from unauthorised persons and animals and where there is no risk of accidental injury, on a flat paved surface under a canopy.
- In the event of a breakdown, the drive carried from the vehicle must be switched off immediately.
- It is not permissible for persons under the influence of alcohol or other drugs to operate a snow plough.
- Any maintenance operations that require you to be at the snow plough should only be carried out with the plough lowered and the vehicle engine switched off.
- Snowplough control can only take place from the operator's cab of the vehicle to which the plough is connected.



Failure to comply with these rules may pose a danger to the operator and bystanders as well as damage to the snow plough. Damage resulting from non-compliance with these rules is the responsibility of the operator.

Operating instructions

2.2. Safety signs on the machine and their meaning

 <p>1.0 - Read the instruction manual before use</p>	<p>C.2.26</p>  <p>1.1 - Switch off the engine and remove the key before carrying out maintenance or repairs</p>	<p>A.6.2 + B.2.6</p>  <p>1.2.1 - Keep a safe distance from the machine. Crushing of toes or foot. Force applied from above.</p>
<p>C.2.7</p>  <p>1.5 - Do not stand close to the lift links when operating the lift</p>	<p>C.2.44</p>  <p>1.8 - Avoid exposure to pressurised liquids. Familiarise yourself with the operating instructions for maintenance operations</p>	<p>3.1 - Warning of existing pressure in the hydraulic system</p> 
	<p>2.3 - Wear a protective suit</p> 	<p>2.4 - Wear protective gloves</p> 

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

2.3 Hazards in snow plough operation

<i>Lp.</i>	<i>Threat</i>	<i>Source of danger (cause)</i>	<i>Hazard protection measures</i>
1	Overloading the musculoskeletal system (physical strain)	Working in a standing, stooping-forced position, walking, moving	Familiarisation with operating instructions, job training with regard to lifting standards for manual handling, correct lifting and jacking techniques, use of a second person, handling aids e.g. jack, winch
2	Falling on the same level (tripping, slipping, etc.).	Uneven ground, clutter - lying and standing objects, wires lying in traffic routes, slippery surfaces	Suitable work footwear, level ground, paying attention, keeping tidy, familiarisation with operating instructions
3	Impact on immovable projections of the machine	The machine, its environment	Proper positioning of the machine, safe space to move around, proper organisation of work, paying attention, familiarisation with operating instructions
4	Impact from moving objects	Discarded shredded and raked plants, random turf parts, stones	Attention, demarcation of the danger zone, prohibition of movement around the working machine, use of personal protective equipment - safety helmet, goggles, familiarisation with operating instructions
5	Sharp dangerous edges	Protruding machine components, use of hand tools	Personal protective equipment - protective gloves, work attire, paying special attention
6	Moving parts of the machine	Moving machine components, moving hydraulic cylinder pistons, no guards for moving parts	Do not move or make adjustments to the machine while it is running, take special care, use guards for moving parts, read the operating instructions
7	Weight of suspended standing machine	Incorrect assembly, aggregation, wrong machine positioning, wrong operation, leaving the suspended machine on the tractor	Exercise extreme caution, use of personal protective equipment - safety footwear, protective gloves, safe positioning of the machine, use of a second person, use of jacks, cranes, familiarisation with operating instructions
8	Microclimate - variable atmospheric conditions	Work carried out in various weather conditions	Appropriate work clothing, drinks, sunscreen, rest, familiarisation with operating instructions
9	Noise	Excessively high machine speed, damaged, loose vibrating parts	Working with an efficient machine, ongoing maintenance of the machine, proper rotation of the machine, familiarisation with operating instructions

Operating instructions

3. Purpose of the device

The straight snow plough is used for clearing snow from yards, car parks, roads and all other paved road and pavement surfaces.

The plough can be fitted to the vehicle using the following mountings:

TUZ I, TUZ II, TUZ III, EURO, SMS, ISO.

The mounts should be selected according to the vehicle and snowplough manual.

The working element is the plough blade, centrally divided into two parts, equipped with flexible (rubber) scraper bars. The plough is fitted with a hydraulic control system which, when connected, allows operation to be controlled from the vehicle operator's cab. The design of the system allows optimum adjustment of the split plough front by infinitely variable adjustment of the angle of each individual part of the plough front. The basic adjustment of the plough relative to the driving axle can be carried out in 5 positions - as shown in Fig.2.

Fulfilling the handling, operation and repair requirements according to the manufacturer's recommendations and strictly adhering to them is a prerequisite for the intended use

. The plough should only be used, operated and repaired by persons who are familiar with its detailed characteristics and who are familiar with the rules of conduct regarding health and safety.

The manufacturer stocks a wide range of snow ploughs. It also provides specialist advice on choosing the right equipment for your needs.



Any uncertainties about the intended use of the device should be clarified by contacting the snow plough manufacturer. Proper selection of the device and awareness of its intended use will increase work safety.

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

4. Description of the device

The mounted snow plough equipped with hydraulic control is designed to be used with a vehicle having a hydraulic power system in the standard of front attachments used on vehicles.

The ploughs produced are classified as mid-range snow ploughs due to their design and characteristics. The basic suspension systems found in manufactured snow ploughs are:

- Three-point attachment I, three-point attachment II, three-point attachment III
- EURO attachment
- SMS attachment

The straight snowplough is constructed from three main structural elements jointed together. The first element - **the plough headboard** made of steel elements joined together by welding, is a compact strong construction - rigid beams. The second element - the **suspension system to the vehicle** - is the central element of the plough made of steel elements connected to each other by welding. The two parts move relative to each other by means of an articulated joint and a hydraulic control system, which, when connected to the vehicle, is controlled from the operator's cab. The control system allows the plough headstock to be continuously adjusted between $+30^\circ$ and -30° . Adjustment of the account must be carried out with the plough unloaded, after lifting. The basic adjustment of the plough relative to the travel axle can be made in 3 positions - as shown in Fig.1.

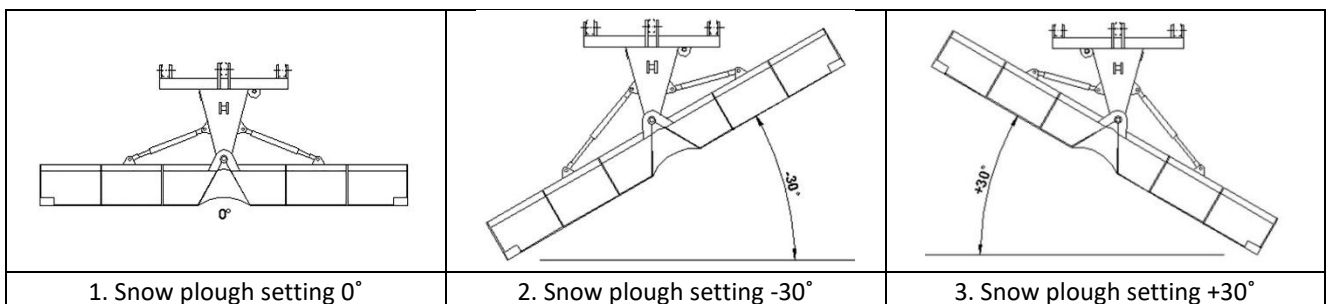


Fig. 1 Plough position in relation to the travel axle

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

4.1 Equipment and fittings

4.1.1 Basic

The basic equipment of a broken snow plough includes:

- Support foot
- Marker lights
- Hydraulic control system with hydraulic lines
- Operating instructions
- Warranty card



A portable warning-light device and a triangular plate to distinguish slow-moving vehicles are not part of the basic equipment of a snow plough. These can be purchased at extra cost from the manufacturer or from an agricultural equipment depot. Every snow plough user should have a functioning warning-light device and a triangular plate distinguishing slow-moving vehicles. Failure to wear these during transport and operation may result in an accident. The user of the machine is responsible for any damage caused in the event of an accident.

