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OPERATOR'S MANUAL

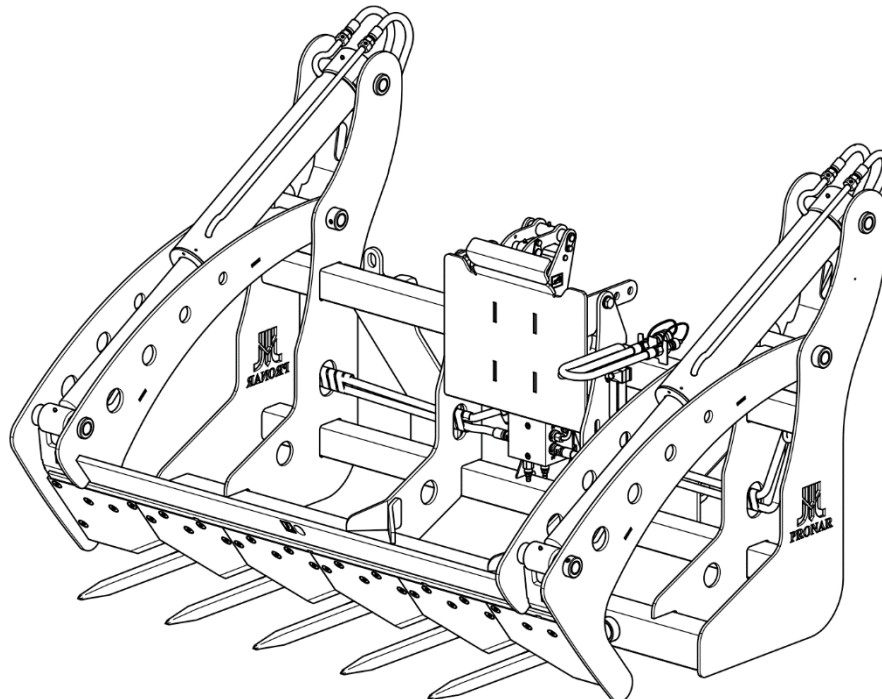
FRONT LOADER IMPLEMENTS

LINKAGE TYPE: EURO

BALE CUTTER

PRONAR PB-1.5 EW

TRANSLATION OF THE ORIGINAL COPY OF THE MANUAL



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EN

FRONT LOADER IMPLEMENTS
LINKAGE TYPE: EURO

BALE CUTTER
PRONAR PB-1.5 EW

MACHINE IDENTIFICATION

TYPE:

SERIAL NUMBER:

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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 failure-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 implement. If the information stated 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 with the sign:



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:	Bale cutter
Type:	PB-1.5EW
Model:	—
Serial number:	
Commercial name:	Bale cutter PRONAR PB-1.5EW

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 2017-02-14

Place and date

Z-CARDYREKTORA
d/s technicznych
członek zarządu

Romana Dzielianiuk

*Full name of the empowered person
position, signature*

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SECTION

1

BASIC INFORMATION

1.1 IDENTIFICATION

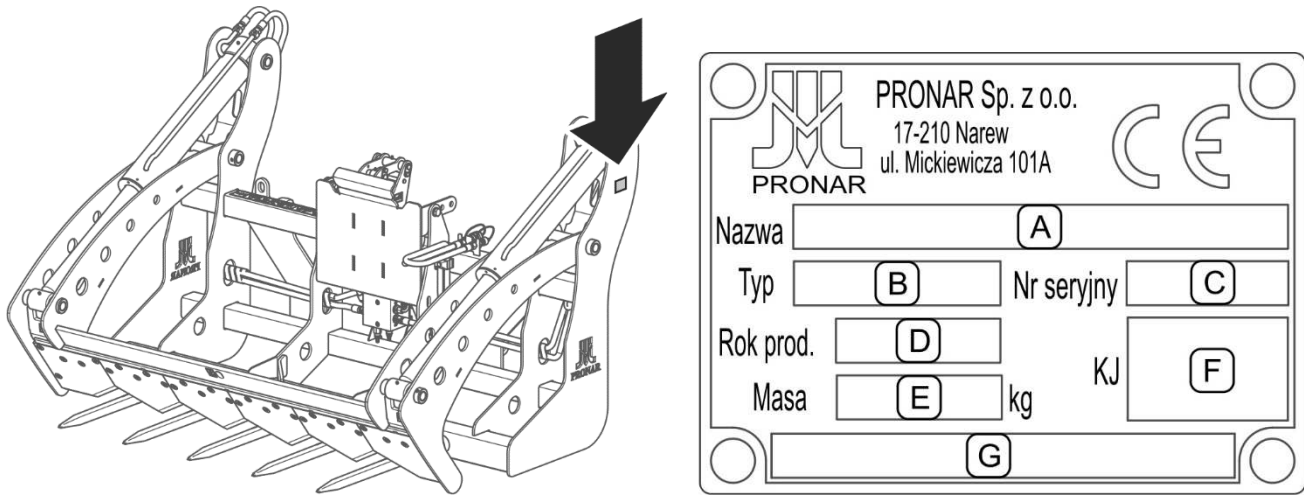


FIGURE 1.1 Location of the data plate

Meaning of data plate items (FIGURE 1.1):

