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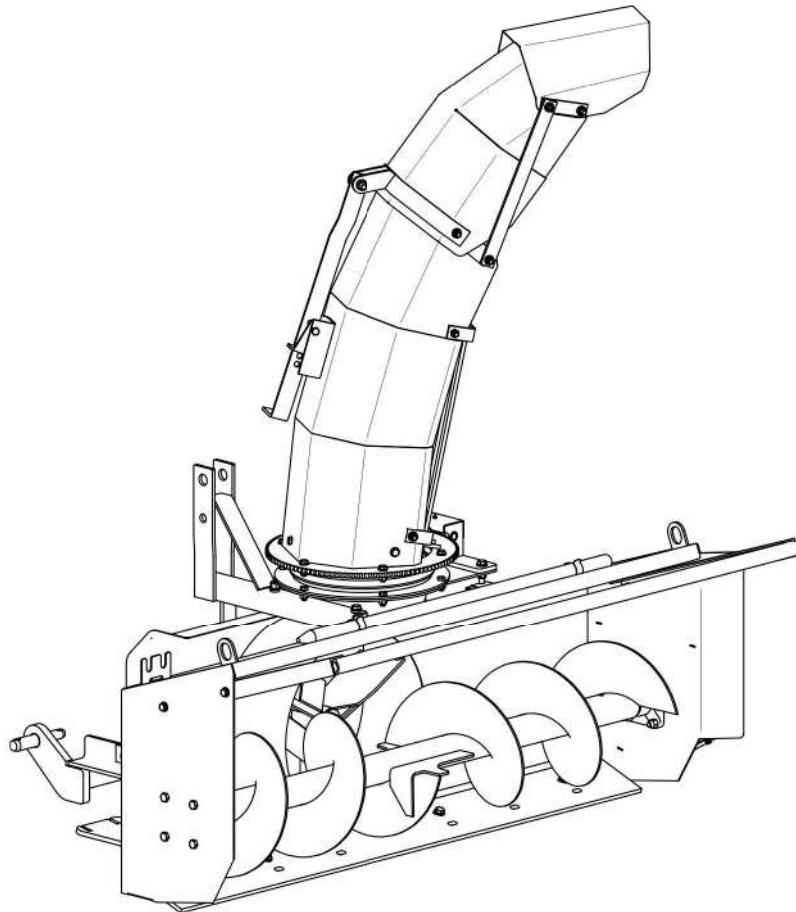
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OPERATOR'S MANUAL

SNOW BLOWER

PRONAR OW1.5

TRANSLATION OF THE ORIGINAL INSTRUCTIONS



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INTRODUCTION

Information contained herein is current at date of publication. As a result of improvements, some numerical values and illustrations contained in this publication may not correspond to the factual specification of the machine supplied to the user. The manufacturer reserves the right to introduce design changes in machines produced that facilitate operation and improve the quality of their work, without making minor amendments to this Operator's Manual.

This Operator's Manual is an integral part of the machine's documentation. Before using the machine, the user must carefully read this Operator's Manual and observe all recommendations. This guarantees safe operation and ensures malfunction free work of the machine. The machine is designed to meet obligatory standards, documents and legal regulations currently in force.

The manual describes the basic safety rules and operation of the machine. If the information contained in the Operator's Manual needs clarification then the user should refer for assistance to the sale point where the machine was purchased or to the Manufacturer.

MANUFACTURER'S ADDRESS:

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SYMBOLS APPEARING IN THIS OPERATOR'S MANUAL

Information, descriptions of danger and precautions and also recommendations and prohibitions associated with user safety instructions are marked:



and also preceded by the word "**DANGER**". Failure to observe the instructions may endanger the machine operator's or other person's health or life.

Particularly important information and instructions, the observance of which is essential, are distinguished in the text by the sign:



and also preceded by the word "**ATTENTION**". Failure to observe the instructions may lead to damage to the machine as a result of improper operation, adjustment or use.

In order to focus the user's attention on the need to perform maintenance, the relevant section of the Operator's Manual is marked with the pictogram:



Additional tips and advice for machine operation are marked:



and also preceded by the word „**TIP**”.

DIRECTIONS USED IN THIS OPERATOR'S MANUAL

Left side – side to the left hand of the operator facing in the direction of machine's forward travel.

Right side – side to the right hand of the operator facing in the direction of machine's forward travel.



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EC DECLARATION OF CONFORMITY OF THE MACHINERY

PRONAR Sp. z o.o. declares with full responsibility, that the machine:

Description and identification of the machinery	
Generic denomination and function:	Snowblower
Type:	OW1.5
Model:	–
Serial number:	
Commercial name:	Snowblower PRONAR OW1.5

to which this declaration relates, fulfills all the relevant provisions of the Directive **2006/42/EC** of The European Parliament and of The Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (Official Journal of the EU, L 157/24 of 09.06.2006).

The person authorized to compile the technical file is the Head of Research and Development Department at PRONAR Sp. z o.o., 17-210 Narew, ul. Mickiewicza 101A, Poland.

This declaration relates exclusively to the machinery in the state in which it was placed on the market, and excludes components which are added and/or operations carried out subsequently by the final user.

Narew, the 2010 -04- 07

Place and date

Z-CA DYREKTORA
d/s technicznych
członka zarządu
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*Full name of the empowered person
position, signature*

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SECTION

1

BASIC INFORMATION

1.1 IDENTIFICATION

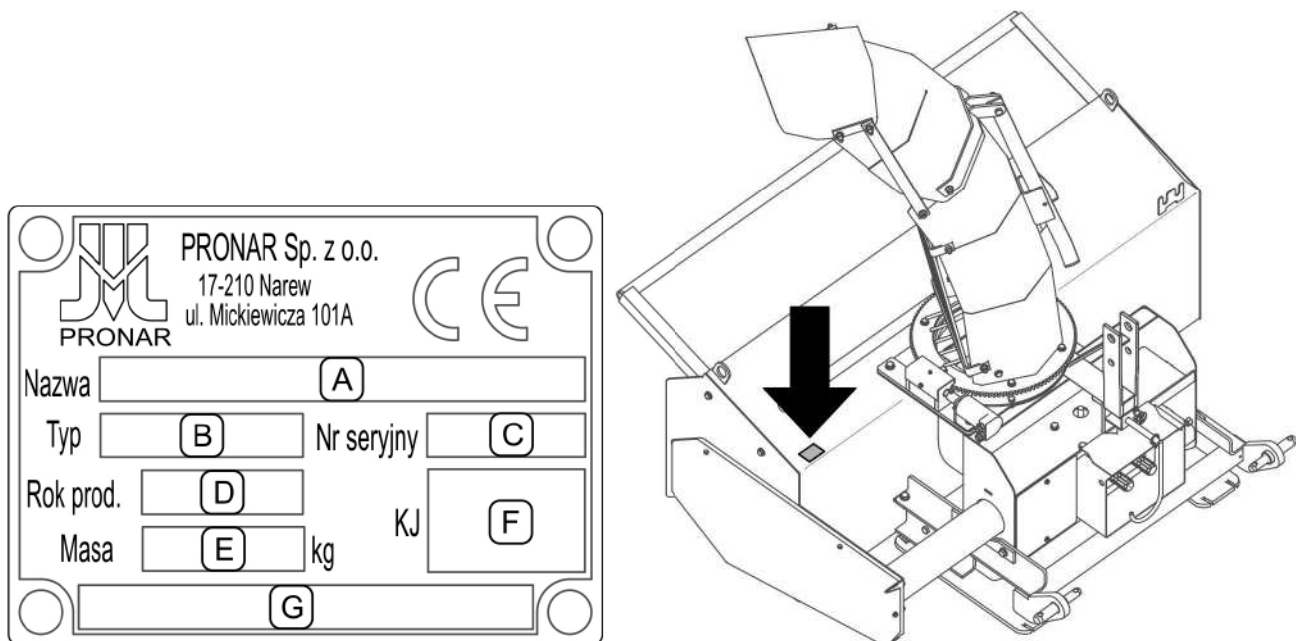


FIG. 1.1 Location of the data plate

Meaning of data plate items (FIG. 1.1):

- A - machine name
- B – type,
- C – serial number
- D – year of manufacture
- E – machine tare weight [kg]
- F – Quality Control stamp
- G – basic technical parameters

Serial number is stamped on the data plate. Data plate is located on the left side of the guide casing (FIG. 1.1). When buying the machine, check the serial number That corresponds with That Indicated in the Warranty Book, in the sales documents and in the Operator's Manual.

1.2 PROPER USE

Rotary snow blower is used to remove snow, ice blocks from flat surfaces by ejecting on the road shoulder. It is designed for mounting on the tractor front (driving forward) or rear (driving backwards) three-point linkage which meets the requirements set out in Table 1.1.

Using it as intended also involves all actions connected with the safe and proper operation and maintenance of the machine. Due to the above, the user is obliged to:

- carefully read the *OPERATOR'S MANUAL* and comply with its recommendations,
- understand the machine's operating principle and how to operate it safely and correctly,
- comply with general safety regulations while working,
- prevent accidents,
- comply with road traffic regulations.

The machine may only be used by persons, who:

- are familiar with the contents of this publication and with the contents of the tractor Operator's Manual,
- have been trained in machine operation and safe working Conditions of,
- have the required authorisation to drive and are familiar with the road traffic regulations and transport regulations.

IMPORTANT!



The machine must not be used for purposes other than those for which it is intended, in particular for:

- as a snow plough when the drive is disengaged
- for Transporting people and animals.

Do not operate the rotary snow blower if bystanders, animals or buildings are in the snow discharge area.

TAB. 1.1 Agricultural tractor's requirements

	UNIT	REQUIREMENTS
Implement suspension system (TPL - three-point linkage)	-	category I or II According to ISO 730-1 front or rear with a floating position
Power take-off shaft (PTO)		
Required power of PTO shaft	kW/Horsepower	18 - 44 / 25 - 60
Rotation speed	RPM	540
Number of splines on shaft	item	6
Rotation direction	-	right or left
Hydraulic system		
Hydraulic oil	-	HL 32
Nominal pressure in the hydraulic system	MPa	16
Number of hydraulic sockets	item	2 socket of one section with the possibility of changing the direction of oil circulation
Other requirements		
Beacon light	-	orange light

1.3 OPTIONAL EQUIPMENT

The equipment includes:

- The operator's manuals;
- Warranty Book
- PTO shaft 4R-302-0-BA-K401 (Lmin 460 mm, Lmax 690 mm)
or 4R-302-1-BA-K401 (Lmin 510 mm, Lmax 790 mm)

1.4 WARRANTY TERMS

PRONAR Sp. z o.o., Narew guarantees the reliable operation of the machine when it is used according to its intended purpose as described in the *OPERATOR'S MANUAL*. Defects discovered during the warranty period will be removed by the Service under warranty. The repair period is Specified in the *WARRANTY BOOK*.

The guarantee does not apply to those parts and sub-assemblies of the machine, which are subject to wear in normal usage conditions, regardless of the warranty period. Consumables include the following parts/sub-assemblies:

- scraping blade,
- bearings,
- skids.

The warranty service only applies to such cases as: mechanical damage, which is not the user's fault, factory defects of parts, etc.

In the event of damage arising from:

- mechanical damage which is the user's fault,
- caused by road accidents,
- by inappropriate use, adjustment or maintenance, use of the machine for purposes other than those for which it is intended,
- use of damaged or malfunctioning machine,
- repairs carried out by unauthorised persons, improperly carried out repairs,
- making unauthorised alterations to machine design,

the user will lose the right to warranty service.



TIP

Demand that the seller carefully and precisely fills out the *WARRANTY BOOK* and guarantee repair coupons. A missing date of purchase or sale point stamp, may make the user ineligible for any warranty repair or refund.

The user is obliged to report immediately on noticing any wear in the paint coating or traces of corrosion, and to have the faults rectified whether they are covered by the guarantee or not. Detailed guarantee regulations are contained in the *WARRANTY BOOK* attached to each machine.

Modification of the machine without the written consent of the Manufacturer is forbidden. In particular, do NOT weld, drill holes in, cut or heat the main structural elements, which have a direct impact on the machine operation safety.

1.5 TRANSPORT

The machine is prepared for sale completely assembled and does not require packing. Packing is only required for the machine's technical documentation.

Delivery is either by transport on a vehicle or independently, after being attached to a tractor. Transportation of the machine is connected to a permissible tractor provided the vehicle's driver familiarises himself with the machine's Operator's Manual and particularly with safety information and Concerning the Principles of connection and transportation on public roads.

During road transport the machine should be secured on the carrier platform by certified straps or chains fitted with pulley.

When loading and unloading the machine, comply with the general principles of workplace health and safety for reloading work. Persons operating reloading equipment must have the qualifications required to operate these machines.

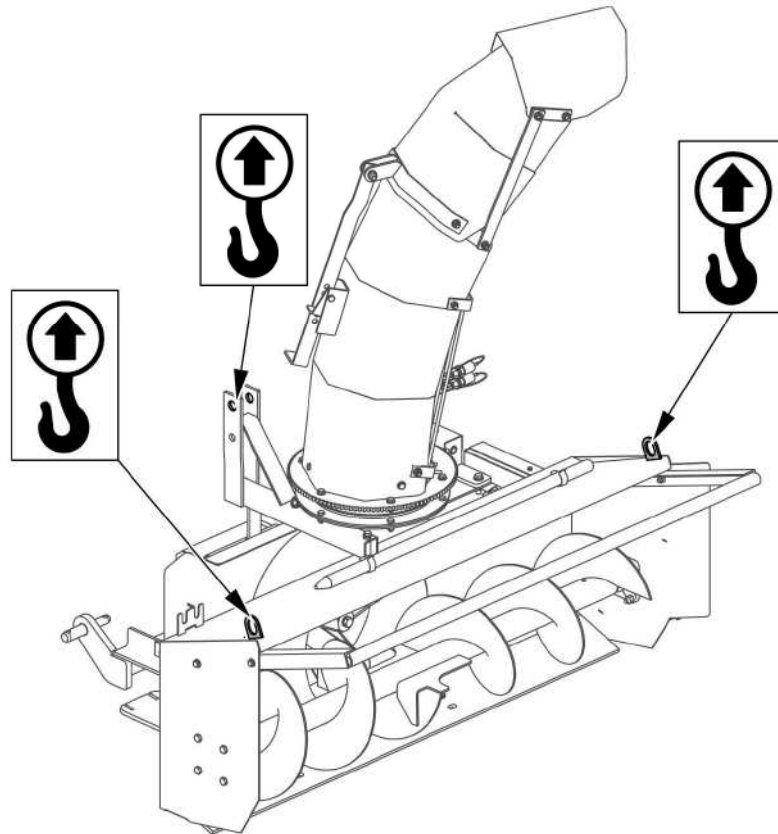


FIG. 1.2 **transport lugs**

The machine should be linked to lifting devices in places specially designed for this purpose (FIG. 1.2), i.e. by lugs at the top of the frame and a central link bracket. Suspension points are identified with information decals. When lifting the machine take care due to Particular The Possibility of tipping over the machine and the risk of injuries from protruding parts. To keep lifted machine in the correct direction it is recommended to apply additional guy cables. During the loading work particular care should be taken not to damage paint coating.



ATTENTION!

Do not attach slings and cargo fasteners to hydraulic system components.