4.1.2 Additional

I. TILTABLE BLADE

As an optional solution, the manufacturer can equip the snow plough with a tilt blade.

This is a solution that can be applied to all types of snow ploughs described in Table 1. Tilting blades are available in all plough widths.

The use of a pivoting plough blade allows the service life of the plough to be significantly extended. It is a safety device that eliminates the effects of contact between the plough and obstacles encountered during operation. The innovative solution secures the plough to a height of 110mm. This solution avoids the most dangerous effects of contact with an obstacle, which often cause damage to the plough.

A diagram of the blade's operation is shown in Fig. 3. The tilt blade comprises several plough blade segments operating independently. When in contact with an obstacle, the plough blade rotates along the hinge axis. The maximum angle of rotation of the plough blade is 75°. The height of the obstacle that the plough can overcome is 110 mm. The mechanism is designed so that once the obstacle is overcome, the blade returns to its 0° starting position. The force required to swing the blade is approximately 2000daN.

Operating instructions

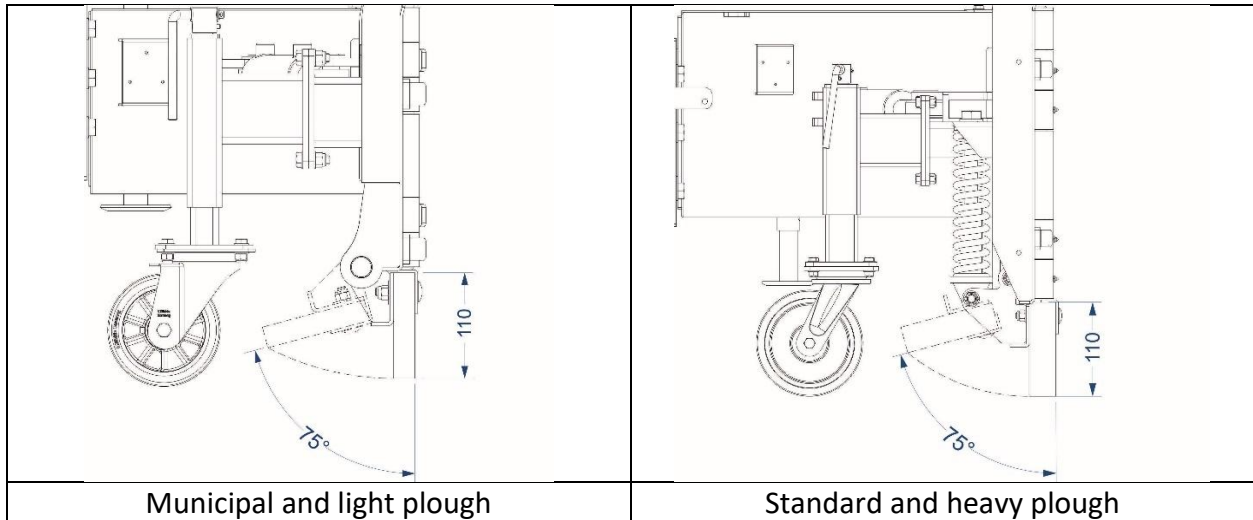


Fig. 2 Operating diagram of tiltable blade

II. TRANSVERSE GROUND COPYING

As an option, the manufacturer can equip the snow plough with lateral terrain copying. This is a function where the plough adapts to the ground contours. The plough has additional design elements that allow it to rotate around the axis of travel direction. This allows the plough blade to better adapt to the ground. Copying is a very effective solution to reduce labour costs when working on uneven ground. The ground adaptation of the plough eliminates the need for multiple passes and, in many cases, allows accurate work. The range of lateral ground copying is $\pm 8^\circ$.

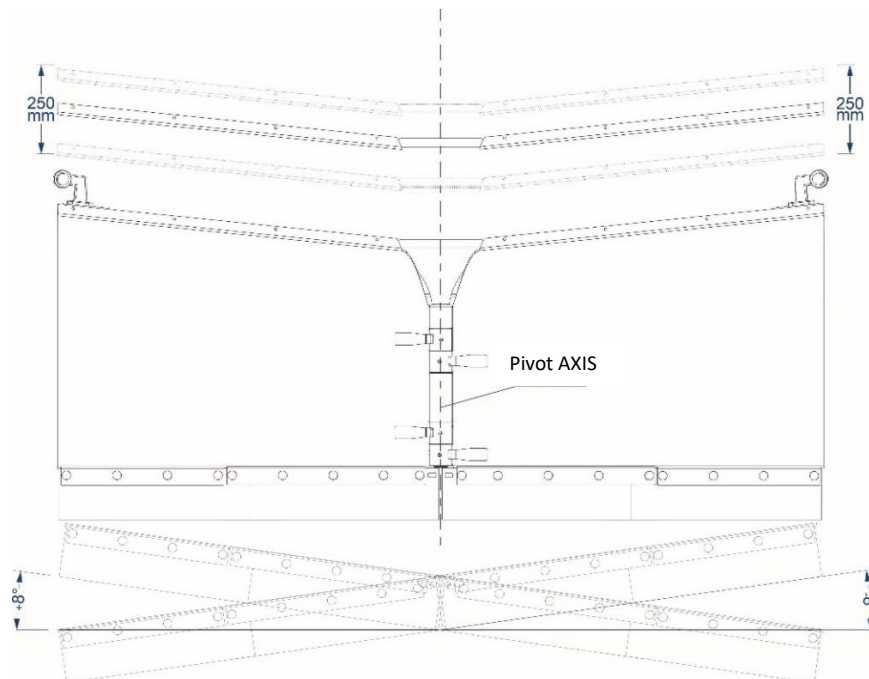


Fig. 4 Cross-cutting of the terrain (front view of vehicle with plough)

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

III. FRONT END LIFTING SYSTEM

As an option, the manufacturer can equip the snow plough with a front-end lifting system. This is a function that involves stepless lifting of the front end from the operator's cab. Fully hydraulic control. Allows better adaptation of the plough blade to the ground.

The lift range for ploughs is;

Light ploughs - 400 mm

Standard ploughs - 535 mm

Heavy ploughs - 540 mm

IV. SUPPORTING WHEELS

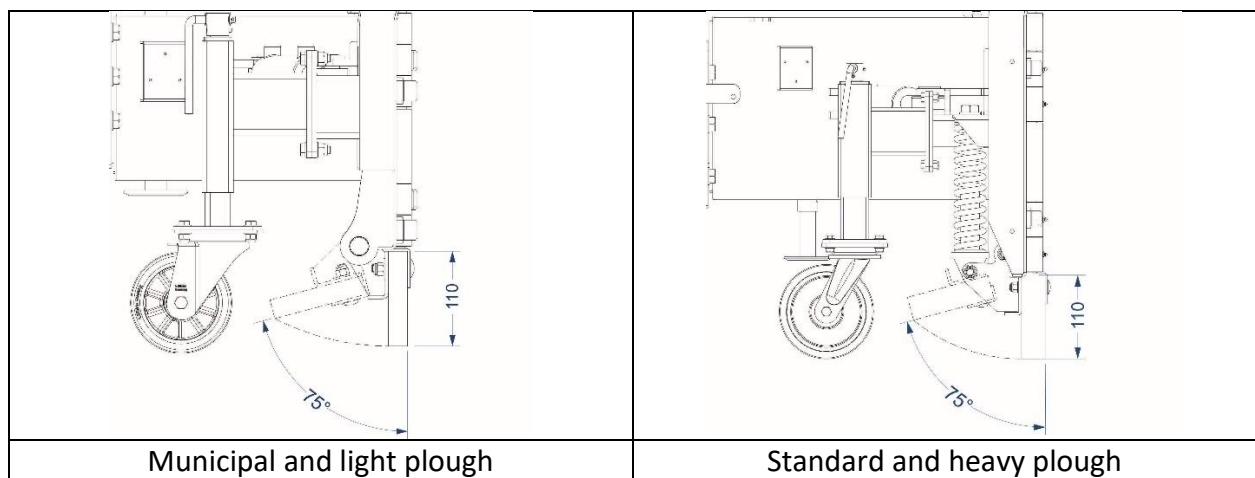


Fig. 5 Snow plough support wheels

Additional equipment consists of two support wheels mounted on both sides of the snow plough face on support plates. The main purpose of the support wheels is to reduce operating resistance, reduce wear of the plough blade rubber and stabilise operation through better adjustment of the blade to the ground.