- A - machine name
- B – type
- C – serial number
- D – year of manufacture
- E – machine tare weight [kg]
- F – Quality Control stamp
- G – linkage type e.g. EURO

Serial number is stamped on the data plate. Data plate is located on the frame on the left side of the machine (FIGURE 1.1). When buying the machine, check that the serial number corresponds with that indicated in the *WARRANTY BOOK*, in the sales documents and in the *OPERATOR'S MANUAL*.

1.2 PROPER USE

The implement described in this Operator's Manual is designed for the front loaders equipped with EURO linkage.

The bale cutter is used for cutting haylage or straw bales with diameter of 1.2÷1.5 m and width up to 1.35 m, transporting bales to feeding places, preparing the feed and loading bales to feed wagons. The implement may be used for transporting bales only at short distances.

This implement may be used only in agriculture, forestry and municipal services. The use of the machine for other purposes should be regarded as improper.

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 carrying vehicle's Operator's Manual,
- have been trained in machine operation and safe working conditions,
- have the required authorisation to drive the carrying vehicle and are familiar with the road traffic regulations.

ATTENTION



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

- for transporting people and animals,
- for a long-distance transport of materials and for transporting materials other than specified in the Operator's Manual.

TABLE 1.1 Front loader requirements

	UNIT	REQUIREMENTS
Implement attachment system	-	EURO
The implement hydraulic control system	-	YES
Hydraulic couplers	-	socket and plug of hydraulic couplers: size ½" ISO7241-1, series A
Nominal pressure in the front loader's hydraulic system	MPa	18.5
Type of oil	-	hydraulic, HL32

1.3 EQUIPMENT

The implement equipment includes:

- The Operator's Manual;
- Warranty Book

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 Warranty Service. 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.

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, 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, repairs carried out improperly,
- 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. For detailed Terms & Conditions of Warranty, please refer to the *WARRANTY BOOK* attached to each newly purchased 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 implement is ready 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.

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



DANGER

Do not transport the implement hung on the front loader on public roads.



DANGER

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.

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.

The machine should be attached to lifting equipment in places specially designed for this purpose (FIGURE 1.2), i.e. by the lugs on the frame and using the opening in the centre of the cutter frame. Suspension points are identified with information decals. When lifting the machine take particular care due to 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 ropes. During the loading work particular care should be taken not to damage paint coating.