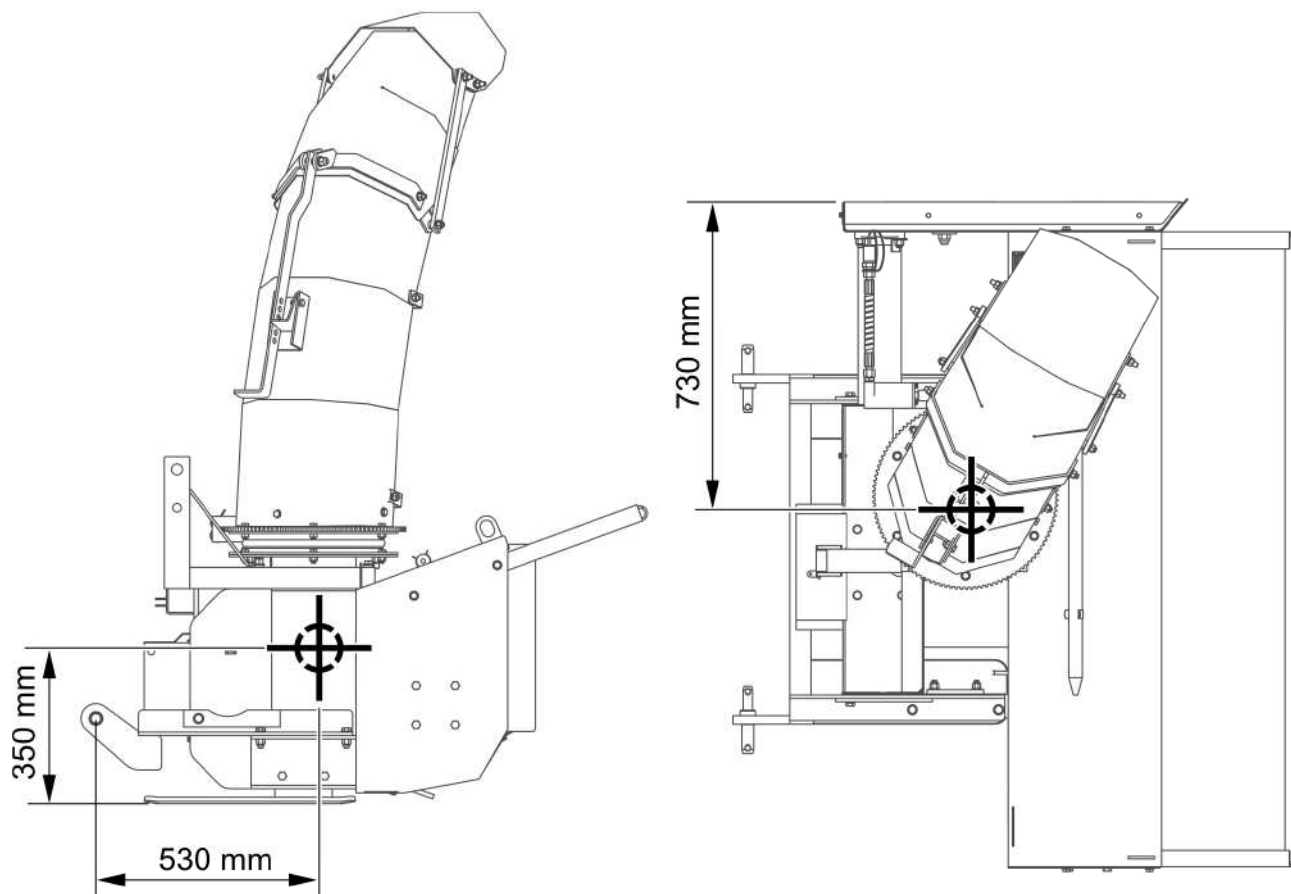


FIG. 1.3 Centre of gravity



ATTENTION!

Centre of gravity, depending on the positioning of the discharge chute can be varied within ± 50 mm.



DANGER

When transporting independently, the user must carefully read this Operator's Manual and observe all recommendations. When being transported on a motor vehicle the machine must be mounted on the vehicle's platform in accordance with the transport safety requirements. The driver of the vehicle should take particular care while transporting the machine. This is due to the vehicle's centre of gravity shifting upwards when loaded with the machine.

1.6 ENVIRONMENTAL HAZARDS

A hydraulic oil leak constitutes a direct threat to the natural environment owing to its limited biodegradability. Maintenance and repair work which involves the risk of an oil leak should be performed in the rooms with oil resistant surface. In the event of oil leaking into the environment, first of all contain the source of the leak, and then collect the leaked oil using available means. Remaining oil should be collected using sorbents, or by mixing the oil with sand, sawdust or other absorbent materials. The oil pollution, once gathered up, should be kept in a sealed, marked, hydrocarbon resistant container, and then passed on to the appropriate oil waste recycling centre. The container should be kept away from heat sources, flammable materials and food.

Oil, which has been used up or is unsuitable for further use owing to a loss of its properties should be stored in its original packaging in the conditions described above.

1.7 WITHDRAWAL FROM USE

In the event of decision by the user to withdraw the machine from use, comply with the regulations in force in the given country concerning withdrawal from use and recycling of machines withdrawn from use.

Remove the oil completely before dismantling the machine. For location of drain plug in the gearbox and how to drain please refer to Chapter 5.

When spare parts are changed, worn out or damaged parts should be taken to a collection point for recyclable raw materials. Waste oil and also rubber and plastic elements should be taken to establishments undertaking the utilisation of such waste.



IMPORTANT!

During dismantling personal protection equipment shall be used i.e. protective clothing, boots, gloves and protective goggles etc.

Avoid contact of skin with oil. Do not allow used oil to spill.

SECTION

2

SAFETY ADVICE

2.1 BASIC SAFETY RULES

2.1.1 USE OF MACHINE

- Before using the machine, the user must carefully read this Operator's Manual and the *WARRANTY BOOK*. When operating the machine, the operator must comply with the recommendations.
- The machine may only be used and operated by persons qualified to drive agricultural tractors and trained in the use of the machine.
- If the information contained in the Operator's Manual is difficult to understand, contact a seller, who runs an authorised technical service on behalf of the manufacturer, or contact the manufacturer directly.
- Careless and improper use and operation of the machine, and non-compliance with the recommendations given in this operator's manual is dangerous to your health.
- Be aware of the existence of a minimal risk, and for this reason the fundamental basis for using this machine should be the application of safety rules and sensible behaviour.
- The machine must never be used by persons, who are not authorised to drive agricultural tractors, including children and people under the influence of alcohol or other drugs.
- Non-compliance with the safety rules of this Operator's Manual can be dangerous to the health and life of the operator and others.
- The machine must not be used for purposes other than those for which it is intended. Anyone who uses the machine other than the way intended takes full responsibility for himself for any consequences of this use. Use of the machine for purposes other than those for which it is intended by the Manufacturer may invalidate the guarantee.
- The machine may only be used when all the safety guards and other protective elements are technically sound and correctly positioned. In the event of loss or destruction of the safety guards, they must be replaced with new ones.

2.1.2 LINKING AND DISCONNECTING FROM TRACTOR

- Do not link the machine to the tractor when the linkage systems of machine and tractor are not compatible.
- After completion of coupling the machine, check the safeguards. Carefully read the tractor Operator's Manual.
- To mount machine on tractor use only genuine pins and safeguard linchpins.
- The agricultural tractor to which the machine will be linked and coupled must be technically reliable and must fulfil the requirements of machine Manufacturer.
- Be especially careful when hitching the machine.
- When hitching, there must be nobody between the machine and the tractor. A person assisting in the hitching of the machine should stand in such a place (beyond the area of danger), in order to be continuously visible to the tractor driver.
- Exercise caution when disconnecting mower.
- The machine disconnected from the tractor must rest on the skids.

2.1.3 HYDRAULIC SYSTEM

- The hydraulic system is under high pressure when operating.
- Regularly check the technical condition of the connections and the hydraulic conduits. There must be no oil leaks.
- In the event of malfunction of the hydraulic system, the machine shall be disconnected from use until the malfunction is corrected.
- When connecting the hydraulic conduits to the tractor, make sure that the tractor hydraulic system and machine are not under pressure. If necessary reduce residual pressure in the system.
- In the event of injuries being caused by pressurised hydraulic oil, contact a doctor immediately. Hydraulic oil may find its way under the skin and cause infections. In the event of contact of oil with eye, rinse with large quantity of water and in the event of the occurrence of irritation consult a doctor. In the event of contact of oil with skin wash the area of contact with water and soap. Do NOT apply organic solvents (petrol, kerosene).

- Use the oil recommended by the Manufacturer. Never mix two types of oil.
- Used oil or oil, which has lost its properties, should be stored in original containers or replacement containers resistant to action of hydrocarbons. Replacement containers must be clearly marked and appropriately stored.
- Do not store hydraulic oil in packaging designed for storing food or foodstuffs.
- Rubber hydraulic conduits must be replaced every 4 years regardless of their technical condition.
- Repair and replacement of hydraulic system elements should be entrusted to the appropriately qualified persons.

2.1.4 TRANSPORTING THE MACHINE

- When driving on public roads, comply with the road traffic regulations. in force in the country, in which the machine is used.
- Do not exceed the permitted speed arising from road conditions and design limitations. Adjust travel speed to the prevailing road conditions and other limitations arising from road traffic regulations limits.
- Do NOT leave machine raised and unsecured while the tractor is parked. When parked, the machine should be lowered.
- Do NOT ride on the machine or transport any materials on it.
- Before using the machine always check its technical condition, especially in terms of safety. In particular, check the technical condition of the linkage and drive.
- During transport, the tractor three-point linkage should be locked in the up position to prevent its accidental lowering.
- Reckless driving and excessive speed may cause accidents.

2.1.5 MAINTENANCE

- During the warranty period, any repairs may only be carried out by Warranty Service authorised by the manufacturer. It is recommended that necessary repairs to machine should be undertaken by specialised workshops.
- In the event of any fault or damage whatsoever, do not use the machine until the fault has been corrected.

- During work use the proper, close-fitting protective clothing, gloves and appropriate tools. When working on hydraulic systems it is recommended to use oil resistant gloves and protective goggles.
- Any modification to the machine frees PRONAR from any responsibility for damage or detriment to health which may arise as a result.
- Before undertaking any work on the machine, switch off tractor engine.
- Regularly check the technical condition of the safety devices and correct tightening of bolt connections.
- Regularly perform service inspections of machine as recommended by the Manufacturer.
- Do NOT perform service or repair work under raised and unsupported machine.
- Before beginning repair works on hydraulic systems, reduce oil pressure.
- Servicing and repair work should be carried out in line with the general principles of workplace health and safety. In the event of injury, the wound must be immediately cleaned and disinfected. In the event of more serious injuries, seek a doctor's advice.
- Repair, maintenance and cleaning work should be carried out with the tractor's engine switched off and the ignition key removed. The vehicle shall be immobilized with the parking brake and secured against unauthorized access.
- Should it be necessary to change individual parts, use only original parts. Non-adherence to these requirements may put the user and other people's health and life at risk, and also damage the machine and invalidate the guarantee.
- Regularly check technical condition and mounting of all guards and protective elements.
- Do NOT weld, drill holes in, cut or heat the main structural elements, which have a direct impact on the machine operation safety.
- In the event of work requiring the machine to be raised, use properly certified hydraulic or mechanical lifts for this purpose. After lifting the machine, stable and durable supports must also be used. Do NOT carry out work under a machine, which has only been raised with the three point linkage.

- The machine must not be supported using fragile elements (bricks or concrete blocks).
- After completing work associated with lubrication, remove excess oil or grease.
- In order to reduce the danger of fire the machine must be kept in a clean condition.

2.1.6 OPERATING SNOWBLOWER

- Before lowering or lifting the machine mounted on tractor make sure there are no bystanders, especially children, near the machine.
- Before starting the machine make sure that there are no bystanders (especially children) or animals in the danger zone. The machine operator is obliged to ensure proper visibility of the machine and the working area.
- During machine operation do not occupy a different position than that of the operator in the vehicle's cab. Do NOT leave the cab, when the machine is in operation.
- Person must not stand in the snowblower operation area and also between the tractor and the machine.
- Do not direct discharge chute toward operator cabin.
- Exercise particular caution due to the limited field of view obstructed by the snow blower discharge chute.

2.1.7 OPERATION OF PTO SHAFT

- The machine may only be connected to the tractor by appropriately selected PTO shaft recommended by the Manufacturer.
- The PTO shaft has markings on the casing, indicating, which end of the shaft shall be connected to the tractor.
- Never use a damaged PTO shaft, it may cause an accident. A damaged shaft must be repaired or replaced.
- Disconnect the drive shaft each time when it is not necessary to drive the machine.

- The chains preventing the shaft cover from turning while the shaft is working, shall be secured to a fixed element of machine structure.
- Do NOT use the securing chains to support the shaft while machine is parked or when transporting the machine. The shaft is suspended on a support, which should be withdrawn during machine operation.
- Before using the machine, the user should thoroughly acquaint himself with the PTO shaft Operator's Manual and adhere to the recommendations contained in it.
- The drive shaft must be equipped with a cover. Do NOT use the shaft with damaged or missing guards.
- After connecting shaft ensure that it is correctly and safely connected to the tractor and to the machine.
- Before starting the PTO shaft, make sure that it is connected to the proper gearbox end (gearbox has two ends) PTO rotation direction is correct.
- Before disconnecting the shaft, turn off the tractor engine and remove the key from the ignition.
- Do NOT wear loose clothing, straps or whatever that may become wrapped round the rotating drive shaft. Contact with rotating PTO shaft may cause severe injuries.
- Do NOT go over and under the shaft or stand on it equally during work as also when the machine is parked.

2.2 DESCRIPTION OF MINIMAL RISK

Pronar Sp. z o. o. in Narew has made every effort to eliminate the risk of accidents. There is, however, a certain minimal risk, which could lead to an accident, and this is connected mainly with the actions described below:

- using the mower for purposes other than those for which it is intended,
- being between the tractor and the machine while the engine is working and when the machine is being attached,
- being on the machine while the engine is working,
- operating the machine with removed or faulty safety guards,

- not maintaining safe distance from the danger zone or being within the zones while the machine is operating,
- operation of the machine by persons under the influence of alcohol,
- cleaning, maintenance and technical checks when tractor is connected and engine is running.






The minimal risk may be kept to a minimum by following the recommendations below:







- prudent and unhurried operation of the machine,
- sensible application of the remarks and recommendations contained in the Operator's Manual,
- carrying out repair and maintenance work in line with operating safety rules,
- carrying out repair and maintenance work by persons trained to do so,
- using close fitting protective clothing,
- ensuring unauthorised persons have no access to the machine, especially children,
- maintaining safe distance from forbidden or dangerous places
- a ban on being on the machine when it is operating

2.3 INFORMATION AND WARNING DECALS

All signs should always be legible and clean, visible to the operator and also to persons possibly being in the vicinity of working machine. If any safety sign is lost or illegible, it should be replaced with a new one. All elements having safety signs replaced during repairs should be affixed with these signs. Safety signs and decals may be purchased from the Manufacturer or the Seller.