It is a solution that influences less work resistance and thus reduces the cost of working with a snowplough.

The plough headstock design has special brackets to which the support wheels are attached. Additional height adjustment allows precise setting of the clearance between the ground and the plough blade.

Attention:

ALL SNOWPLOWH ACCESSORIES ARE AVAILABLE AT FROM THE MANUFACTURER FOR AN ADDITIONAL CHARGE.

Operating instructions

4.2 Technical characteristics

Table 1 TECHNICAL DATA OF MUNICIPAL STRAIGHT PLOUGHS

<i>Lp.</i>	<i>Specification</i>	<i>J.m.</i>	<i>Parameter</i>			
1.	Snowplough type	-	CPK120	CPK150	CPK180	CPK200
2.	Machine type	-	Suspended middle class			
3.	Overall dimensions (working position 0° and transport)					
	Length	[mm].	525	525	525	525
	Width	[mm].	1200	1500	1800	2000
	Height	[mm].	700	700	700	700
4.	Snowplough weight	[kg]	86	105	123	135
5.	Working width for 30° position	[mm].	1140	1340	1640	1840
6.	Working width for 0° position	[mm].	1320	1152	1820	2020
7.	Setting the operating position	[°]	+30° ÷ -30°			
8.	Load capacity of the carrier (vehicle)	[kg]	6 000		8 000	
9.	Working position adjustment control	-	Hydraulic control system			
10.	Working pressure of the hydraulic system	[MPa]	16 ÷ 20			
11.	Transport clearance	[mm].	300			
12.	Working speed	[km/h]	4 ÷ 12			
13.	Transport speed	[km/h]	In accordance with the vehicle regulations			
14.	Class of mated tractor	[kN].	min14			
15.	Number of handlers	[pcs.]	1			
16.	Vehicle attachment type - category acc. to DIN ISO 730-1	TUZ	I or II		II or III	
17.	Vehicle power requirement	[KM]	up to 48	up to 120		up to 240

*) - assuming the permissible load capacity of the vehicle lifting system

Operating instructions

CPK - Snow Plough Straight Communal
 CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
 CPCH - Snow Plough Straight Heavyweight

Table 2 TECHNICAL DATA OF STRAIGHT LIGHTWEIGHT SNOW PLOUGHS

<i>Lp.</i>	<i>Specification</i>	<i>J.m.</i>	<i>Parameter</i>		
18.	Snowplough type	-	CPLH150	CPLH180	CPLH200
19.	Machine type	-	Suspended middle class		
20.	Overall dimensions (working position 0° and transport)				
	Length	[mm].	680	680	680
	Width	[mm].	1500	1800	2000
	Height	[mm].	750	750	750
21.	Snowplough weight	[kg]	145	165	190
22.	Working width for 30° position	[mm].	1330	1560	1730
23.	Working width for 0° position	[mm].	1510	1800	2010
24.	Setting the operating position	[°]	+30° ÷ -30°		
25.	Load capacity of the carrier (vehicle)	[kg]	6 000	8 000	
26.	Working position adjustment control	-	Hydraulic control system		
27.	Working pressure of the hydraulic system	[MPa]	16 ÷ 20		
28.	Transport clearance	[mm].	300		
29.	Working speed	[km/h]	4 ÷ 12		
30.	Transport speed	[km/h]	In accordance with the vehicle regulations		
31.	Class of mated tractor	[kN].	min14		
32.	Number of handlers	[pcs.]	1		
33.	Vehicle attachment type - category acc. to DIN ISO 730-1	TUZ	I or II	II or III	
34.	Vehicle power requirement	[KM]	up to 48	up to 120	up to 240

*) - assuming the permissible load capacity of the vehicle lifting system

Operating instructions

Table 3 TECHNICAL CHARACTERISTICS OF STRAIGHT STANDARD SNOW PLOUGHS

<i>Lp.</i>	<i>Specification</i>	<i>J.m.</i>	<i>Parameter</i>			
35.	Snowplough type	-	CPSH200	CPSH220	CPSH260	CPSH290
36.	Machine type	-	Suspended middle class			
37.	Overall dimensions (working position 0° and transport)					
	Length	[mm].	1068	1068	1068	1068
	Width	[mm].	2000	2200	2600	2900
	Height	[mm].	980	980	980	980
38.	Snowplough weight	[kg]	284	311	337	370
39.	Working width for 30° position	[mm].	1860	1970	2380	2520
40.	Working width for 0° position	[mm].	2020	2220	2630	2910
41.	Setting the operating position	[°]	+30° ÷ -30°			
42.	Load capacity of the carrier (vehicle)	[kg]	6 000		8 000	
43.	Working position adjustment control	-	Hydraulic control system			
44.	Working pressure of the hydraulic system	[MPa]	16 ÷ 20			
45.	Transport clearance	[mm].	300			
46.	Working speed	[km/h]	4 ÷ 12			
47.	Transport speed	[km/h]	In accordance with the vehicle regulations			
48.	Class of mated tractor	[kN].	min14			
49.	Number of handlers	[pcs.]	1			
50.	Vehicle attachment type - category acc. to DIN ISO 730-1	TUZ	I or II		II or III	
51.	Vehicle power requirement	[KM]	up to 48	up to 120		up to 240

*) - assuming the permissible load capacity of the vehicle lifting system

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

Table 4 TECHNICAL DATA FOR STRAIGHT HEAVYWEIGHT SNOW PLOUGH

<i>Lp.</i>	<i>Specification</i>	<i>J.m.</i>	<i>Parameter</i>		
52.	Snowplough type	-	CPCH260	CPCH290	CPCH330
53.	Machine type	-	Suspended middle class		
54.	Overall dimensions (working position 0° and transport)				
	Length	[mm].	1115	1150	1150
	Width	[mm].	2600	2900	3300
	Height	[mm].	1082	1082	1082
55.	Snowplough weight	[kg]	480	510	545
56.	Working width for 30° position	[mm].	2280	2540	2910
57.	Working width for 0° position	[mm].	2610	2940	3310
58.	Setting the operating position	[°]	+30° ÷ -30°		
59.	Load capacity of the carrier (vehicle)	[kg]	6 000	8 000	
60.	Working position adjustment control	-	Hydraulic control system		
61.	Working pressure of the hydraulic system	[MPa]	16 ÷ 20		
62.	Transport clearance	[mm].	300		
63.	Working speed	[km/h]	4 ÷ 12		
64.	Transport speed	[km/h]	In accordance with the vehicle regulations		
65.	Class of mated tractor	[kN].	min14		
66.	Number of handlers	[pcs.]	1		
67.	Vehicle attachment type - category acc. to DIN ISO 730-1	TUZ	I or II	II or III	
68.	Vehicle power requirement	[KM]	up to 48	up to 120	up to 240

*) - assuming the permissible load capacity of the vehicle lifting system

Operating instructions

4.3 Forces acting on the snow plough

The extremes that occur during snow clearing are comparable to the phenomenon of a collision. To facilitate snow clearing, the weight of the vehicle - the load capacity of the carrier - is very important. However, it is important to be aware of the forces at work when operating a heavy vehicle with a suspended snowplough. Familiarisation and study of the operating instructions will ensure safe use and reduce the consequences of operating errors - reducing the risk.