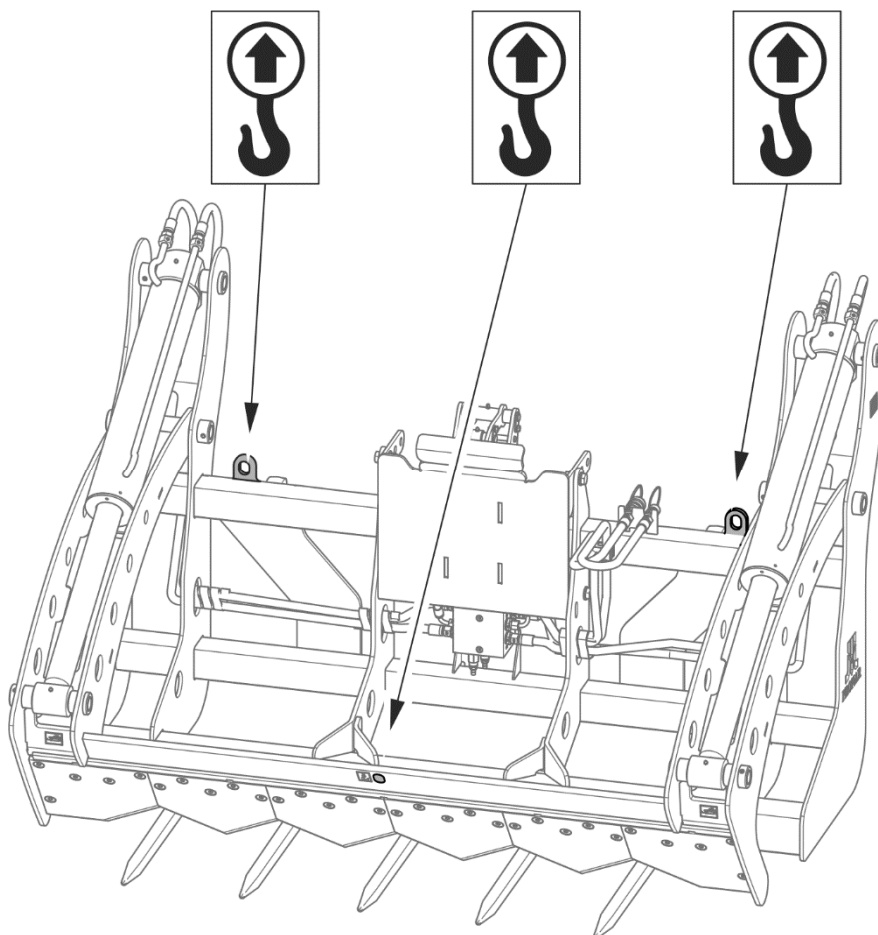


FIGURE 1.2 Transport lugs

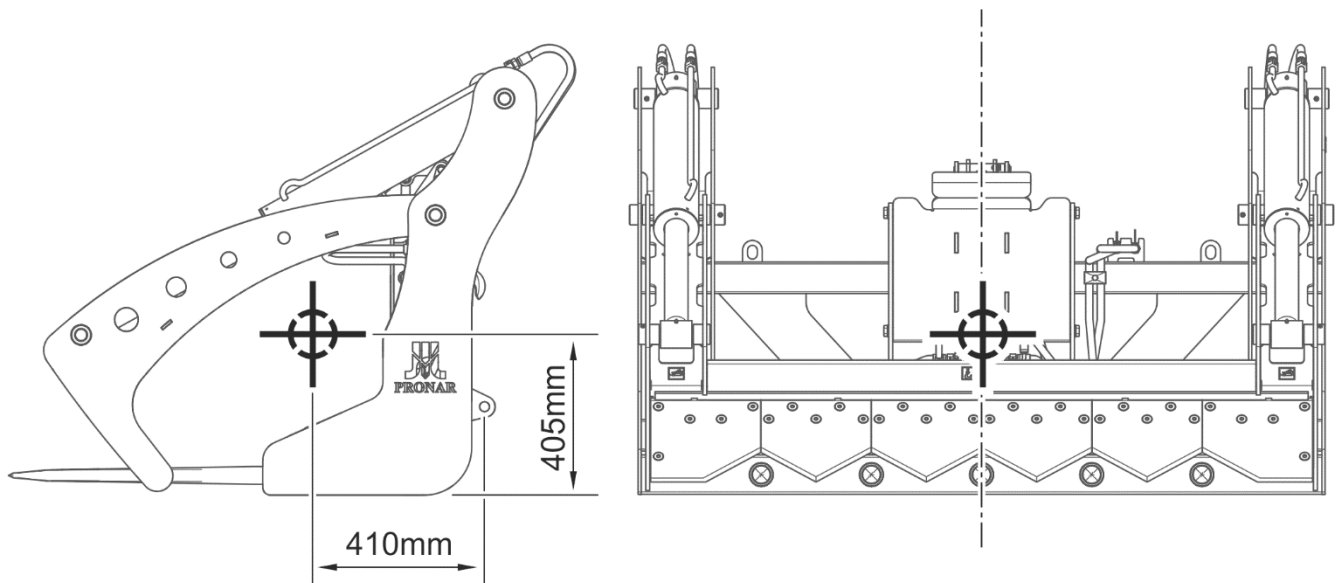


FIGURE 1.3 Centre of gravity



ATTENTION

Depending on the machine setting, location of centre of gravity (FIGURE 1.3) varies in the range of ± 30 .



ATTENTION

Do NOT secure lifting slings or any types of load securing elements to hydraulic cylinders and conduits.



DANGER

During loading and transport, the cutter frame should be closed.

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 contaminations, 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.

Before proceeding to dismantle machine, oil shall be completely removed from hydraulic system. Hydraulic system components should be disassembled by the appropriately qualified persons.

When spare parts are changed, worn out or damaged parts should be taken to a collection point for recyclable raw materials. Used oil and also rubber and plastic elements should be taken to the appropriate facilities dealing with the recycling of this type of waste.