TAB. 2.1 Information and warning decals

ITEM	SYMBOL	DESCRIPTION
1		<p>Before starting work, carefully read the Operator's Manual.</p>
2		<p>During machine operation objects and blocks of ice can be thrown, which pose a risk of injury for the whole body. The operator should keep a safe distance from people, animals and buildings.</p>
3		<p>Danger of crushing. Do not stand between the tractor and the machine when connecting and controlling the linkage.</p>
4		<p>Risk of injury by PTO shaft. Do not approach or touch the rotating elements.</p>
5		<p>Pressurised liquid. Keep a safe distance.</p>

ITEM	SYMBOL	DESCRIPTION
6		<p>Do not touch the screw-worm when the drive is engaged.</p> <p>Keep a safe distance.</p>
7	 <p data-bbox="454 840 600 958">Usuwaj blokady śnieżne tylko wtedy, gdy pląg i dmuchawy są WYŁĄCZONE, używaj tylko drewnianych kołków lub szufli stanowiących wyposażenie pluga.</p>	<p>Attention! Remove blocking snow only when the snowplough and blower are turned OFF. Use only wooden pegs or shovels enclosed with the snowplough.</p>
8		<p>Do not reach into the compression area. Danger of crushing hands or fingers.</p>
9		<p>Manufacturer</p>
10	<p>PRONAR OW1.5</p>	<p>Machine model</p>
11		<p>Transport suspension points</p>
12		<p>Rotation speed and direction of gear shafts</p>

Numbers in the item column correspond to decals (FIG. 2.1)

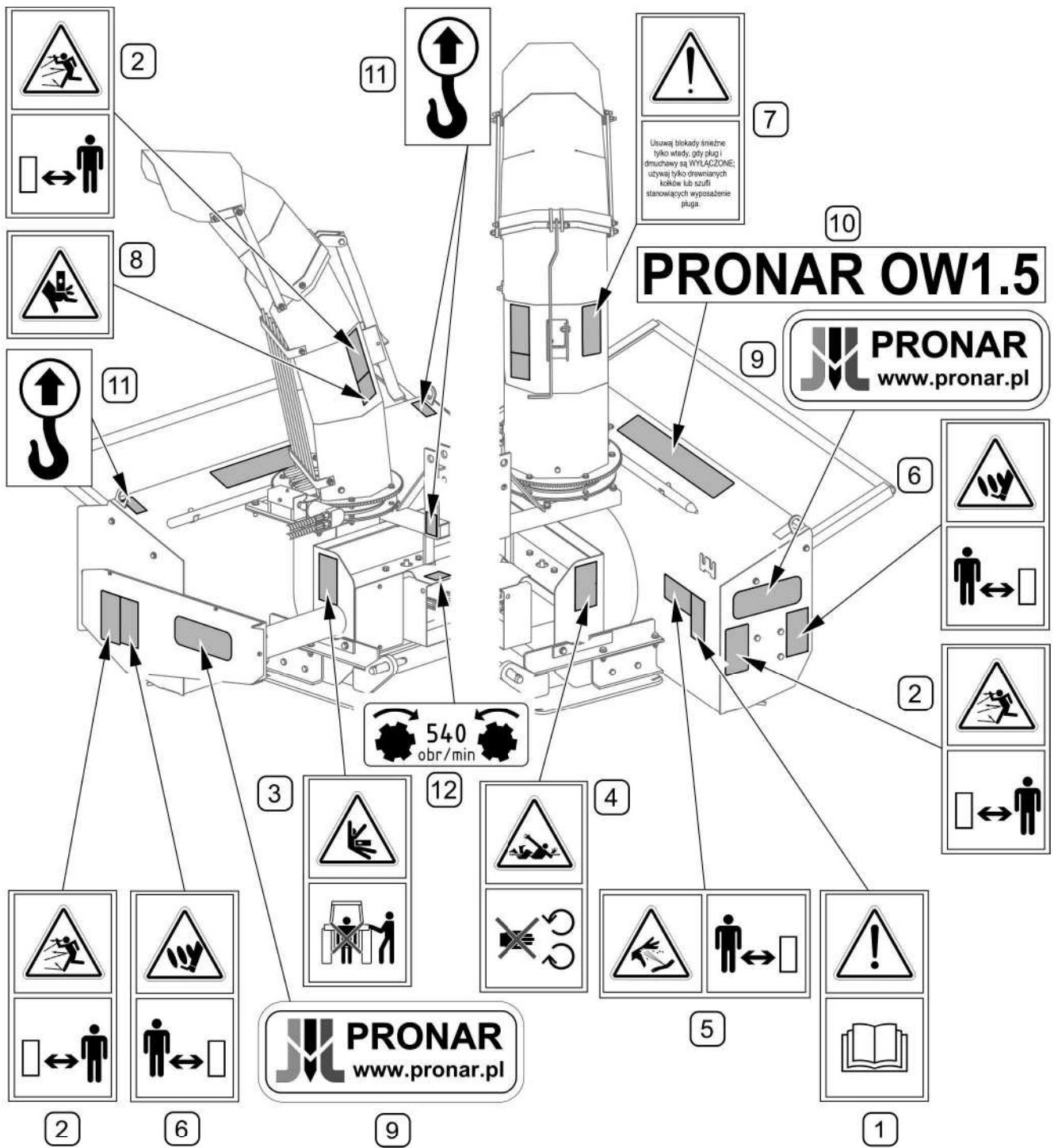


FIG. 2.1 Locations of information and warning decals.

Meaning of symbols (TAB. 2.1)

SECTION

3

**DESIGN AND
OPERATION**

3.1 TECHNICAL SPECIFICATION

TAB. 3.1 BASIC SPECIFICATIONS OF ROTARY SNOW BLOWER

	Unit	
Model	-	PRONAR OW1.5
Mounting method	-	Front or rear three-point linkage Cat I and II according to ISO 730-1
Working width	mm	1,500
Working height	mm	580
Discharge distance	m	5 – 20
Productivity	m ³ /min	5 – 7
Auger diameter	mm	320
Rotor diameter	mm	440
Drive and control	-	PTO and the tractor external hydraulic system
Weight	kg	320
Other information	-	Single person operation

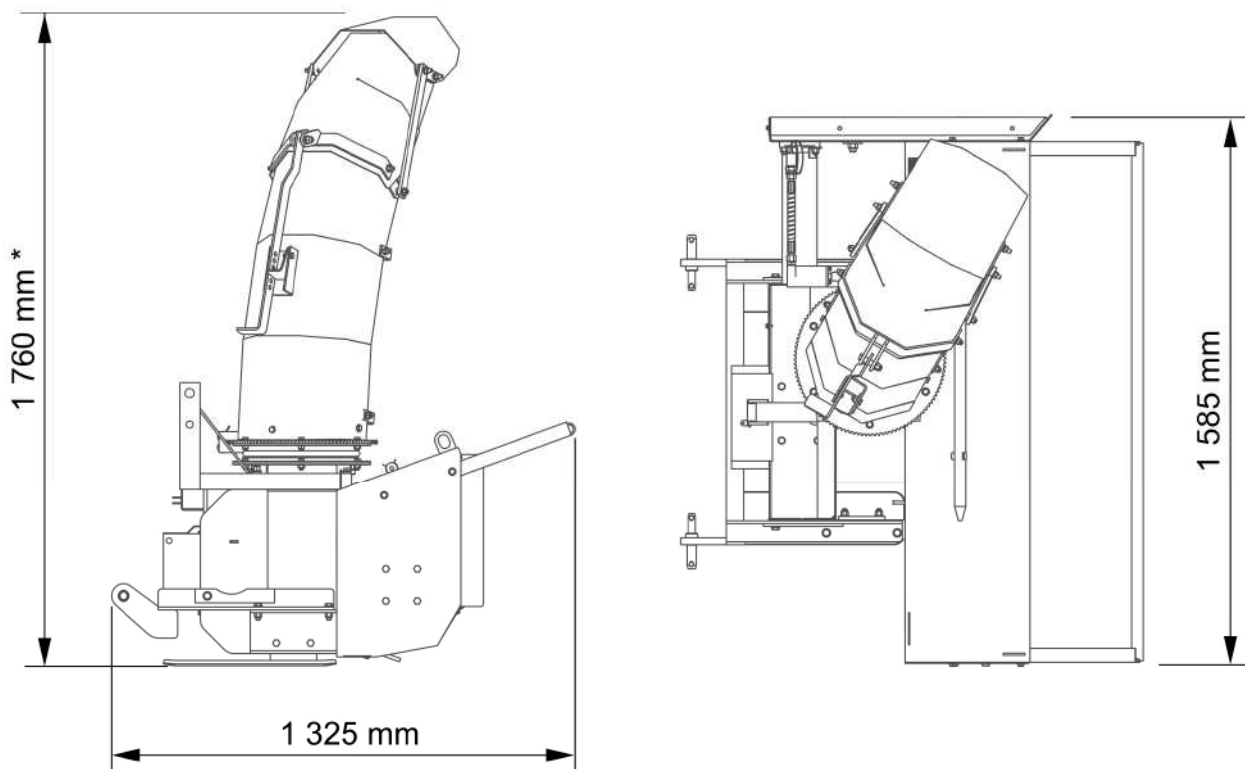


FIG. 3.1 External dimensions

* - The total height of the machine is given to the lowest setting of the discharge chute

3.2 GENERAL DESIGN

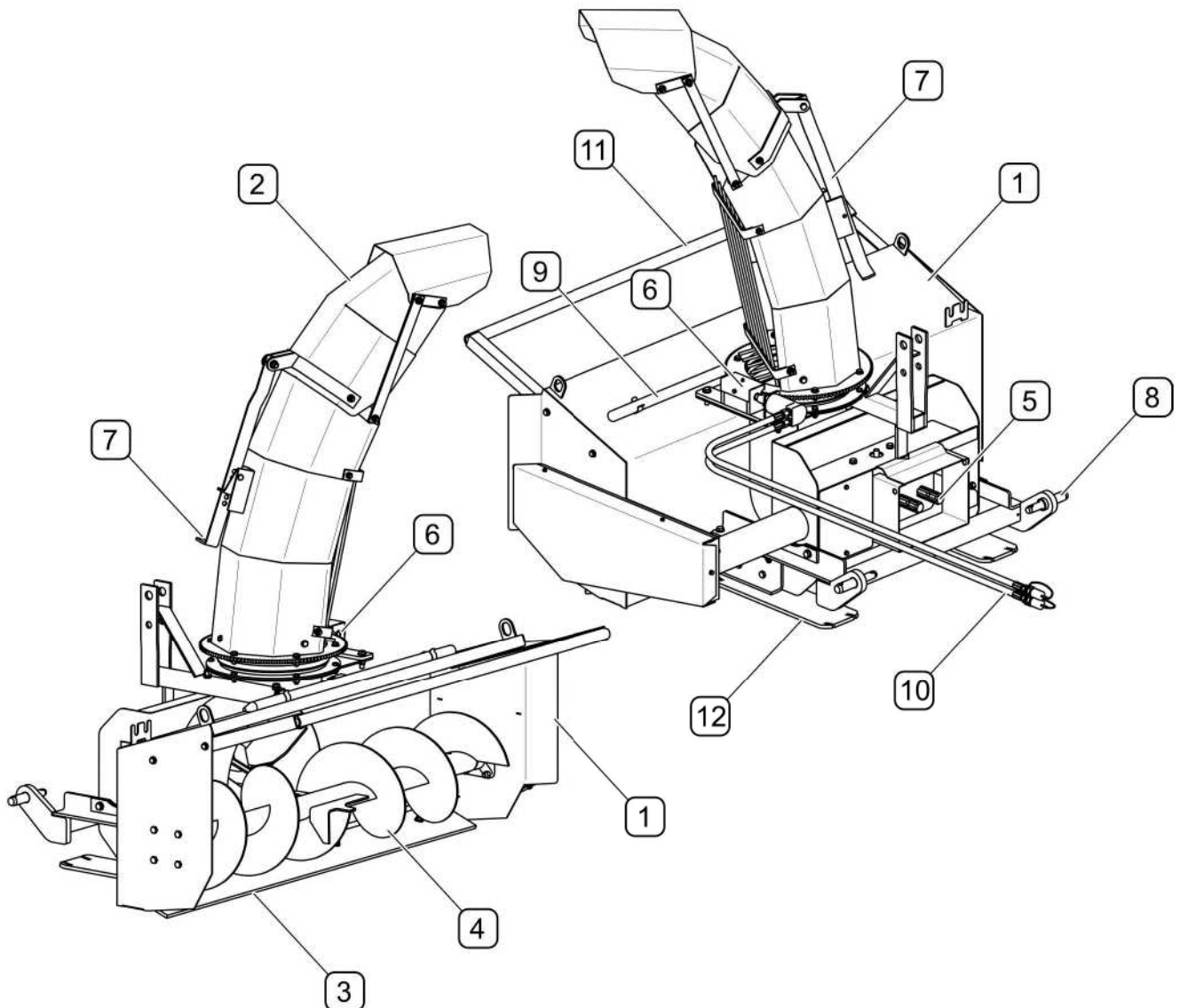


FIG. 3.2 **General design**

(1) - frame, (2) - discharge chute, (3) - collecting blade, (4) - auger, (5) - drive transmission, (6) - discharge chute rotation mechanism (rotor), (7) - discharge distance control lever; (8) - linkage, (9) - wooden dowel, (10) - discharge chute rotation hydraulic system; (11) - bumper, (12) - skids

Rotary snow blower consists of a rigid and lightweight frame (1) in which operating elements are embedded: blade (3) separating the layer of snow (ice) from the ground, auger (4), which cuts and transports snow inside the machine and rotor ejection the snow through discharge chute (2). Auger and rotor are driven by the tractor PTO shaft through the drive transmission system (5). Discharge chute (2) is rotated by the rotor (6) supplied with conduits (10) from the tractor hydraulic system. Snow discharging force is mechanically adjustable by (7) placed on

the discharge chute (2). Snow blower can be attached at the front or rear of tractor by linkage (8). During operation, the machine moves on the ground on adjustable skids (12).

3.3 DRIVE TRANSMISSION

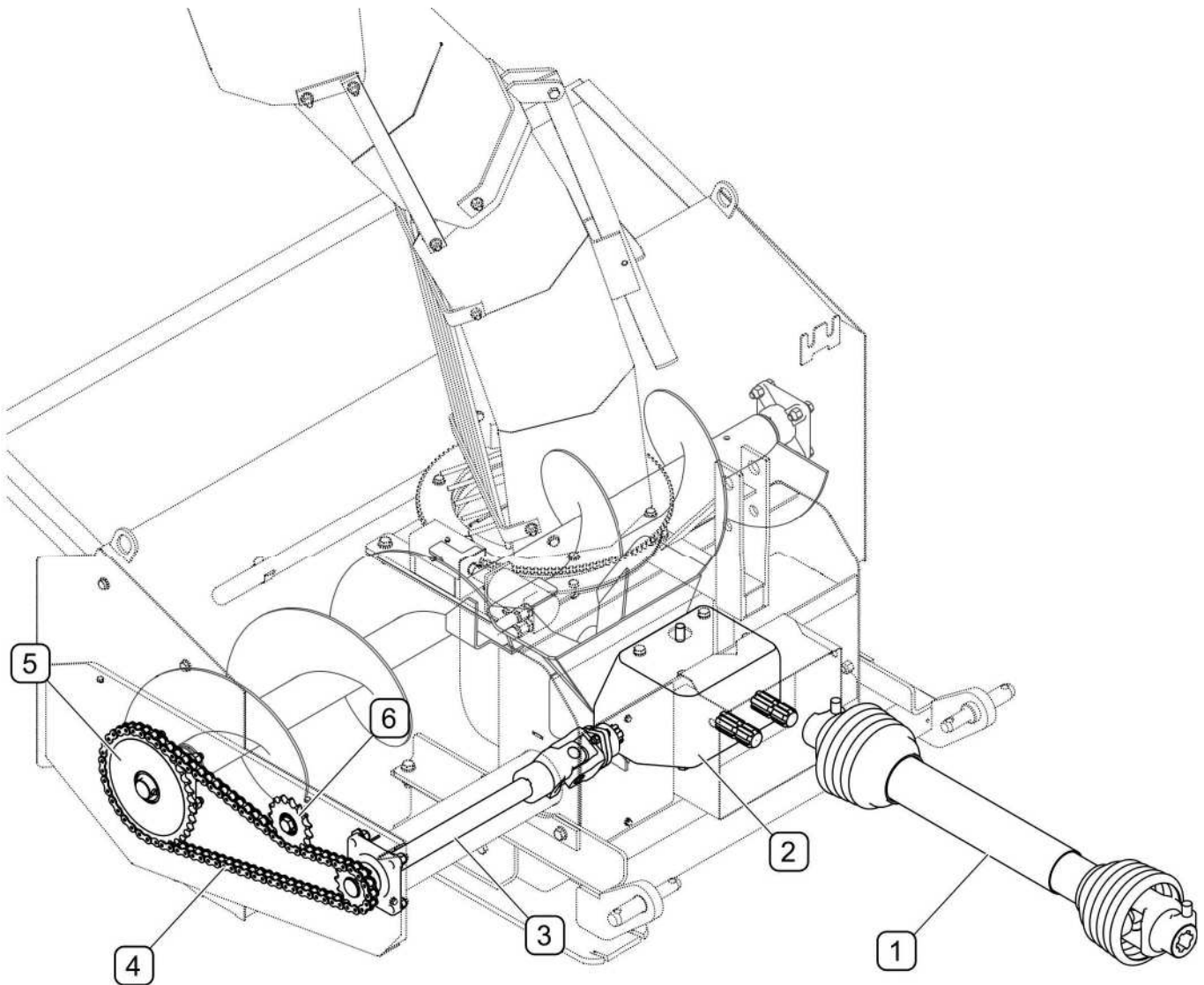


FIG. 3.3 Design of drive transmission system

(1) - PTO shaft; (2) - transmission; (3) - shaft; (4) - chain; (5) - sprocket; (6) - chain tensioner

The drive is transmitted from the tractor PTO shaft through another PTO shaft (1) to transmission gear (2). The transmission gear drives the snow blower rotor and auger through the PTO shaft (3) and chain transmission consisting of a chain sprockets (5), chain (4) and tensioner (6).