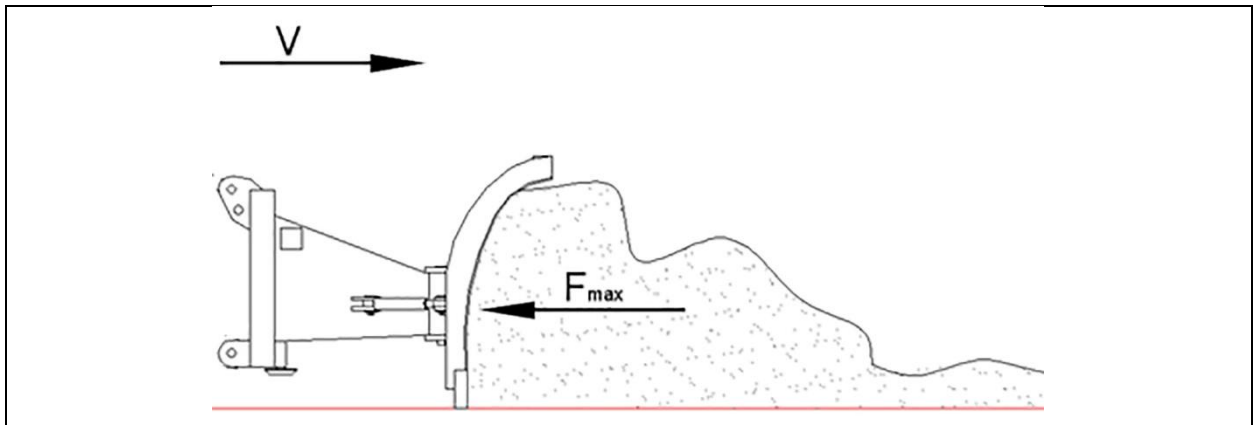


Fig. 6 Forces acting on a snowplough

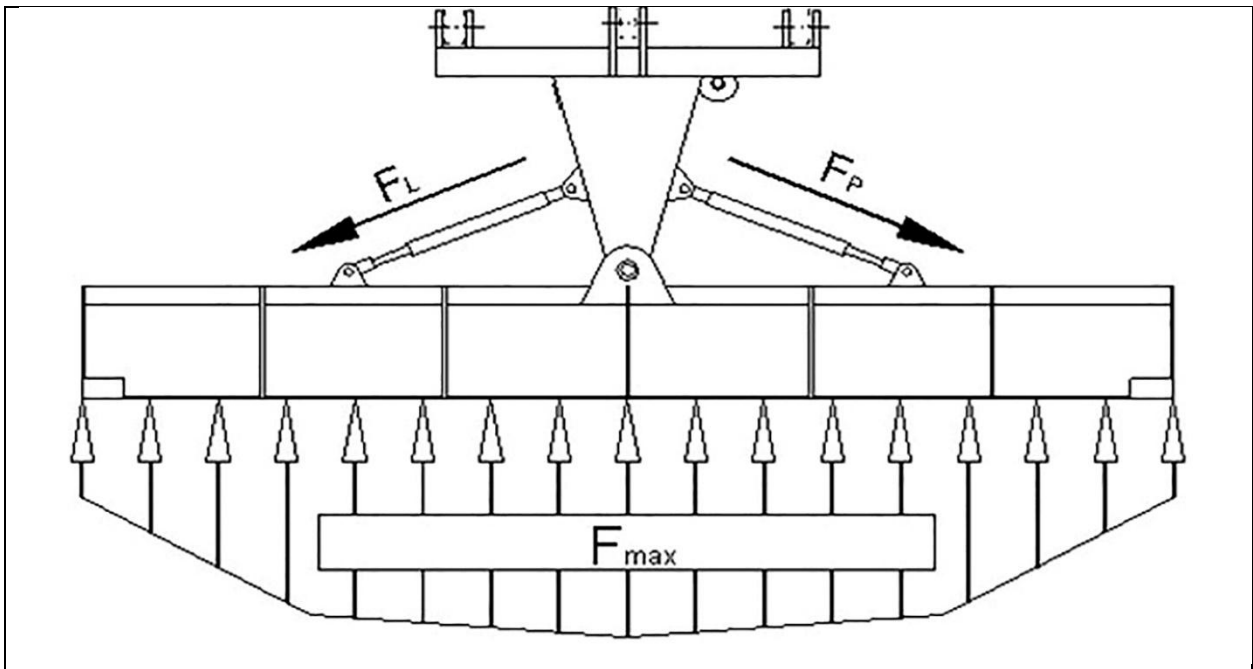


Fig. 7 Force distribution of the permissible load on a snow plough with hydraulic cylinders and 0° working setting

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

Braking distance S [m]	Vehicle speed V [km/h]		
	5	10	20
0,1	2	11	30
0,2	1	6	15
0,5	0,5	2,5	6
1,0	0,3	1	2,5

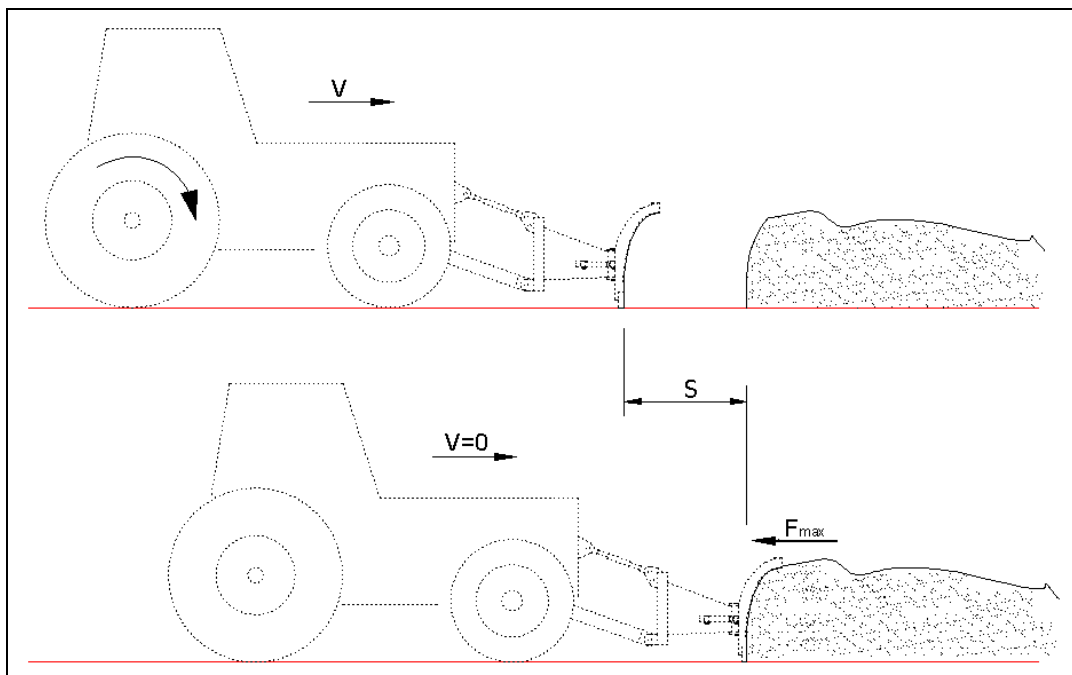


Figure 6 Diagram of vehicle braking on contact with an obstacle.



The figures given for the forces acting on the vehicle-plough system require a high level of skill on the part of the operator and speak to an awareness of the dangers involved when working with a snowplough.

It is very important to select the speed of the vehicle in a suitably safe manner so that the work being carried out does not endanger the environment or the operator - the vehicle operator.

Operating instructions

5 Use of the device

5.1 Snowplough installation



Ensure that the vehicle and plough mounting components are properly matched to each other to guarantee safe installation and operation. In case of ambiguity, absolutely contact the vehicle or plough manufacturer.

Due to the need to connect the three plough systems to the vehicle, assembly should be carried out in the following order:

I. Assembly of the vehicle and plough mechanical system.

Depending on the type of three-point linkage, take care of the original protection. Check the wear condition of the connecting elements: pins and pivots, each time they are fitted.

II. Assembly of the power hydraulics system

A snowplough with a hydraulic control system is equipped with hoses that must be connected to the vehicle's supply system connections. Particular attention should be paid to the routing of the hoses and the cleanliness of the hydraulic connectors.

IV. Installation of the power supply system for the plough marker lights

The plough has a 7 vertical farm trailer socket (PN 83/S-76055), which must be connected via an extension cable to the vehicle's power supply. Attention must be paid to the routing of electrical cables at the moving parts of the plough structure and the hitch.



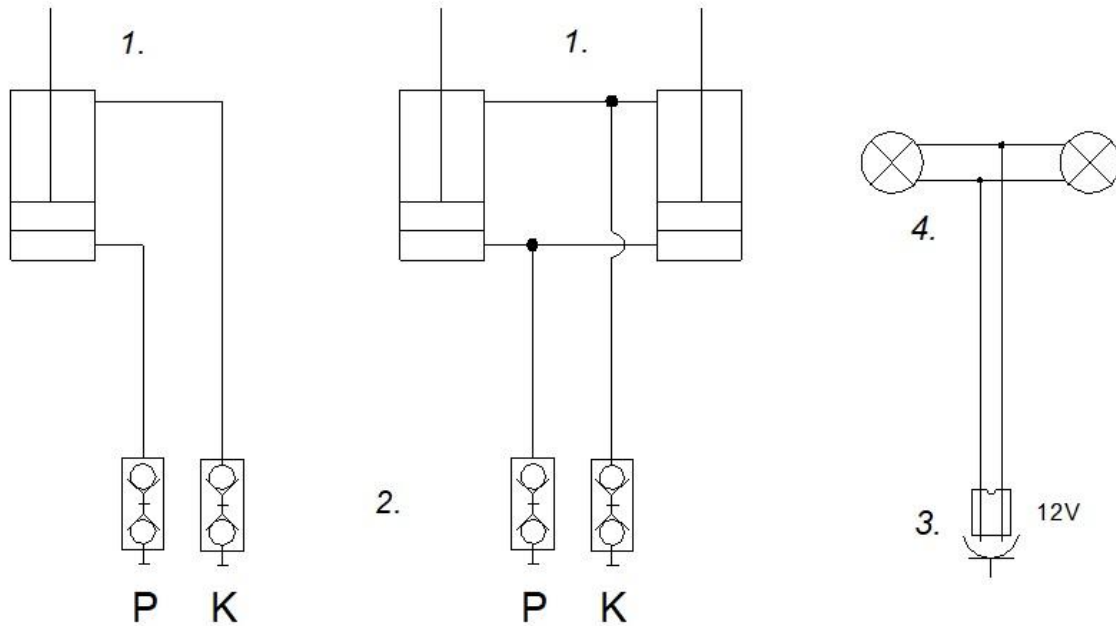
Removal of the snowplough is done in reverse order, with special safety in removing the mechanical system that separates the plough from the vehicle.

Operating instructions

5.2 Hydraulic control system

The snow plough is controlled from the vehicle operator's cab. The snow plough is equipped with power hydraulic system tips, which, when connected to the vehicle's hydraulic system, allow smooth control of the plough's operation.

Fig. 7 Hydraulic and electrical systems of straight ploughs



(1) - Hydraulic cylinder; (2) - Quick couplings; (3) - Electrical socket; (4) - Marker lamps

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

6. Operation and maintenance



Any snow plough operation may be carried out by the operator of the vehicle to which the plough is to be fitted provided he is qualified to operate that vehicle.



The snow plough must only be operated after reading its operating instructions.

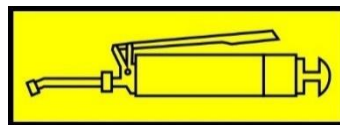
6.1 After-service operation

Each time the snowplough is finished working, it should be cleaned and placed on a flat, firm surface. After these procedures, the connections of the parts and assemblies should be inspected. Replace damaged and worn parts with new or reconditioned ones. All bolted connections should be checked and loose ones tightened. All safety signs placed on the plough headstock, marker lights, warning lights, the triangular plate distinguishing slow-moving vehicles must be kept clean.

6.2 Lubrication of moving connections

Basic maintenance includes lubrication of the moving joints of the snow plough. All moving parts of the plough should be protected once a season with solid lubricant ŁT-42. Before lubrication, the connections should be cleaned of dirt and old grease.

If there are signs of wear, the worn parts should be replaced with new ones without fail.