3.4 HYDRAULIC SYSTEM

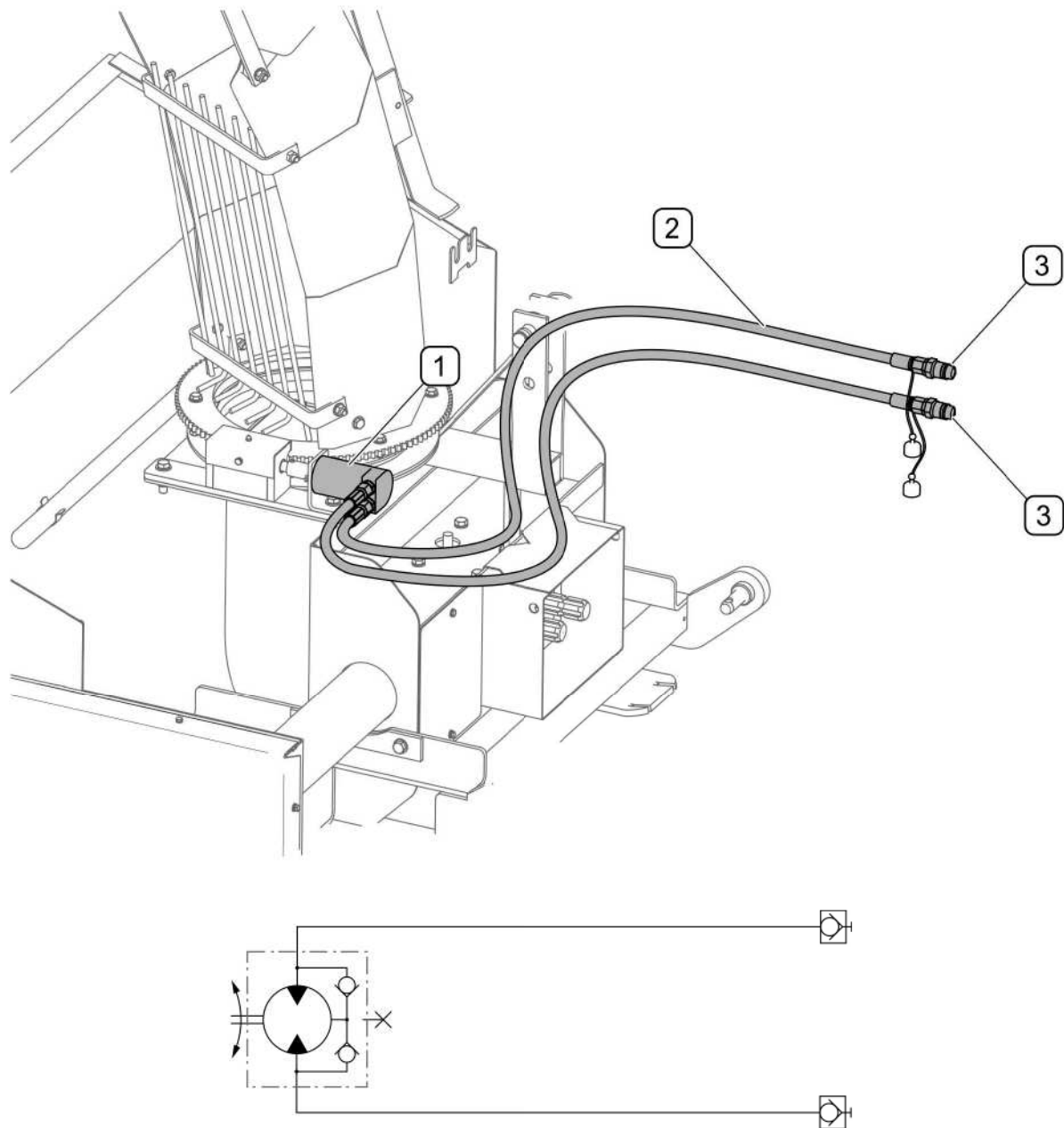


FIG. 3.4 Hydraulic system design

(1) - hydraulic motor; (2) - hydraulic conduits; (3) - quick couplers;

The snow blower hydraulic rotates the discharge chute. Hydraulic motor (1) is connected through conduits (2) terminated with quick couplers (3) to the tractor external hydraulics.

SECTION

4

CORRECT USE

4.1 PREPARING FOR WORK

DANGER



Before using the machine, the user must carefully read this operator's manual.

Careless and improper use and operation of the machine, and non-compliance with the recommendations given in this operator's manual is dangerous to your health.

The machine must never be used by persons, who are not authorised to drive agricultural tractors, including children and people under the influence of alcohol or other drugs.

Non-compliance with the safety rules of this Operator's Manual can be dangerous to the health and life of the operator and others.

Before starting the machine, make sure that there are no bystanders in the danger zone.

The manufacturer guarantees that the machine is fully operational and has been checked according to quality control procedures and is ready for normal use. This does not release the user from an obligation to check the machine's condition after delivery and before first use. The machine is delivered to the user completely assembled. Prior to connecting to the tractor, machine operator must verify the machine's technical condition. In order to do this:

- the user must carefully read this Operator's Manual and observe all recommendations, understand the design and the principle of machine operation
- check the condition of protective paint coat,
- Inspect machine's individual components for mechanical damage resulting from incorrect transport (dents, piercing, bent or broken components),
- Check all the lubrication points, lubricate the machine as needed according to recommendations provided in section 5,
- check the compatibility of the sand spreader linkage with the tractor's linkage,
- check the compliance of PTO parameters, termination type, speed,
- check the compatibility of hydraulic system,
- check the technical condition of the auger and the rotor.
- check technical condition of protective shields and check if they are correctly installed,

- check the technical condition of the transmission gear and the power take-off shaft,

**DANGER**

Before starting the tractor with the connected machine make sure the PTO drive is not engaged, otherwise it can lead to uncontrolled operation of the machine.

**ATTENTION!**


Non-adherence to the recommendations contained in the Operator's Manual or improper use may cause damage to the machine.

The technical condition before starting the machine must be no cause for concern.

If all the above checks have been performed and there is no doubt as to the machine's good technical condition, it can be connected to carrying vehicle, started and all its individual systems checked. In order to do this:

- connect the machine to the tractor (see Hitching to tractor)
- connect the hydraulic conduits,
- Connect the PTO shaft, check the operation of the drive train and transmission gear for tightness,
- check the discharge chute rotating mechanism,
- check auger rotation direction (if necessary transfer the PTO shafts to the other end of transmission gear)

In the event of a disruption in the operation of the machine immediately discontinue its use, locate and remove the fault. If a fault cannot be rectified or the repair could void the guarantee, please contact the Manufacturer for additional clarifications.


	<p>ATTENTION!</p> <p>Before using the machine always check its technical condition.</p>
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4.2 CHECKING TECHNICAL CONDITION

When preparing the machine for normal use, check individual elements according to guidelines presented in Table 4.1

TAB. 4.1 TECHNICAL INSPECTION SCHEDULE

DESCRIPTION	SERVICE OPERATION	FREQUENCY
Technical condition of safety guards	check the technical condition of safety guards, if complete and correctly mounted.	Before beginning work
Technical condition of the auger, rotor and drive train components	check the technical condition, if complete and correctly mounted.	
Technical condition of hydraulic conduits	Visually inspect the technical condition	
Oil level in gear transmission	Check as outlined in chapter <i>DRIVE TRANSMISSION SYSTEM MAINTENANCE</i>	
Check of all main nut and bolt connections are properly tightened	Torque values should be according to table 5.5	Once a week
Lubrication	Lubricate elements according to table <i>LUBRICATION</i> .	According to table 5.4

	<p>ATTENTION!</p> <p>Do not use a malfunctioning or deficient machine.</p>
-------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------

4.3 HITCHING TO TRACTOR

4.3.1 HITCHING TO THE THREE POINT LINKAGE



ATTENTION!

Before hitching the machine to tractor, the user must carefully read the tractor operator's manual.



DANGER

Exercise caution when hitching the machine to tractor.

No one is allowed between the tractor and the machine during hitching.

Snow blower can be attached to a tractor that meets the requirements contained in Table 1.1 REQUIREMENTS FOR A TRACTOR. Before suspending the machine on the tractor, check the linkage compatibility.

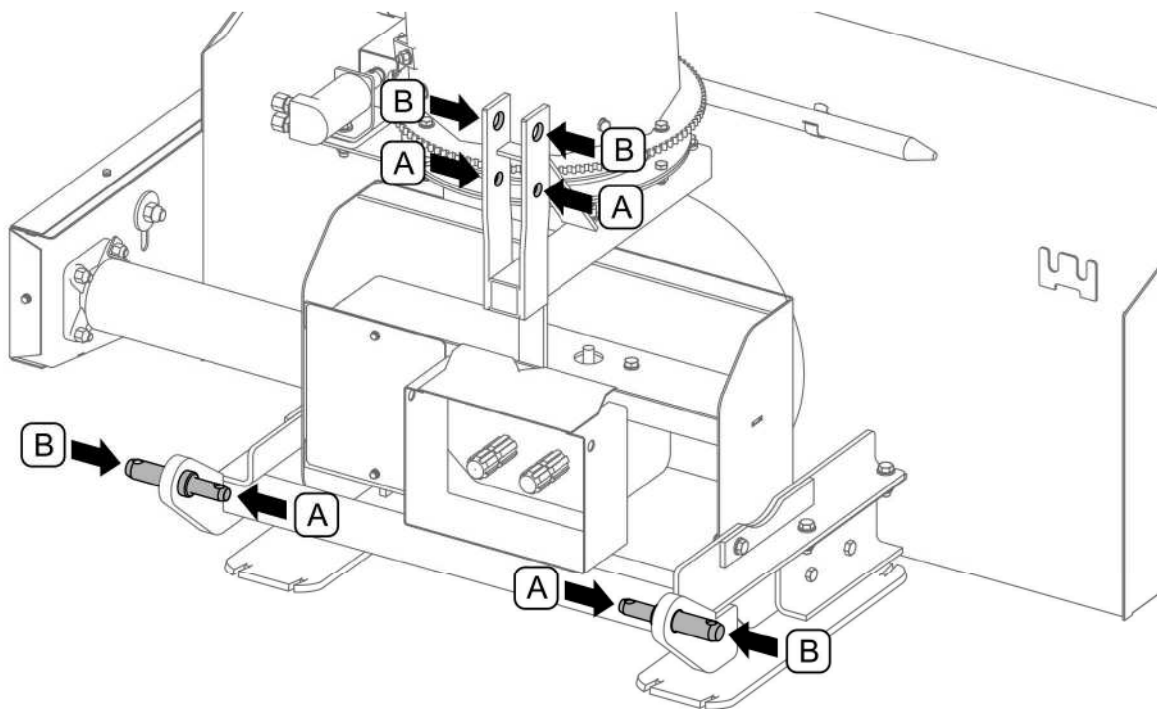


FIG. 4.1 Attachment points of three-point linkage Cat I and II according to ISO 730-1

(A) - category I attachment points (B) - Category II attachment points

Snowblower is designed to operate on the tractor front and the rear three-point hitch.

When hitching the snow blower to tractor's three-point linkage do the following:

- move the lower rod of tractor's three-point linkage to the lower linking points of the snow blower; set lower rods at an appropriate height
- switch off tractor's engine and prevent it from moving,
- connect the lower pins of the machine linkage with tractor's three-point linkage and secure with linchpins,
- in the case of the linkage hook, place balls on machine linkage pins, secure with linchpins and lift the pin until balls lock in hooks,
- connect tractor upper link (central connector) to the upper attachment point of the snow blower's linkage using a pin and secure with linchpin,
- eliminate lateral movements of machine by appropriate adjustment of the lower arm stabilisers; both lower links of the three-point linkage are recommended to be set at the same height,
- lift machine using tractor three point linkage.

**DANGER**

To mount machine on tractor use only genuine pins and safeguard linchpins.

4.3.2 CONNECTING PTO SHAFT**DANGER**

Before connecting the shaft, turn off the tractor's engine and remove the key from the ignition. Ensure that unauthorised persons do not have access to the tractor.

The use of PTO shaft and its technical condition must be in accord with the Operator's Manual of PTO shaft.

Before connecting the PTO shaft it is absolutely necessary to carefully read the Operator's Manual attached by the Manufacturer of the shaft and observe the instructions contained in it. Before connection to the tractor check the technical condition of the shaft guard, the completeness and condition of the protecting chains and the general technical condition of the shaft. To connect the drive train of the machine tractor PTO shaft used a PTO shaft recommended by the Manufacturer.

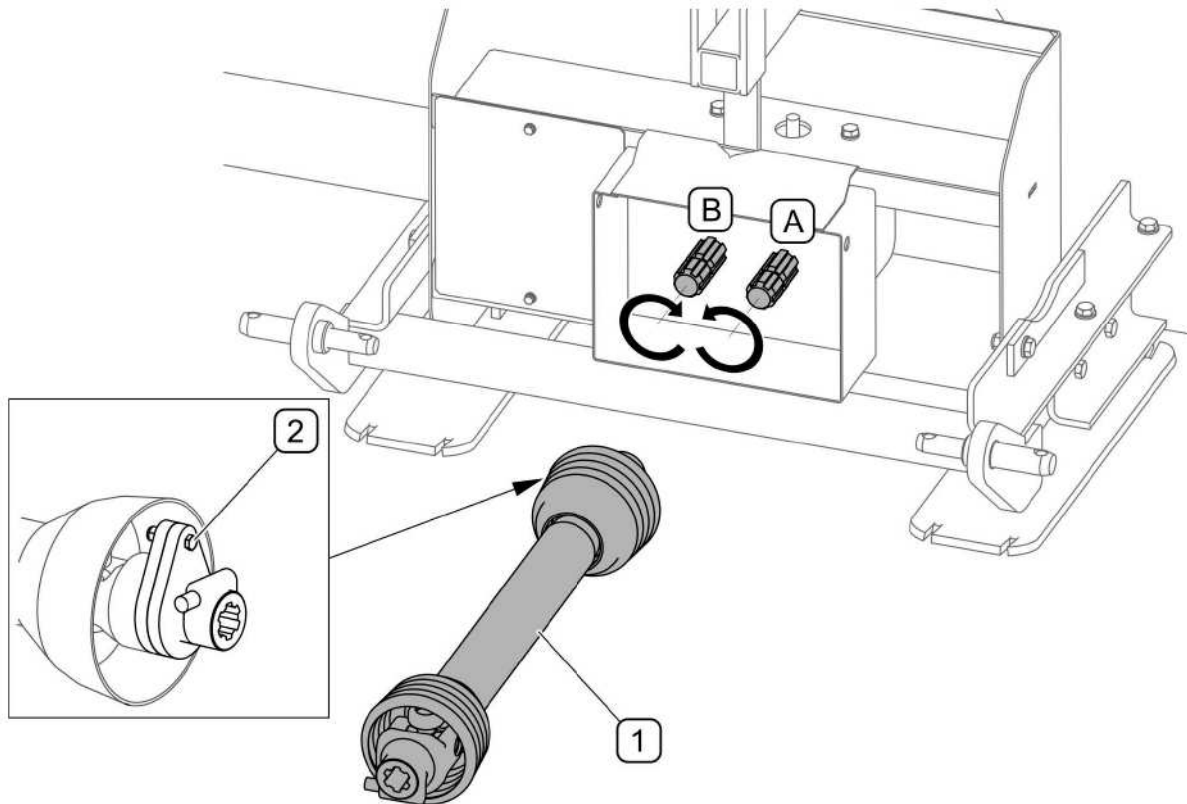


FIG. 4.2 Connecting PTO shaft

(A) - drive shaft for clockwise tractor PTO rotation; (B) - drive shaft for anti-clockwise tractor PTO rotation; (1) - telescopic PTO shaft, (2) - overload protection screw

Depending on the direction of rotation of the tractor PTO, telescopic PTO shaft must be connected to the appropriate gear shaft (FIG. 4.2). Shaft end terminated with a clutch (overload protection screw) should be connected to the machine.