Symbol for lubrication points marked on the product

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

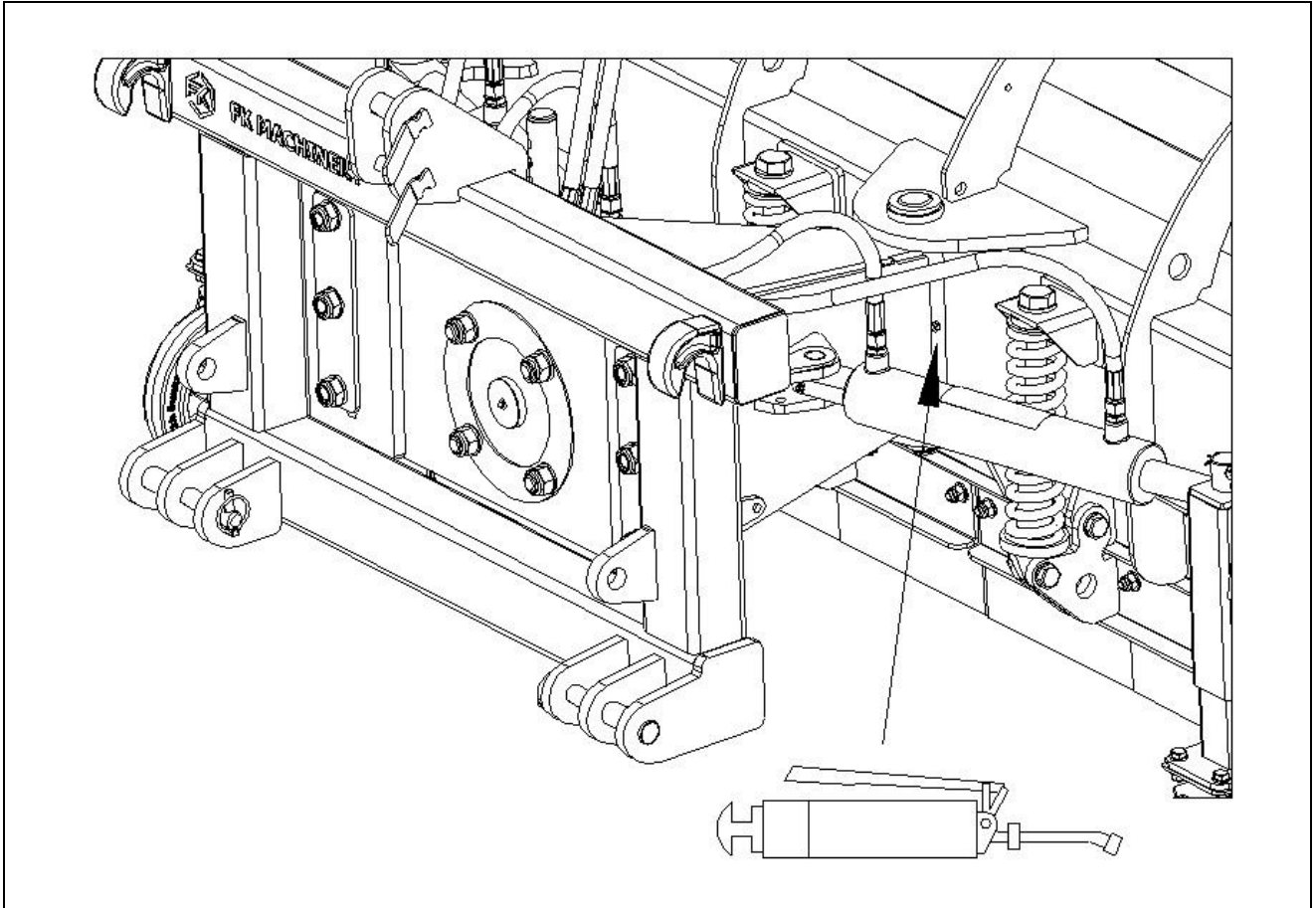


Fig. 8 All straight ploughs - Lubrication point of the linkage connection.

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

6.3 Post-seasonal maintenance

Includes all the steps listed under: handling after work. In addition, the snowplough should be stored under a canopy on a flat and firm surface. Attention should be paid to the tightness of the paintwork. If there are any defects, these areas should be cleaned and the defects filled by applying a fresh coat of protective paint.



In the event of a leak in the hydraulic system, it is essential to replace the affected system components and assemblies in order to prevent environmental contamination.

Hydraulic lines, regardless of external condition, must be replaced after a period of 5 years.

6.4 Deletion, environment

If the machine is completely worn out to the point where it can no longer be used, it must be disposed of. This also applies to ongoing repairs and the replacement of damaged parts. The machine must be thoroughly cleaned for this purpose. Drain the operating oils and dispose of them. Then dismantle the machine, separating the parts according to the type of materials used. The segregated parts must be taken to a scrap metal collection point or for disposal.

The machine is a fully environmentally friendly product. The materials used in production are 97% recyclable. Dispose of used machine parts in accordance with local environmental regulations. Throughout its lifetime, care must be taken to avoid oil spills that may contaminate the environment.

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

7. Spare parts catalogue

All bucket parts are available from the manufacturer.

Purchases can be made by stating the name of the device, factory number and date of manufacture.

The following will be helpful: photos of the appliance, a photo of the required (defective) part, a photo of the rating plate, a purchase document, or a symbol from the user manual.

The aforementioned should be sent with the request by e-mail or other means of communication attached to the message.



The manufacturer reserves all rights to the instructions for use.

Due to machine upgrades and developments, the information presented in the manual refers to the specific version and edition.



The catalogue does not include commercially available normals that can be purchased in industrial or agricultural shops.

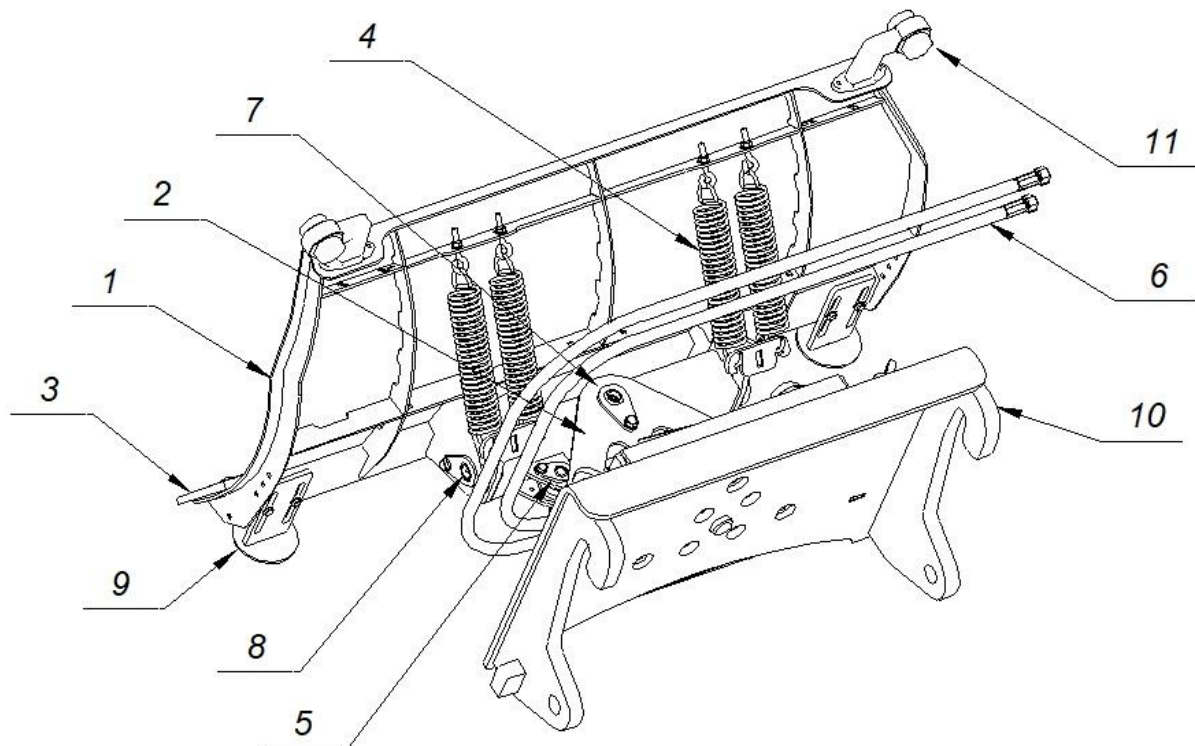
The normals (bolts, nuts, pins, etc.) used interchangeably must not be of a different strength than those used by the manufacturer.