Snow blower is factory equipped with a telescopic PTO shaft, part number 4R-302-0-BA-K401 with a length range of 460 - 690 mm. If needed, the shaft with length range of 510 - 790 mm can be used with catalogue number 4R-302-1-BA-K401.

If the shaft is connected to the machine and suspended on a special support (1) when you connect the shaft to the tractor, the support must be placed in working position (FIG. 4.3) and secured with a linchpin (2).

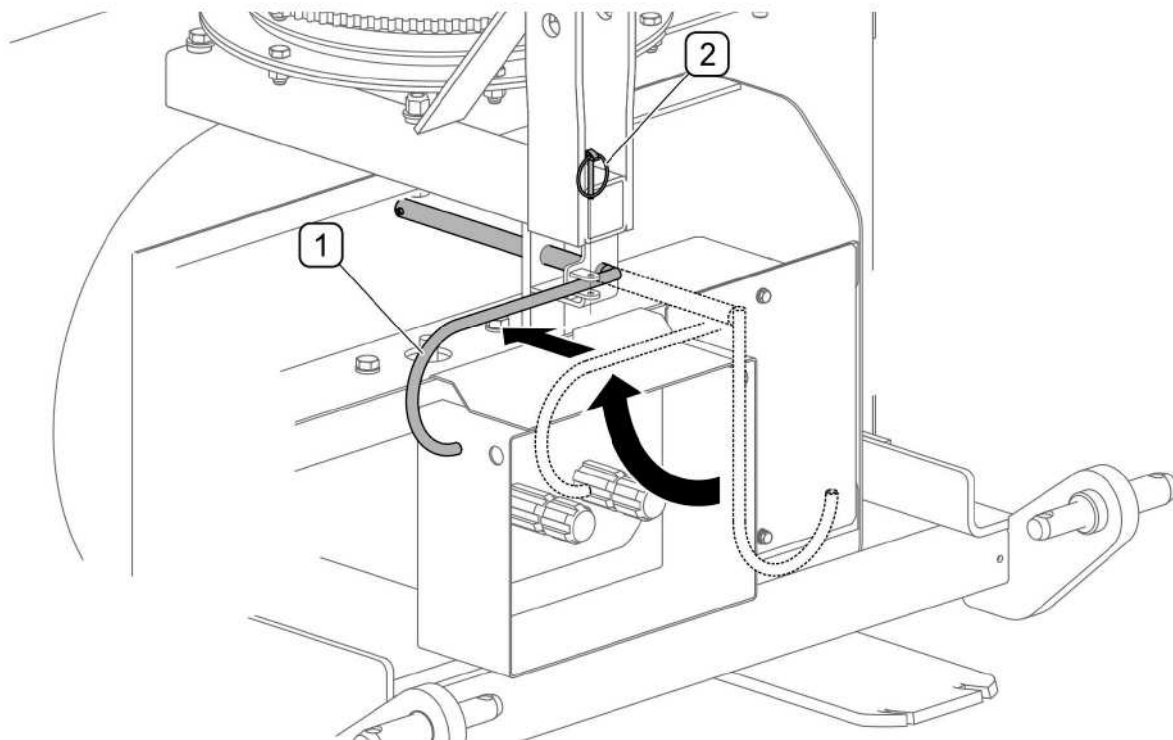


FIG. 4.3 Folding support of telescopic PTO shaft

(1) - shaft support, (2) - securing linchpin

4.3.3 CONNECTING THE HYDRAULIC CONDUITS

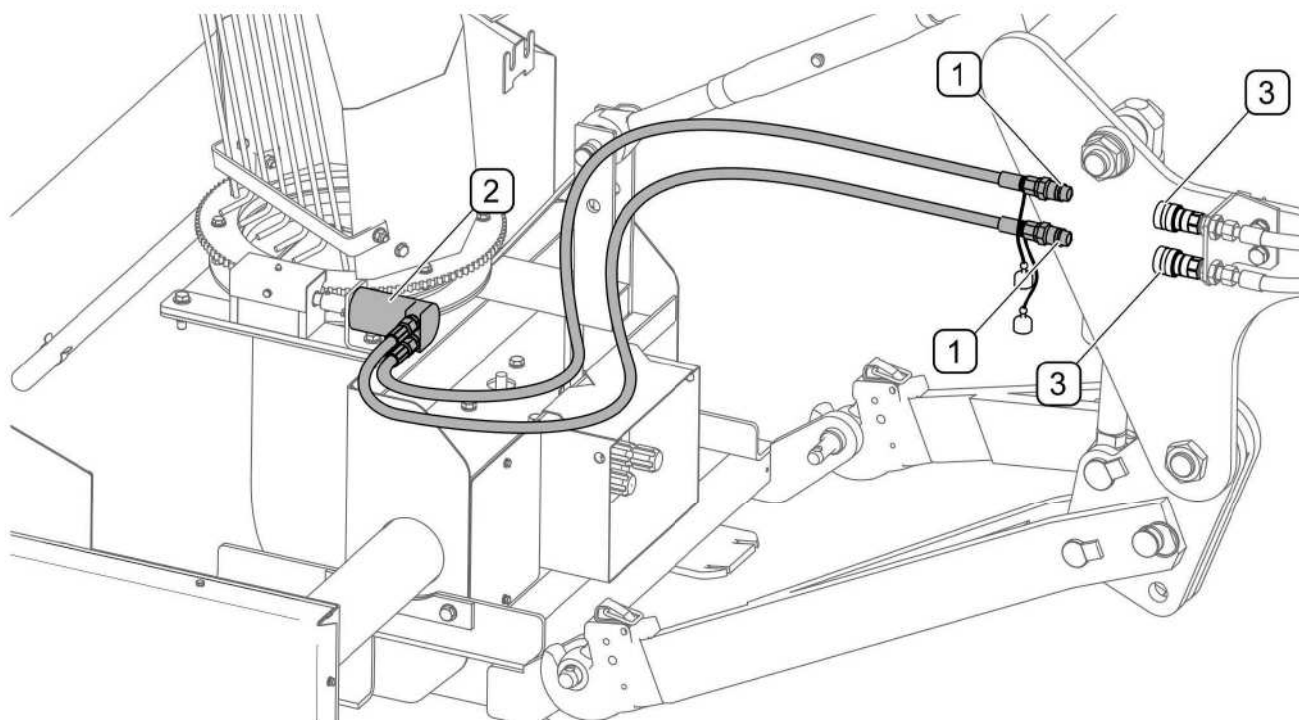


FIG. 4.4 Connecting conduits to discharge chute

(1) - snow blower hydraulic conduit plugs, (2) - hydraulic motor, (3) - tractor hydraulic sockets

**DANGER**

Before connecting the hydraulic conduits carefully read the tractor operator's manual and follow the manufacturer's recommendations.

**DANGER**

When connecting the hydraulic conduits, make sure that the hydraulic system of the tractor is not under pressure.

To allow rotation of the discharge chute with hydraulic motor (2), connect the hydraulic connector plugs (1) to sockets (3) the tractor hydraulic system (FIG. 4.4). It is recommended that discharge chute rotation hydraulic plugs are connected to the hydraulic system allowing changing the hydraulic oil flow direction.

**ATTENTION!**

During operation, the hydraulic conduits should be so arranged as to not prevent entangling with the machine and tractor moving parts.

4.4 OPERATING SNOWBLOWER

4.4.1 SETTING WORKING HEIGHT

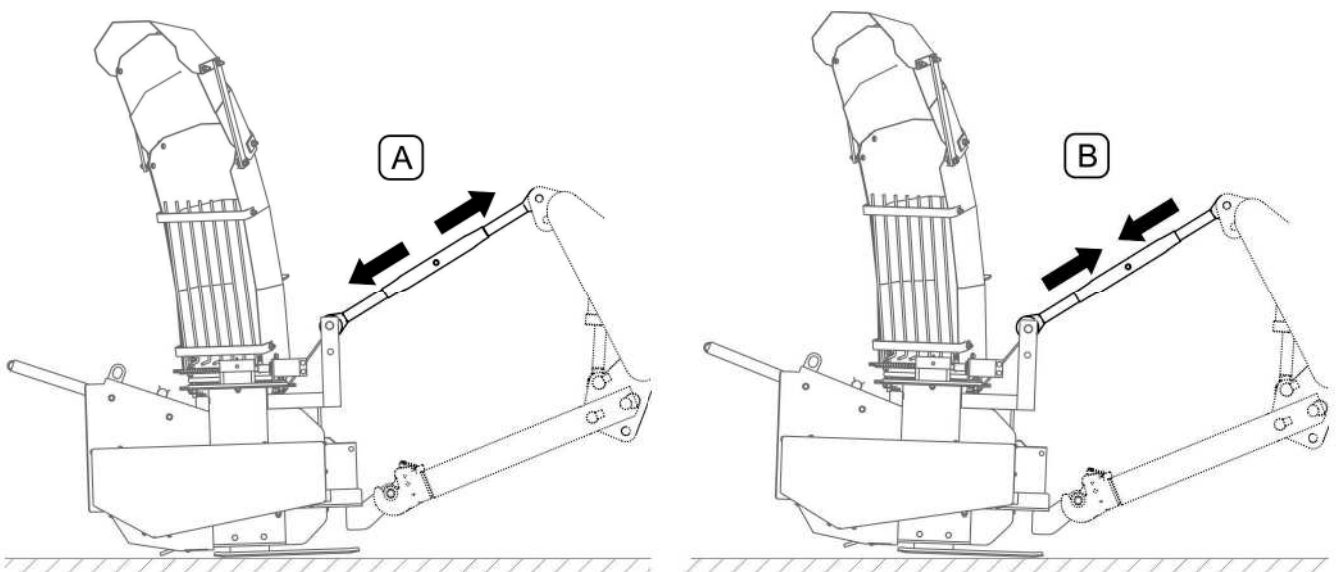


FIG. 4.5 **Setting working height**

(A) - reducing the operating height, (B) - increasing the working height

The working height is adjusted by the length of the central link (FIG. 4.5). By reducing the

length of the central link, the snowblower is tilted in the direction of the tractor, blade rises and increases the working height. It is recommended to operate the snowblower horizontally. Tilting the machine too much in the driving direction causes faster blade wear. Working height should be increased when there is a risk of hitting or collecting debris, stones, pieces of wood, etc. Working height can be affected by wear and tear of the blade and skids.

4.4.2 ADJUSTING THE DIRECTION OF SNOW DISCHARGE

Discharge chute rotation mechanism is used to adjust the direction of the snow discharge. Discharge chute rotation is controlled from operator cab by actuating the appropriate external hydraulic circuit to which snow blower hydraulic conduits are connected.

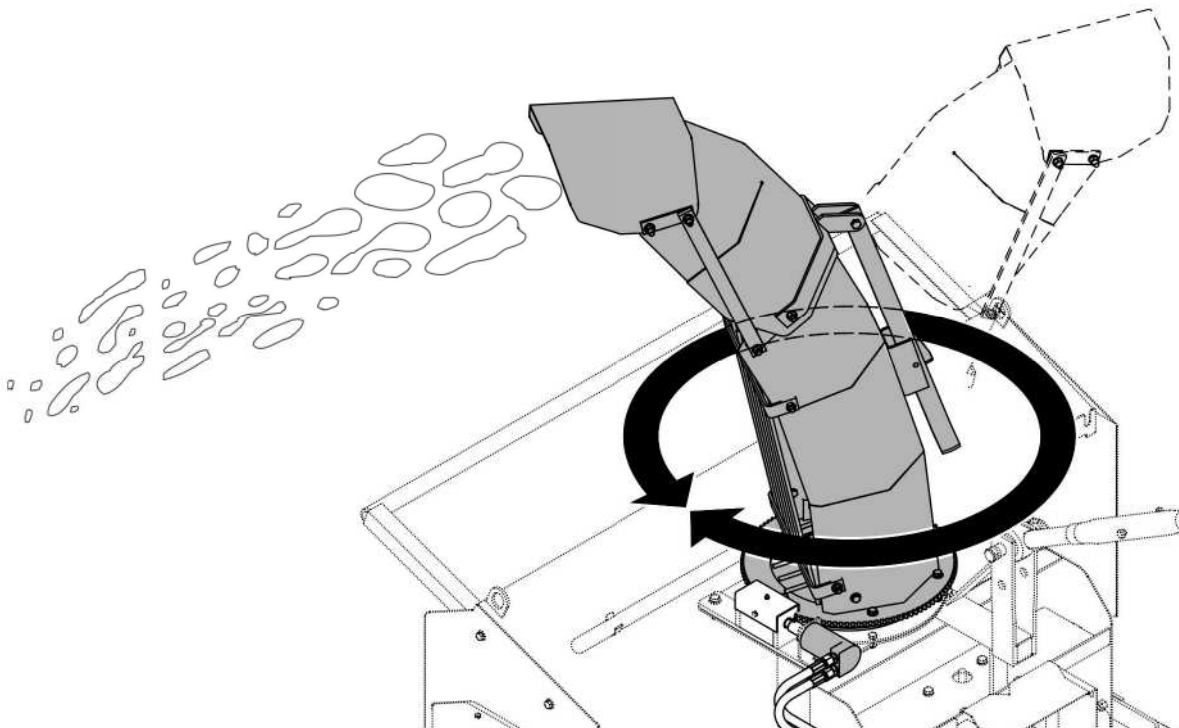


FIG. 4.6 Adjusting the direction of snow discharge

Adjusting the direction of snow discharge is done from operator cab using the appropriate section of the hydraulic manifold. Discharge chute rotation mechanism allows its full rotation. The discharge chute rotation direction depends on the oil flow direction in the hydraulic manifold.



DANGER

Do not direct discharge chute toward operator cabin.

4.4.3 ADJUSTING THE SNOW DISCHARGE FORCE



DANGER

Before you begin the adjustment, turn off the machine drive and ensure that unauthorised persons have no access to the vehicle cab.

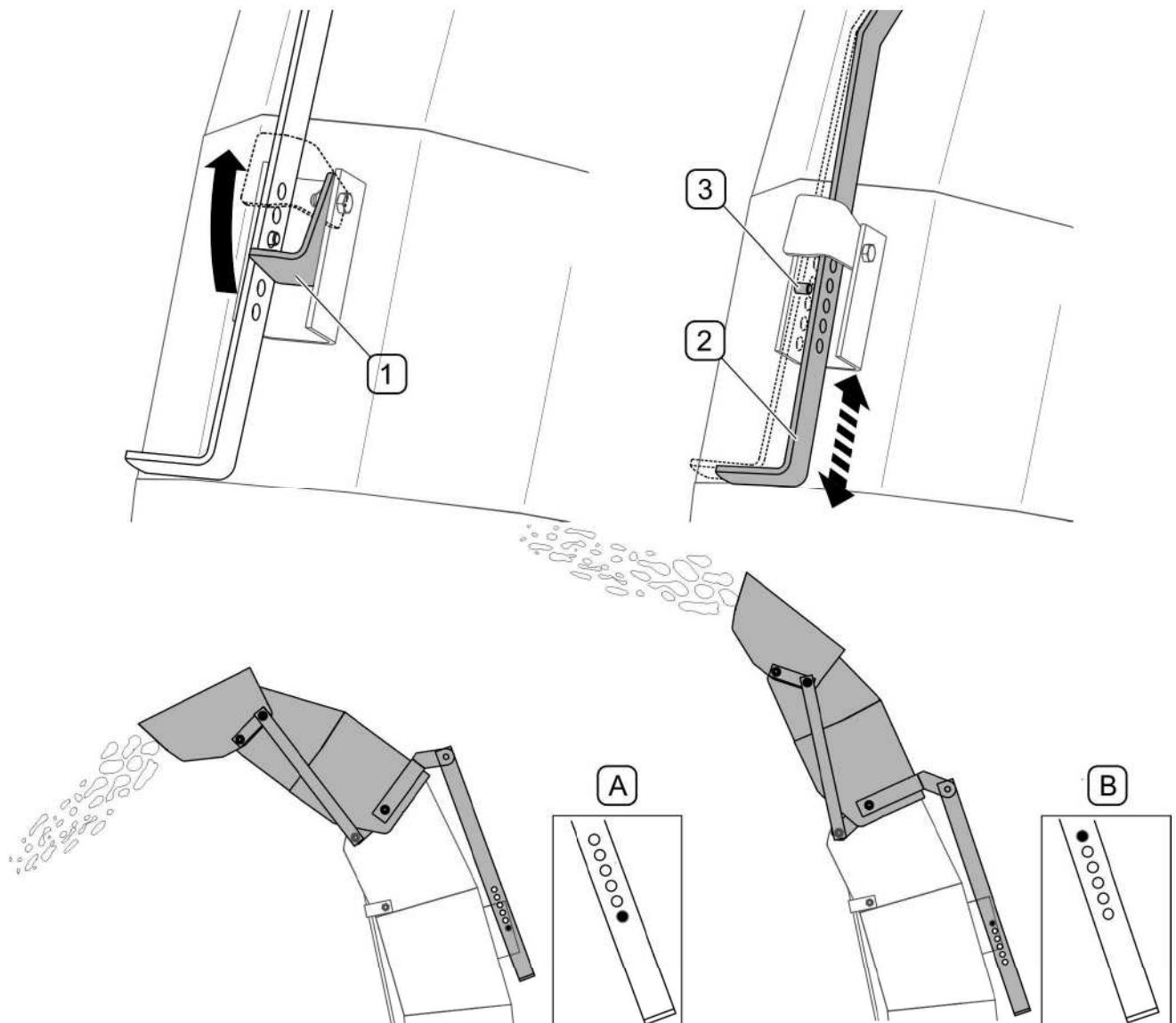


FIG. 4.7 Adjusting the snow discharge force

(1) - lock, (2) - adjustment lever, (3) - pin; (A) - minimum discharge range, (B) - maximum discharge range

Depending on the discharge chute settings, the properties of snow, and the rotor speed snow discharge can range from 5 to 20 m.

The discharge range is adjusted by gradually by changing the settings of the lever (2)

adjusting the height and tilting of the discharge chute outlet (FIG. 4.7)
To adjust snow discharge range (FIG. 4.7):

- raise the lock (1),
- move the lever (2) to the side so that the pin is placed in one of the 6 lever holes,
- lower the lock (1).



DANGER

Heavy objects in the snow, i.e. stones, blocks of ice can be thrown out through the discharge chute to a much greater distance than snow.

4.4.4 CLEARING SNOW



DANGER

Before you start clearing snow, check the work area and, if possible, remove any objects and obstacles, which the snowblower might strike or throw. They can cause an accident or damage the machine.

Having made sure that all the protective elements and all the connections are properly installed, one may commence working with the machine. Drive to the area to be cleared of snow, lower the machine attached to tractor linkage until it rests on the ground. Set tractor three-point linkage to "float" to allow ground surface tracking when clearing the snow. Initially set the discharge range and direction. Engage the PTO drive at an appropriately low engine speed and gradually increase the speed and then start driving. Driving speed should be adjusted to the amount and properties of snow. Maintain constant PTO speed when clearing snow.

If there is a risk that snow contains stones, gravel, rubble or other items and they could be collected by the machine blade, increase working height (see 4.4.1 SETTING WORKING HEIGHT)



DANGER

During work, pay attention to persons, vehicles and buildings that may be within the snow discharge range. Appropriately set the range and direction of snow discharge.

**IMPORTANT!**

Do not start clearing the snow until the PTO reaches the appropriate speed.

4.4.5 REMOVING BLOCKAGES**DANGER**

If the machine drive transmission or discharge chute is jammed disengage the PTO shaft before leaving the cab, stop the tractor prevent unauthorised access to tractor cab.

If the blockage is caused by the accumulation of snow, use wood pin (1) the supplied with the machine (FIG. 4.8). Pin (1) is mounted in brackets (2) on the auger casing.

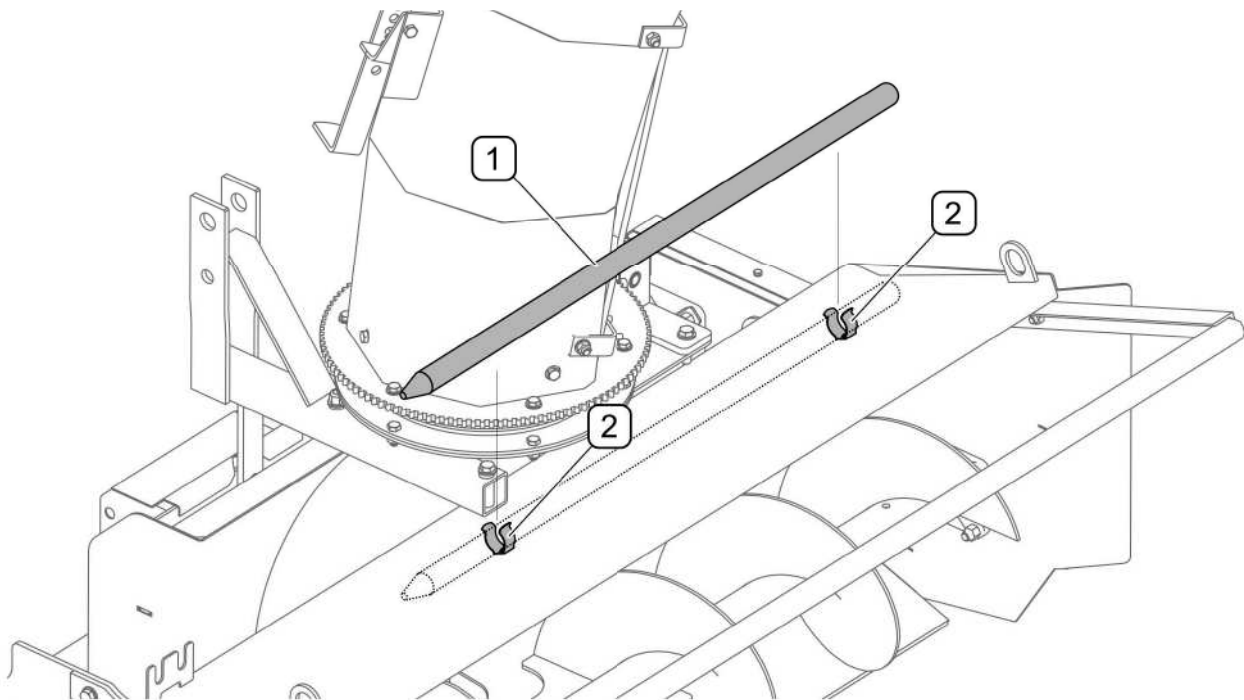


FIG. 4.8 removing blockages

(1) - a wood pin, (2) - brackets;

If the machine drive was disconnected due to slipping of the overload release clutch on the PTO shaft or telescopic PTO shaft, check the cause and replace the safety bolt (see 5.2.3 REPLACING OF SAFETY BOLT).

4.5 TRANSPORTING THE MACHINE

When driving on public or private roads, respect the road traffic regulations, exercise caution and prudence. Listed below are the key guidelines.

- Make sure that the machine is correctly attached to the tractor, and linkage is properly secured.
- When driving with the raised snow blower, disengage the PTO drive.
- Do not exceed maximum speed allowed by road traffic law. Speed of travel should be adjusted to prevailing road conditions, pavement condition and other conditions.
- When driving with raised snow blower set it so as not to obscure the lights or restrict the visibility of the operator.
- Avoid ruts, depressions, ditches or driving on roadside slopes. Driving across such obstacles could cause the trailer or the tractor to suddenly tilt. Driving near ditches or canals is dangerous as there is a risk of the wheels sliding down the slope or the slope collapsing.
- Speed must be sufficiently reduced before making a turn or driving on an uneven road or a slope.
- When driving on uneven terrain with the implement raised reduce speed due to dynamic loads and the risk of damaging the machine or carrying vehicle.
- When driving with raised implement, secure the tractor linkage against falling or accidental dropping.

4.6 DISCONNECTING FROM TRACTOR



DANGER

Before disconnecting the machine from the tractor, turn off the tractor engine, engage the parking brake and secure cab against access of third persons.

Be especially careful when disconnecting the machine from the tractor.

In order to disconnect the snow blower from the tractor, proceed as follows:

- Lower the sand spreader until it fully rests on the ground.
- Switch off engine, remove key from ignition and engage tractor parking brake.
- Reduce residual pressure in the hydraulic system by movements of appropriate lever controlling the tractor's hydraulic circuit.
- Disconnect hydraulic conduits of discharge chute rotation mechanism and place them in special brackets on the snow blower chassis (FIG. 4.9)
- Disconnect telescopic PTO shaft from the tractor and place in the bracket (FIG. 4.10).
- Disconnect top link (so-called central connector), dismount lower arms from pins and drive tractor away from the sand spreader.

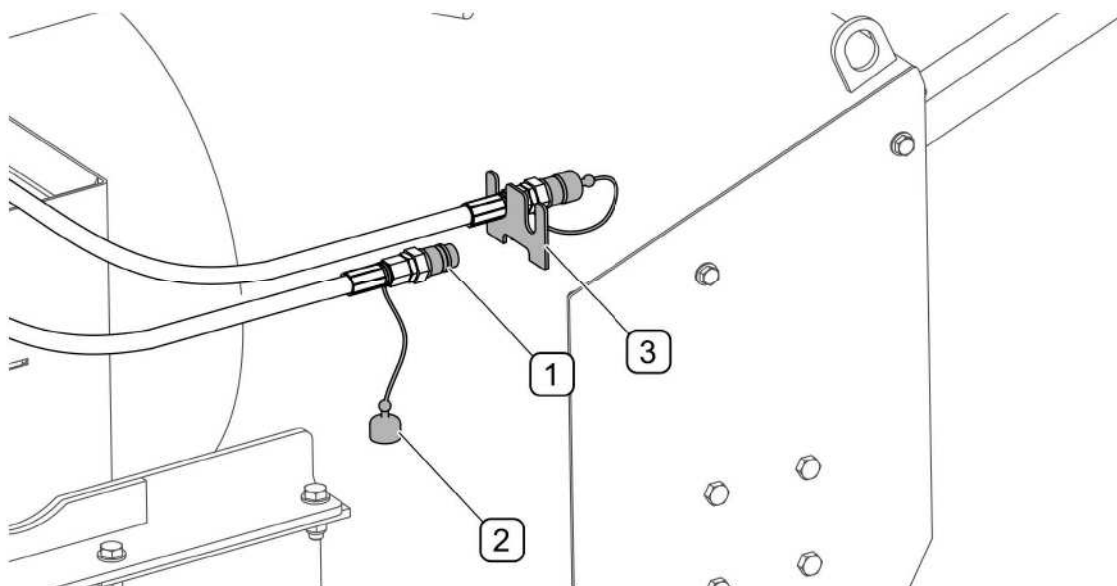


FIG. 4.9 Protect hydraulic conduit connectors

(1) - hydraulic quick-couplers, (2) - protective caps; (3) - conduit bracket

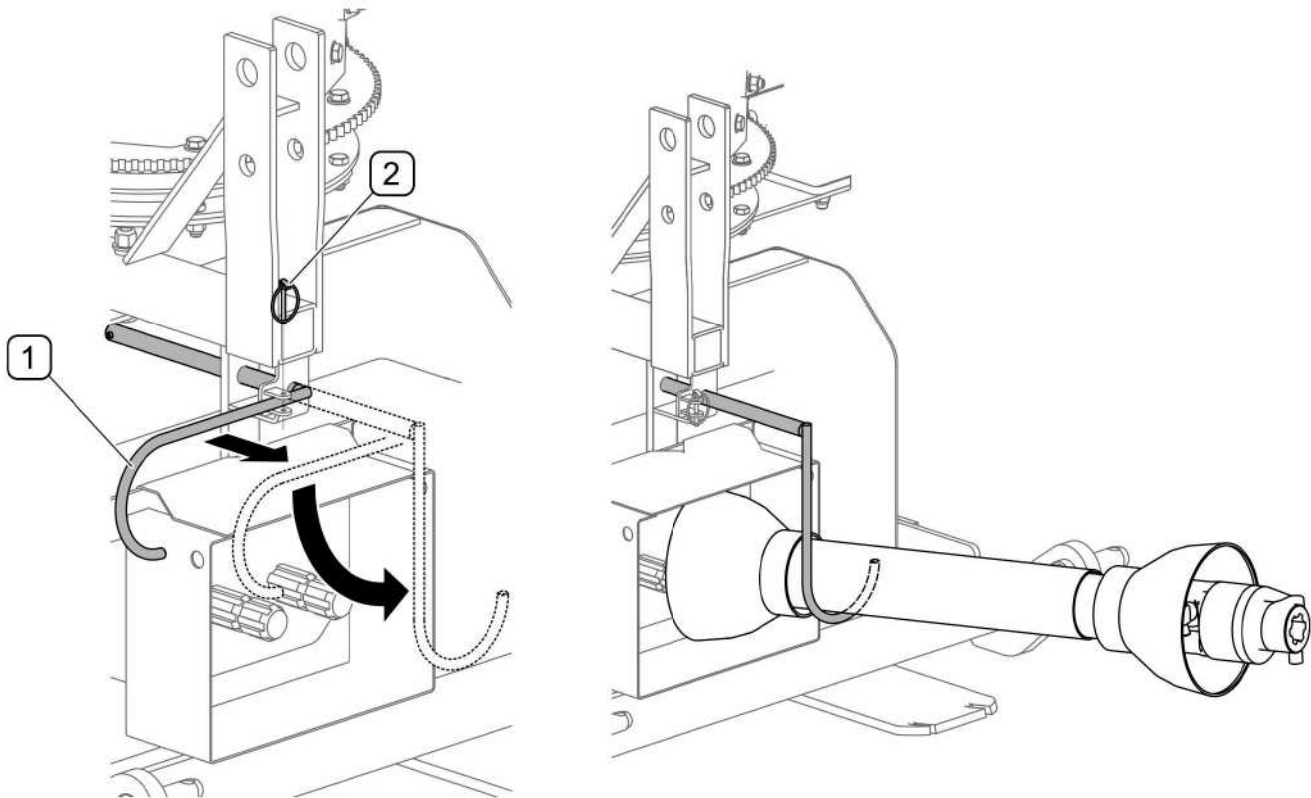


FIG. 4.10 **Protecting power take-off shaft**

(1) - shaft support, (2) - securing linchpin;



ATTENTION!

Do NOT use the securing chains to support the shaft while machine is parked or when transporting the machine.

Machine disconnected from the tractor must be placed on level, sufficiently hard surface in such a manner as to ensure that it is possible to connect it again.