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

Fig. 9 Straight communal snowplough - CPK



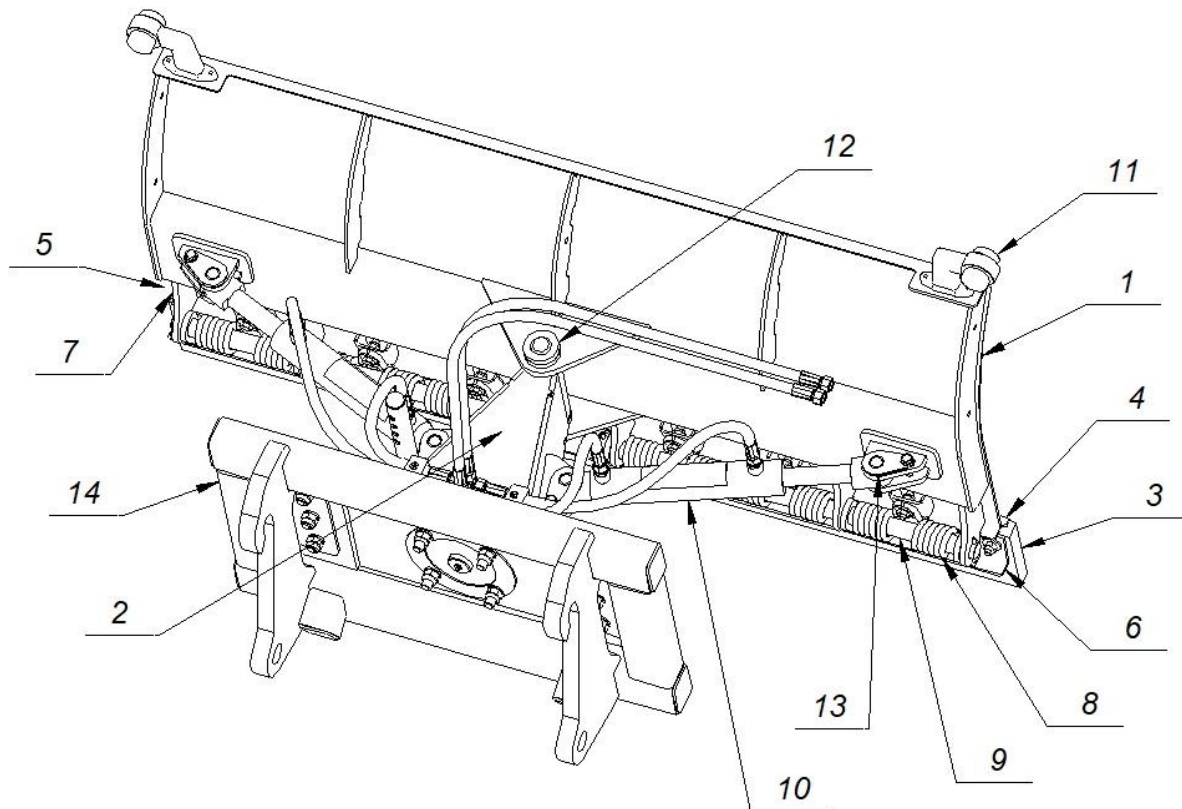
- (1) - Front end; (2) - Connector; (3) - Scraper bar; (4) - Spring;
- (5) - Cylinder pins; (6) - Hydraulic system; (7) - Pivot pin;
- (8) - Tilt pin; (9) - Footplate; (10) - Mounting frame; (11) - Lamps;

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

Fig. 10 Light Straight Snowplough - CPLH



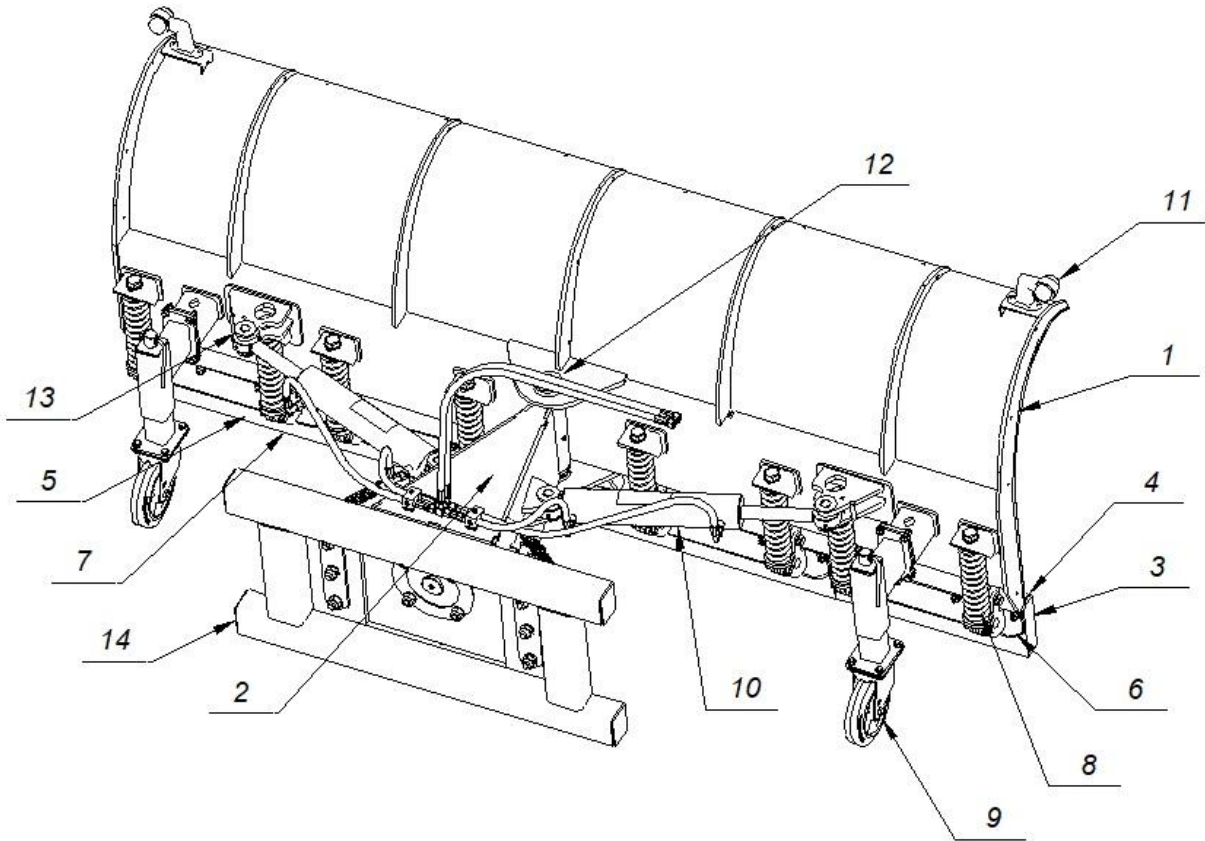
- (1) - Header; (2) - Connector; (3) - Scraper bar; (4) - Left pressure bar;
 (5) - Right-hand pressure bar; (6) - Left-hand tilt bar; (7) - Right-hand tilt bar;
 (8) - Spring; (9) - Axle; (10) - Hydraulic system ; (11) - Lamps;
 (12) - Pivot pin; (13) - Actuator pins; (14) - Mounting frame;

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

Fig. 11 Standard straight snowplough - CPSH
Straight heavy snowplough - CPCH

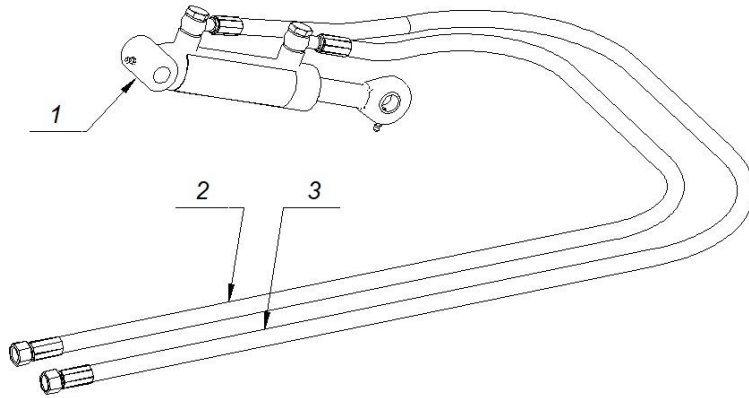


- (1) - Header; (2) - Connector; (3) - Scraper bar; (4) - Left pressure bar;
 (5) - Right-hand pressure bar; (6) - Left-hand tilt bar; (7) - Right-hand tilt bar;
 (8) - Spring; (9) - Support wheel; (10) - Hydraulic system ; (11) - Lamps;
 (12) - Pivot pin; (13) - Actuator pins; (14) - Mounting frame;