SECTION

5

MAINTENANCE

5.1 HYDRAULIC SYSTEM MAINTENANCE

The duties of the operator connected with the hydraulic system include:

- checking leaktightness of hydraulic connections;
- checking technical condition of hydraulic conduits and quick couplers;



DANGER

Do not repair hydraulic system on your own. All hydraulic system repairs must be performed only by suitably qualified personnel.



ATTENTION!

Before you begin, visually inspect the hydraulic system components.



The condition of hydraulic system should be inspected regularly while using the machine.

In a new machine, the hydraulic system is filled with HL32 hydraulic oil. The oil is not classified as a dangerous substance because of its composition. However, long-term action on the skin or eyes may cause irritation. In the event of contact of oil with skin wash the place of contact with water and soap. Do NOT apply organic solvents (petrol, kerosene). Contaminated clothing should be changed to prevent access of oil to skin. In the event of contact of oil with eye, rinse with large quantity of water and in the event of the occurrence of irritation consult a doctor. Hydraulic oil in normal conditions is not harmful to the respiratory tract. A hazard only occurs when oil is strongly atomised (oil vapour), or in the case of fire during which toxic compounds may be released.



DANGER

Oil fires should be quenched with carbon dioxide (CO₂), foam or extinguisher steam. Do NOT use water for fire extinguishing.

TAB. 5.1 HL32 hydraulic oil characteristics

ITEM	NAME	VALUE
1	ISO 3448VG viscosity classification	32
2	Kinematic viscosity at 40°C	28.8 – 35.2 mm ² /s
3	ISO 6743/99 quality classification	HL
4	DIN 51502 quality classification	HL
5	Flash point, °C	Above 210°C
6	Maximum Operating Temperature, °C	80

Spilt oil should be immediately collected and placed in marked tight container. Used oil should be taken to the appropriate facility dealing with the re-use of this type of waste.

The hydraulic system should be completely tight sealed. Minimum leaks are permissible with symptoms of "sweating", however in the event of noticing leaks in the form of "droplets" stop using the machine until faults are remedied.

The hydraulic system is vented automatically during machine operation.

**DANGER**

Before commencing whatever work on hydraulic system reduce the residual pressure in the system.

**DANGER**

During work on hydraulic systems use the appropriate personal protection equipment i.e. protective clothing, footwear, gloves and eye protection. Avoid contact of skin with oil.



Hydraulic conduits should be replaced after 4 years of machine use.

5.2 MAINTENANCE OF PTO DRIVE TRANSFER SYSTEM

5.2.1 INSPECTION AND REPLACEMENT OF OIL IN THE GEARBOX

In the new machine transmission gear is pre-filled with oil. grade GL-4 80W/90. Transmission gear maintenance involves periodical checking of oil level and changing oil.

To check the oil level in transmission gear:

- set the machine horizontally,
- unscrew inspection plug (1) (FIG. 5.1),
- oil level should reach the lower edge of the plug opening (1),
- if necessary, add oil through the inlet plug (2)



It is recommended to check oil level in gear after every 40 hours of machine operation or after prolonged stoppage.

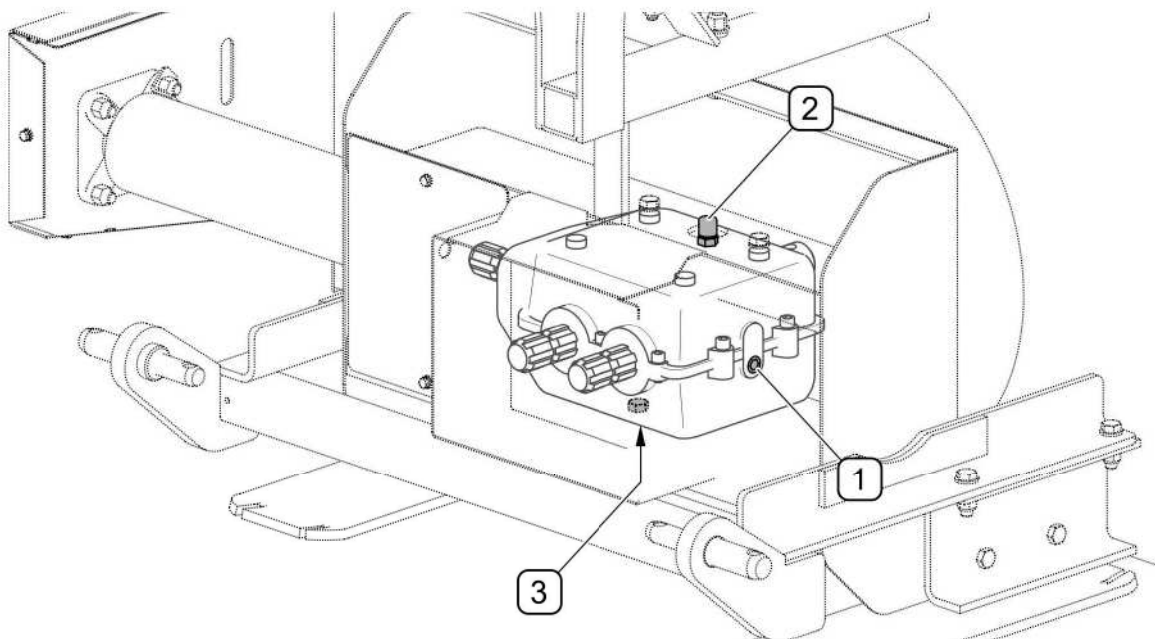


FIG. 5.1 Checking and change of oil in intersecting axis gear

(1) - inspection plug (2) - inlet plug with air vent, (3) - drain plug

**DANGER**

When checking oil level and changing oil use the appropriate personal protection equipment i.e. protective clothing, footwear, gloves eye protection. Avoid contact of skin with oil.

It is best to change oil immediately after completing work when transmission gear is still hot and impurities are suspended in oil. Before changing oil in the intersecting axis gear (FIG. 5.1):

- prepare the vessel for oil, unscrew the inspection plug (1), inlet plus (2) and drain plug (3) at the bottom of the transmission gearbox,
- drain the oil into the previously prepared vessel and tighten the drain plug (3),
- if oil Manufacturer recommends flushing transmission, that operation should be performed according to the guidelines of the oil Manufacturer (guidelines may be detailed on packaging),
- position the machine horizontally and pour the required quantity of oil through the inlet (1),
- tighten the inspection plug and (1) i inlet plug (2)



Oil in the transmission gearbox must be replaced every 500 hours or after one year whichever occurs first.

**TIP**

For lubrication use a gear oil grade GL-4 80W/90 quantity of 1.5 litres.

The procedure concerning gear oil is the same as the procedure for hydraulic oil (see 5.1 Hydraulic system maintenance). Used oil should be taken to the appropriate facility dealing with the re-use of this type of waste.

If a leak is noticed, carefully inspect seals and check oil level. Transmission operation with insufficient oil may cause permanent damage of the mechanism.

Repair of transmission during guarantee period may only be performed at authorised mechanical workshops.

5.2.2 CHECKING AND ADJUSTMENT OF CHAIN TRANSMISSION



DANGER

Before you begin the adjustment, turn off the machine drive and ensure that unauthorised persons have no access to the vehicle cab.

In order to check the condition of the chain, unscrew the 7 bolts (4) and remove the cover (3). A correctly tensioned chain must deflect about 7 mm. To adjust the chain tension, loosen the nut (1), move the pin with the tensioner wheel (2). Tighten the nut (1), replace and secure the cover (3).

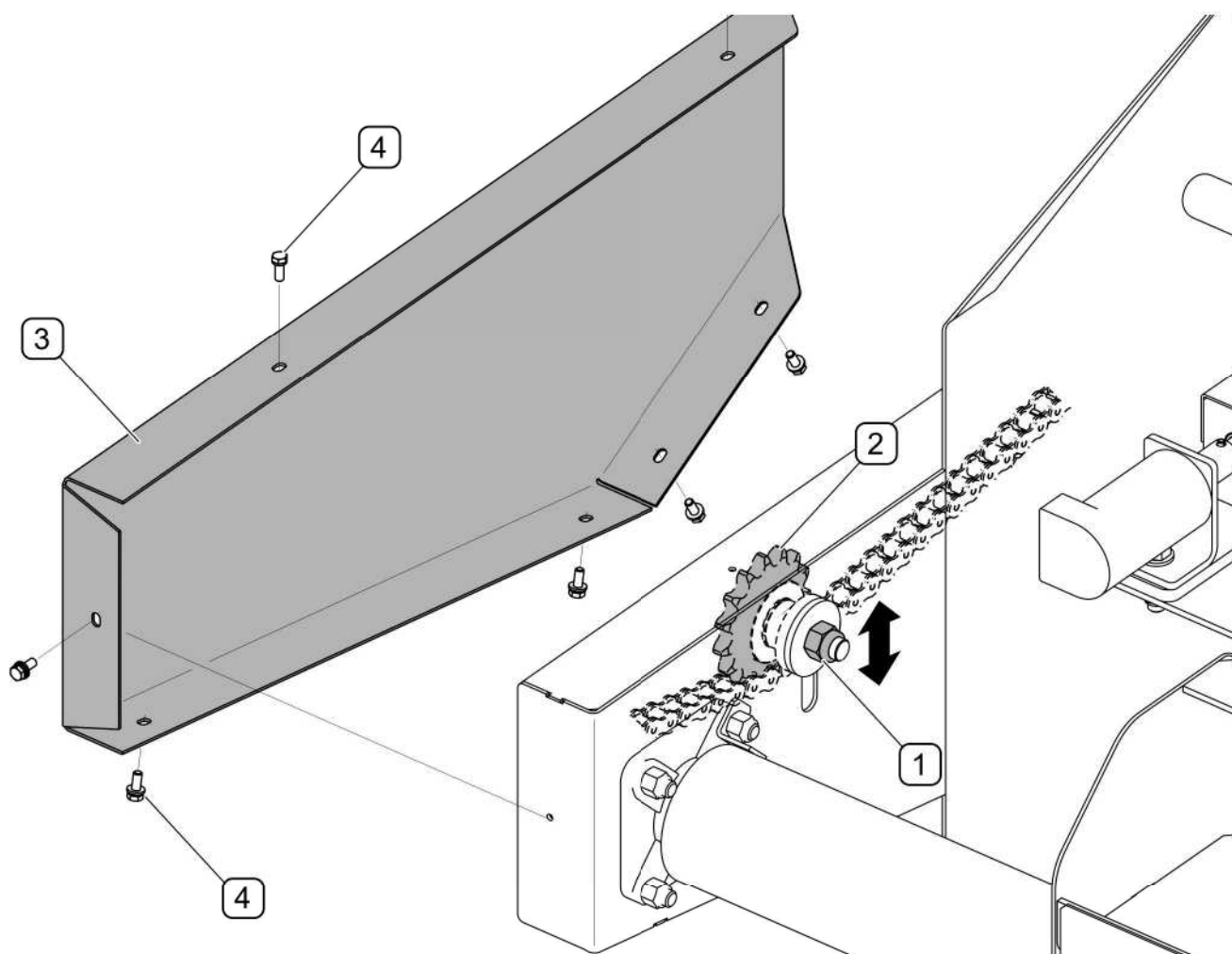


FIG. 5.2 Adjusting the chain transmission

(1) - nut, (2) - tensioner wheel, (3) - cover, (4) - M6x15 bolt



Lubricate chain after every 40 hours. For lubrication use 10W/40 grade gear oil.

5.2.3 REPLACING THE SAFETY BOLTS

PTO shaft and telescopic PTO shaft of the snow blower have special bolts that can be damaged by excessive overloading of the machine. Before replacing bolts check the auger, rotor and the discharge chute and remove the cause of machine overloading (eg, pieces of ice, wood, stone, jammed chute, etc.) To remove blockage, use a wooden pin supplied with the machine (see 4.4.5 REMOVING BLOCKAGES)

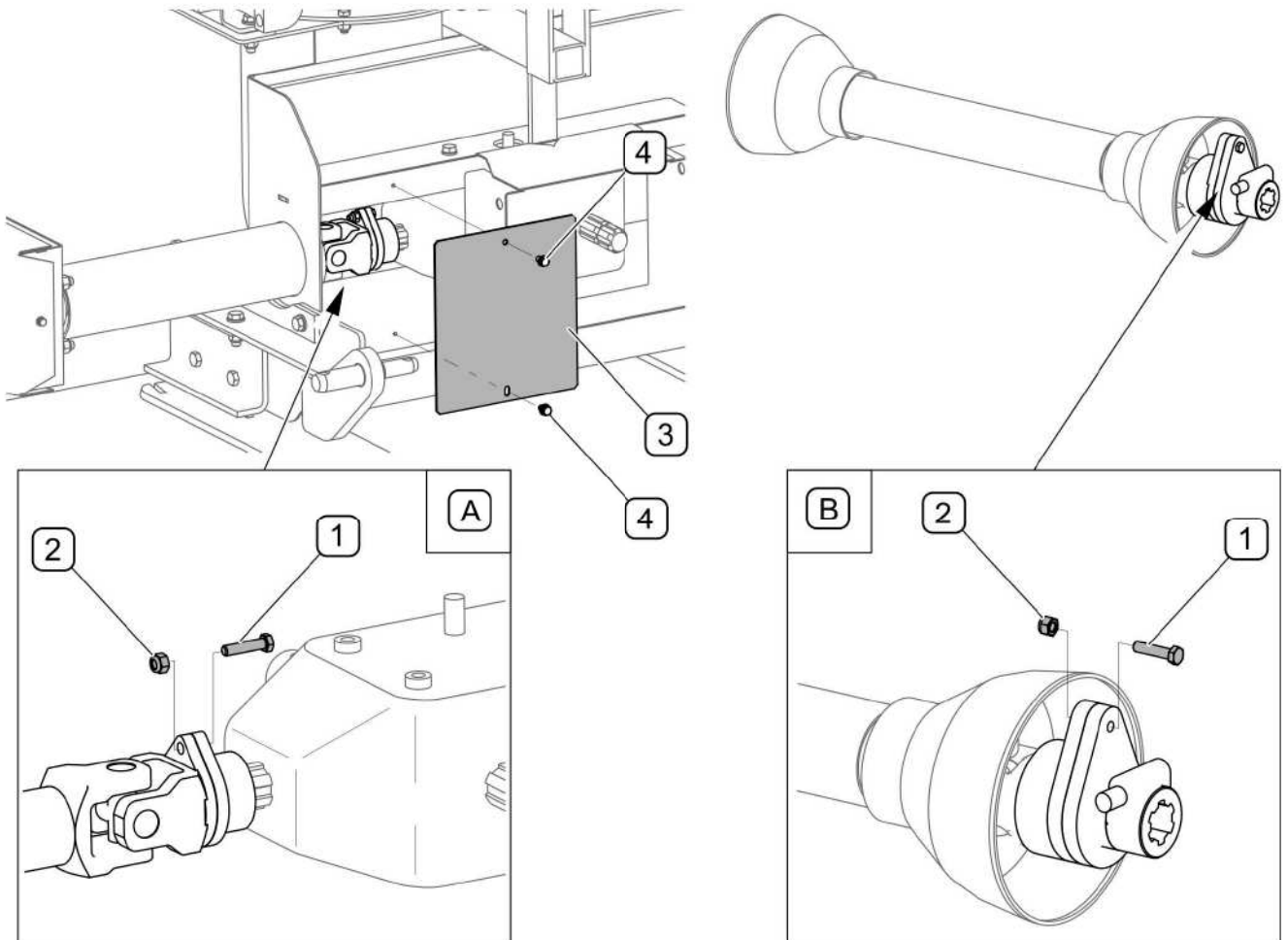



FIG. 5.3 Bolts securing the drive transmission

(A) - securing the PTO shaft (B) - securing the telescopic PTO shaft; (1) - bolt M8x40-5.8, (2) - self-locking nut. M8-5, (3) - cover; (4) - bolt M6x12

5.3 REPLACING THE BLADE



DANGER

If the machine is connected to the tractor, then before you begin the blade inspection and replacement, turn off the machine drive and ensure that unauthorised persons have no access to the vehicle cab.

Snowblower is equipped with two-sided blade. If the edge of the blade is excessively worn, remove the blade, reverse it and re-install. If the blade is worn or damaged on both sides it should be replaced. The list of blade elements TAB. 5.2

TAB. 5.2 THE LIST OF BLADE ELEMENTS

Marking FIG. 5.4	Name / Catalogue No.	Number of items
1	Blade / 142N-00000001	1
2	Bolt M12x35-8.8 PN-EN ISO 4017	6
3	Self locking nut M12-8 PN-EN ISO 7040	6
4	Washer 12-100HV PN-EN ISO 7091	6

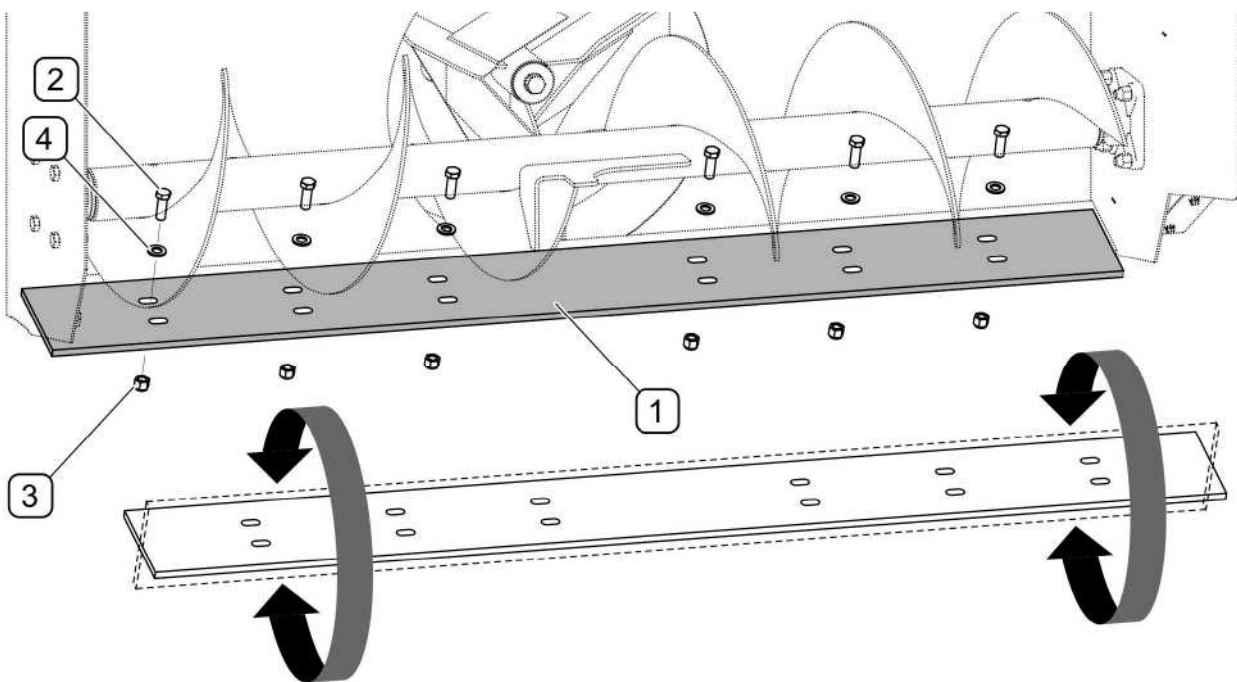


FIG. 5.4 Replacing the blade

(1) - blade, (2) - bolt M12x35-8.8, (3) - nut M12-8, (4) - washer 12-100HV

Technical condition of the blade should be inspected periodically and attention should be paid to mechanical damage, excessive wear and any missing securing elements.

5.4 SKID REPLACEMENT

Excessively worn or damaged skids must be replaced. In order to do this raise the snowblower and support with sufficiently stable and strong supports. If the machine is hitched and raised on the three-point linkage, protect it from falling and immobilise the tractor (turn off the engine and engage the parking brake.) Remove the nuts (4), remove the bolts (3) mounting skid (1) to the frame (FIG. 5.5). Check skid check for damage or excessive wear. The list of skid elements with catalogue numbers is shown in TAB. 5.3.

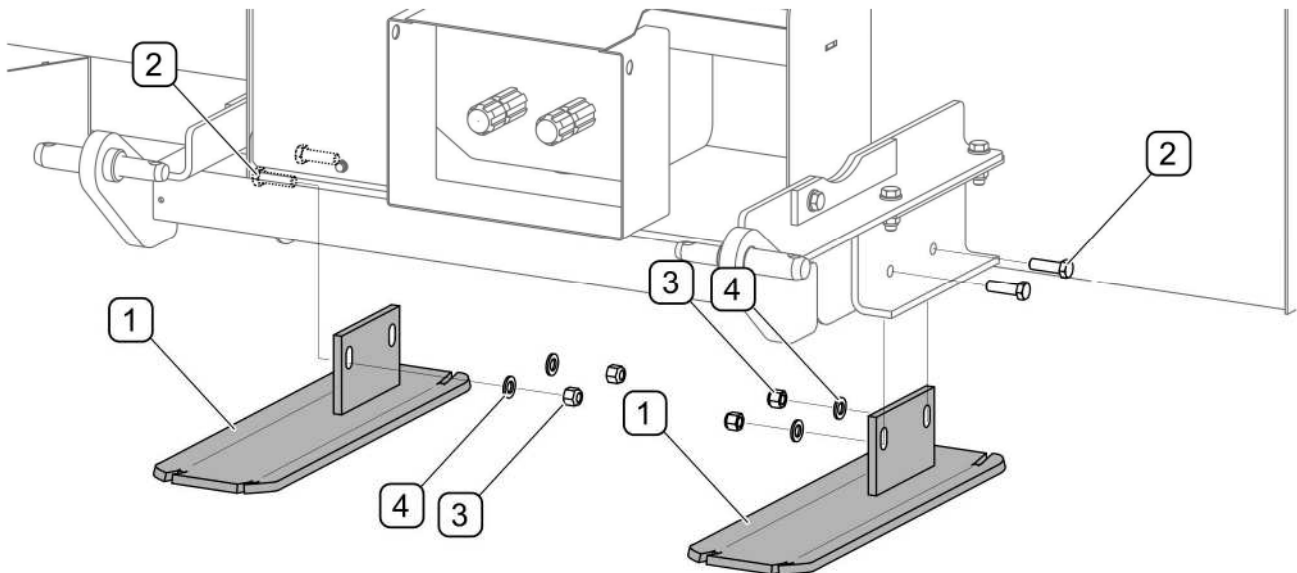


FIG. 5.5 Skid adjustment and replacement


(1) - skid; (2) - bolt M12x40; (3) - nut M12; (4) - washer 12-100HV


TAB. 5.3 THE LIST OF SKID ELEMENTS

Marking FIG. 5.5	Name / Catalogue No.	Number of items
1	Skid /142N-09000000	2
2	Bolt M12x40-5.6 PN-EN ISO 4017	4
3	Self locking nut M12-8 PN-EN ISO 7040	4
4	Washer 12-100HV PN-EN ISO 7091	4

5.5 LUBRICATION

Before commencing lubrication insofar as is possible remove old grease and other contamination. Remove and wipe off excess oil or grease The following permanent grease is recommended for lubrication: ŁT-43-PN/C-96134.

	<p>DANGER</p> <p>Lubrication may only be performed when the machine is disconnected from the tractor.</p>
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	<p>When using the machine the user is obliged to observe lubrication instructions according to attached schedule. Excess lubrication substance causes depositing additional contaminants in places requiring lubrication, therefore it is essential to keep individual machine elements clean.</p>
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TAB. 5.4 LUBRICATION POINTS AND LUBRICATION FREQUENCY

ITEM	NAME	NUMBER OF LUBRICATION POINTS	TYPE OF GREASE	LUBRICATION FREQUENCY
A	Discharge chute	1	permanent grease	40 hours
B	Chain transmission roller bearing	1	permanent grease	20 hours
C	Auger bearing	2	permanent grease	20 hours
D	PTO shaft cross	1	permanent grease	20 hours
E	Surface of multi-splined shaft	1	Grease	20 hours
F	Gear:	1	gear oil GL-4 80W/90	500 hours
G	Chain	1	engine oil 10W/40	40 hours
H	PTO shaft *	*	*	*

* For detailed information on maintenance please refer to operator's manual attached to the shaft.

Marking description in Item column (TAB. 5.4) conforms with numbering shown (FIG. 5.6)

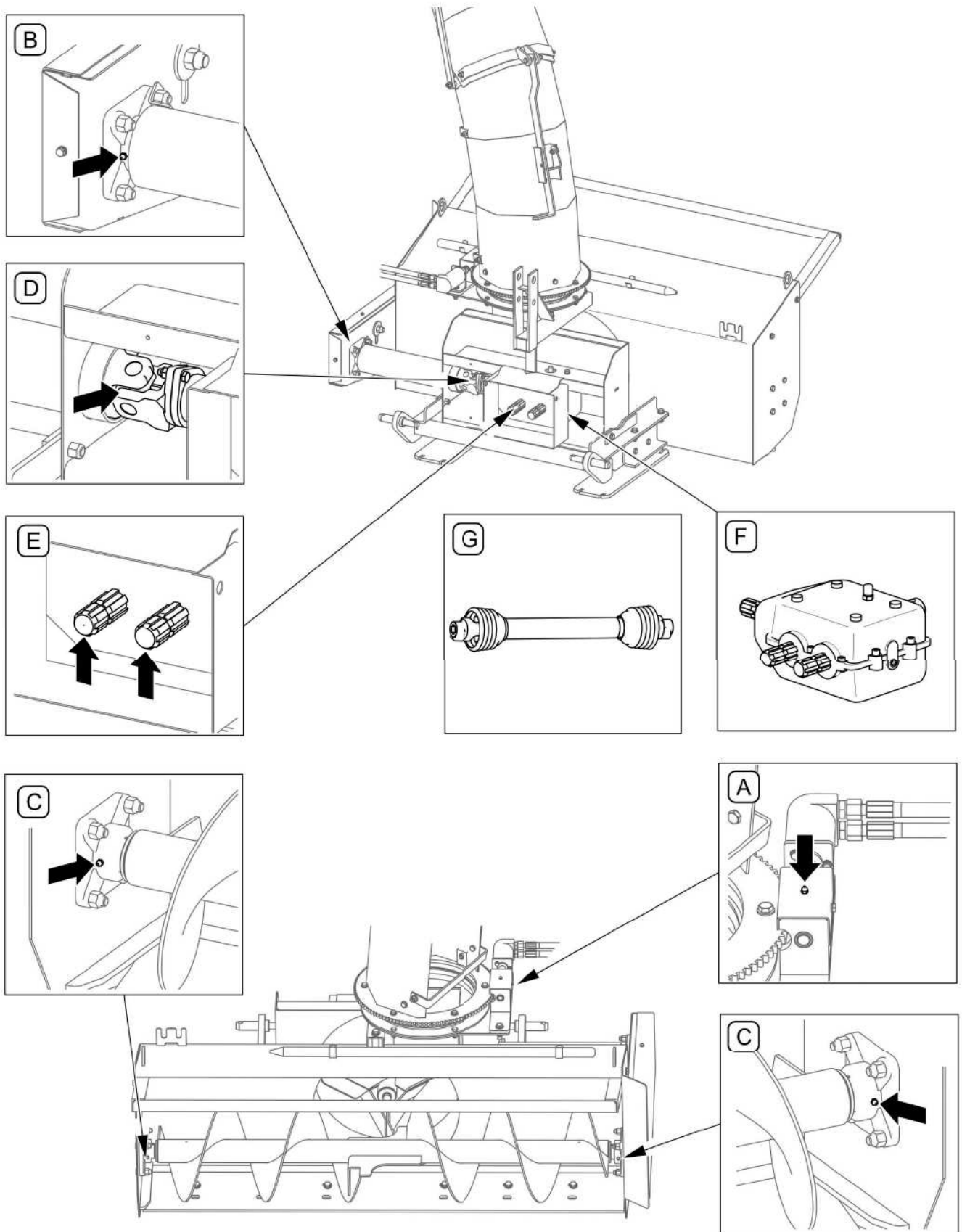


FIG. 5.6 **Lubrication points**

Lubrication points described in table 5.4

5.6 STORAGE

After finishing work, machine should be thoroughly cleaned and washed with water jet. While washing do not direct a strong water or steam jet at information and warning decals or hydraulic conduits. Nozzle of pressure or steam washer should be kept at a distance of not less than 30 cm from cleaned surface.

After cleaning, inspect the whole machine, inspect technical condition of individual elements. Used or damaged elements should be repaired or replaced.

In the event of damage to the paint coat, clean rust and dust from damaged area, degrease and then paint with undercoat and after it is dry paint with surface coat paint retaining colour uniformity and even thickness of protective coating. Until the time of touch-up painting, the damaged place may be covered with a thin layer of grease or anticorrosion preparation. Machine should be kept in closed or roofed building.

If the machine shall not be used for a long period of time, protect it against adverse weather conditions. Lubricate machine according to the instructions provided. In the event of prolonged work stoppage, it is essential to lubricate all elements regardless of the period of the last lubrication process. Additionally before the winter period apply grease to hitching system pins.



ATTENTION!

Remains of material containing salt cause quick corrosion of metal parts.

5.7 TIGHTENING TORQUE FOR NUT AND BOLT CONNECTIONS

During maintenance and repairs use appropriate torque for bolt connections (unless other is specified for a particular connection). Recommended torque values apply to non-greased steel bolts (TAB. 5.5).



ATTENTION!

Should it be necessary to change individual parts, use only original parts or those indicated by the Manufacturer. Non-adherence to these requirements may put the user and other people's health and life at risk, and also damage the machine.

TAB. 5.5 TIGHTENING TORQUE FOR NUT AND BOLT CONNECTIONS

THREAD DIAMETER [mm]	5.8	8.8	10.9
	TIGHTENING TORQUE [Nm]		
M6	8	10	15
M8	18	25	36
M10	37	49	72
M12	64	85	125
M14	100	135	200
M16	160	210	310
M20	300	425	610
M24	530	730	1,050

5.8 TROUBLESHOOTING

TAB. 5.6 TROUBLESHOOTING

TYPE OF FAULT	CAUSE	REMEDY
Rotor and auger do not rotate	Telescopic PTO shaft disconnected	Connect PTO shaft
	Tractor PTO faulty or disconnected	Check the PTO on the tractor
	Damaged securing bolt on PTO	Check the cause, if necessary, replace the bolt
	Damaged gear	Check for damage, refer repair to service, if necessary
Rotor and auger rotate in the wrong direction	Incorrect connection of telescopic PTO shaft	If necessary, transfer the shaft to the other end of the gear
Only the rotor rotates	Damaged securing bolt on the PTO shaft	Check the shaft, if necessary, replace the bolt
The discharge chute rotation mechanism does not work	Snow blower hydraulic conduits not connected	Connect the conduits to the corresponding tractor external hydraulic system outlets
Incorrect discharge	Incorrect machine settings	Set the range and direction if discharge, test operation and adjust the settings.
	PTO speed too low	Increase engine RPM
	Discharge chute partially jammed	Check and clean if necessary
Snow blower drive stops too frequently	Wet, dense snow Driving too fast	Increase the engine speed, reduce driving
	Frozen snow on snow blower working elements	Check and clean if necessary
Layer of snow is not collected	Skids set too high	Check and adjust, if necessary
	Snowblower tilted in the direction of the tractor	Adjust by changing the length of the central link
	Excessively worn or damaged blade	Check and reverse, if necessary

NOTES

A series of horizontal dotted lines for writing notes.