Operating instructions

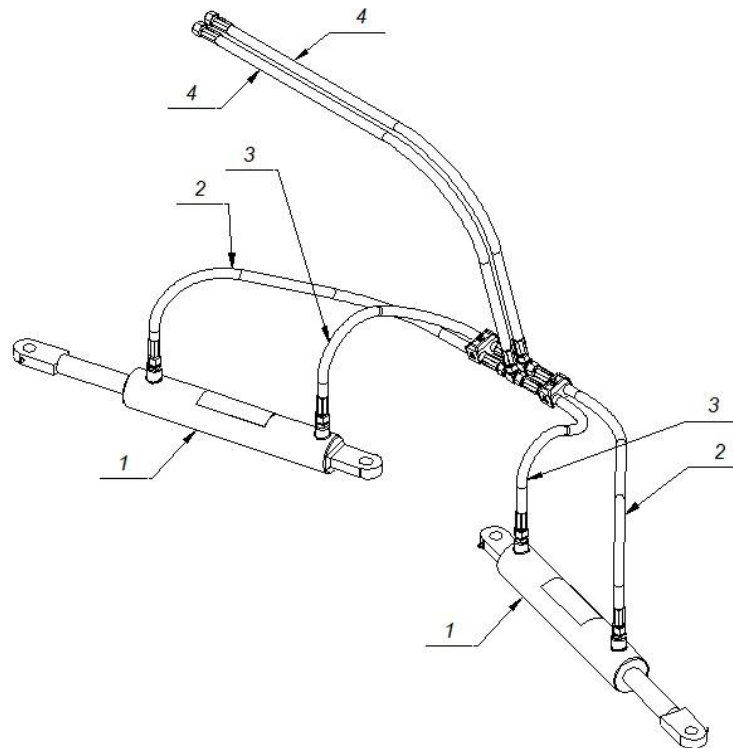
7.1 Hydraulic supply components

Fig. 12 Plough with one hydraulic cylinder



(1) - Hydraulic cylinder; (2) - Hydraulic line; (3) - Hydraulic hose;

Fig. 13 Plough with two hydraulic cylinders



(1) - Hydraulic cylinder; (2) - Hydraulic line;
(3) - Hydraulic line; (4) - Hydraulic hose;

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

8. Guarantee

WARRANTY CARD

Serial No.	Type
Year of construction	KJ

Under the guarantee, the manufacturer undertakes to repair free of charge any physical defects discovered during the guarantee period, which is valid for 12 months from the date of sale.

The manufacturer is relieved of any liability under the guarantee in the event of:

- Mechanical damage to the machine after handover to the user;
- Improper operation, maintenance, storage of the product, in particular non-compliance with the instructions for use;
- Carrying out repairs by unauthorised persons without the manufacturer's consent to do so;
- Making structural changes without consulting the manufacturer;

The guarantee card is valid if it bears the signature of the dealer and the date of sale confirmed by the company stamp of the retailer. It must not contain any deletions or corrections by unauthorised persons.

A duplicate warranty card can be issued upon written request upon presentation of proof of purchase by the user.

In the event of an unfounded call for warranty repair, the costs involved will be borne by the user.

Complaints must be lodged by the user within 14 days of the damage occurring, directly with the dealer.

The manufacturer provides warranty service within 14 days from the date of notification to the date of repair.

The guarantee shall be extended by the repair time from the date of notification until the service has been provided, if the defect has prevented the use of the machine.

The warranty does not cover the machine's hydraulic lines.

Date of sale: _____
(day, month, year)

(signature and stamp of the service)

Operating instructions

RECORDS OF WARRANTY REPAIRS

To be filled in by the manufacturer

Date of complaint: _____

Scope of repair and parts replaced: _____

Date the fault was rectified:

The guarantee has been extended until:

(signature and stamp of the service)

Date of complaint: _____

Scope of repair and parts replaced: _____

Date the fault was rectified:

The guarantee has been extended to: _____

(signature and stamp of the service)

Date of complaint: _____

Scope of repair and parts replaced: _____

Date of fault rectification: _____

The guarantee has been extended to: _____

(signature and stamp of the service)

Date of complaint: _____

Scope of repair and parts replaced: _____

Date of fault rectification: _____

The guarantee has been extended to: _____

(signature and stamp of the service)

Operating instructions

9. Declaration of conformity

EC Declaration of Conformity

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

Manufacturer:

name: KOŁASZEWSKI Sp. z o.o.

address:77-100 Bytów ul. Lęborska 22

The undersigned hereby declares that the product:

make (trade name): **STRAIGHT SNOWPLOUGHS**

type/model: **CPK, CPSH, CPCH, CPLH**

serial number (if used):,

meets the requirements of the following European directives:

- **Machinery Directive 2006/42/EC** of 17.05.2006. (OJ L 157 of 9.06.2006 p.24) and its amendment 2009/127/EC of 21.10.2009. (OJ L 310, 25.11.2009 p.29).

meets the requirements of the following harmonised standards:

- **PN-EN ISO 15583-1:2009** Winter service equipment - Snow ploughs - Part 1: Product description and requirements
- **PN-EN ISO 4413:2011** Hydraulic actuators and controls -- General principles and safety requirements for systems and their components
- **PN-EN ISO 14120:2016-03** Safety of machinery. General principles for design. Risk assessment and risk reduction
- **PN-ISO 11684/1998** Safety signs and hazard pictograms
- **EN ISO 13854/2020** Safety of machinery. Minimum clearances to prevent crushing of parts of the human body and meets the requirements of the other technical standards and specifications used

*Compliance with the requirements of the directives and standards was established on the basis of tests carried out by:
 SIMP Association of Polish Mechanical Engineers and Technicians in Gdańsk.
 Tests carried out by: Zbigniew Myszka, M.Sc. - Expert of SIMP No. cert. 9763*

.....
place, date signature of authorised person name

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight

QUALITY POLICY STATEMENT

The goal of Kołaszewski limited liability company is to provide the services and manufactured products at a highest level by:

- implementation of projects in accordance with the expectations and requirements of Customers,
- communication with the Customer and after-sales service culture,
- compliance with standards and regulations, respecting the natural environment.

**Quality Management System in the company Kołaszewski Sp.z o.o. (Ltd.)
is compliant with ISO 9001:2015.**

Strategic objectives of Kołaszewski Sp. z o.o.:

- operating business providing the highest quality products and services in the domestic and foreign markets
- Gaining and retaining of Customer confidence to offered products/services
- understanding of the quality objectives and requirements in all departments of the company
- continuous improvement of the Quality Management System.

**Quality Policy contained in its objectives and Quality Management System documentation
is known and used by all employees of the company.**

The strategic objectives are achieved by:

- continuous improvement of the qualifications and skills of employees
- permanent equipping of the machine park with modern machinery
- observance of accepted standards in customer service
- continuous improvement of customer service and keeping of pro-customer attitude
- smooth, steady flow of internal information, organizational meetings
- Involvement of management in the implementation and continuous improvement of the Quality Management

**Measurable operational objectives of the quality policy are determined annually during
the review of the Quality Management System**

Responsible for implementation

Confirmed

Edition V from 02.05.2023

PREZES
Izabela Kołaszevska-Gabry
Izabela Kołaszevska-Gabry

WICEPREZES
Piotr Kołaszewski
Piotr Kołaszewski

Operating instructions

CPK - Snow Plough Straight Communal
CPLH - Snow Plough Straight Lightweight

CPSH - Snow Plough Straight Standard
CPCH - Snow Plough Straight Heavyweight