ATTENTION

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 implement, the user must carefully read this Operator's Manual and the *WARRANTY BOOK*. When operating the machine, the operator must comply with all recommendations contained in the Operator's Manual.
- The implement may only be used and operated by persons qualified to drive carrying vehicles and trained in the use of the implement.
- If the information in this Operator's Manual is difficult to understand, contact the dealer, who runs an manufacturer authorised service, or contact the manufacturer directly.
- Careless and improper use and operation of the implement, and non-compliance with the recommendations given in this operator's manual is dangerous to your health.
- Be aware of the existence of a residual risk, and for this reason the fundamental basis for using this implement should be the application of safety rules and sensible behaviour.
- The implement must never be used by persons, who are not authorised to drive carrying vehicle, 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 implement 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 implement may only be used when all the protective elements and warning decals are correctly positioned and technically sound. In the event of loss or destruction of the safety guards, they must be replaced with new ones.

2.1.2 LINKING AND DISCONNECTING THE IMPLEMENT

- Do NOT hitch the implement to the carrying vehicle if different types of hydraulic oil are used in both machines, or if the implement's linkage is not compatible with the loader's linkage.
- After completion of hitching to front the loader, check the safeguards. Carefully read the loader Operator's Manual.
- Loader carrying the implement must be in good working order and must comply with the requirements of the implement manufacturer.
- Be especially careful when hitching the implement to the loader.
- When hitching, there must be nobody between the loader and the implement.
- Before unhitching the implement from the loader, empty and close the grab.
- Exercise caution when unhitching the implement.
- The implement unhitched from the loader must be placed on level, sufficiently hard surface in such a manner as to ensure that it is possible to hitch it again.

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 the hydraulic system malfunction, discontinue using the machine until the malfunction is corrected.
- When connecting the loader's hydraulic conduits, make sure that the hydraulic systems of the loader and the implement 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.
- Hydraulic conduits must be changed 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

- Do not exceed maximum transport speed of 15km/h (i.e travel speed without load). Adjust driving speed to the road conditions.
- Do not transport people and animals on the implement.
- For the duration of the transport protect the loader from accidental use.
- All travel back and forth during loading/unloading should be with the implement lowered down so that it does not obscure visibility and does not have any contact with the ground.
- Do not drive on public roads with implements mounted on loader.
- Reckless driving and excessive speed may cause accidents.

2.1.5 MAINTENANCE

- During the warranty period, any repairs may only be carried out by 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 implement until the fault has been fixed.
- 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, turn off carrying vehicle's 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 implement.
- Before beginning work 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 carrying vehicle's engine turned off and the ignition key removed. Immobilise carrying vehicle with parking brake. Ensure that unauthorised persons do not have access to the cab.
- 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 warranty.
- 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 implement to be raised, use properly certified lifts. After lifting the implement, stable and durable supports must also be used.
- The implement must not be supported using fragile elements (bricks or concrete blocks).
- After completed lubrication, remove excess of grease.

- In order to reduce the danger of fire the implement must be kept in a clean condition.

2.1.6 OPERATING THE IMPLEMENT

- Before starting the machine make sure that there are no bystanders or animals in the danger zone. The machine operator is obliged to ensure proper visibility of the machine and the working area.
- Before starting work, the user must carefully acquaint himself with the workplace and its surroundings.
- Before lifting or lowering the implement hitched to the loader, make sure that there are no bystanders near the machine.
- During implement 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.
- Do NOT stand within the implement's working zone.
- The front loader and the implement may not be fitted with lifting slings or used for loading, unloading and mounting work with such equipment, because the safety of the employees in the working zone is not guaranteed.
- Keep a safe distance from overhead electric power lines during work with raised implement.
- Do not exceed the maximum speed of 6 km/h when travelling with the implement.
- The load placed on or in the implement should be distributed evenly.
- Do not work with front loader (scraping, levelling) with the implement set vertically downwards.
- Do not raise load to extreme height on gradients or slopes. Take note of uneven terrain and its load bearing capacity.
- Do not transport or load and unload materials for which the implement is not designed.
- When driving with loads do not make sharp turns or brake suddenly.

- When driving with load, braking distance is increased, therefore be particularly careful when travelling on gradients or slippery surfaces.
- Do not leave raised and unsecured implement. When parked, the implement should be lowered.
- Before using the implement always check its technical condition, especially in terms of safety. In particular, check the technical condition of the securing elements and the hydraulic system.

2.2 RESIDUAL RISK

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

- using the implement for purposes other than those for which it is intended,
- being between the carrying vehicle and the implement while the engine is running and when the implement is being attached,
- being on the implement while the engine is running,
- operating the implement with removed or defective safety guards,
- not maintaining safe distance from the danger zone or being within the zones while the implement is operating,
- operation of the carrying vehicle and the implement by unauthorized persons or persons under the influence of alcohol,
- cleaning, maintenance and technical checks when carrying vehicle 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 implement,
- reasonably apply all the remarks and recommendations stated in the Operator's Manual,
- carry out repairs and maintenance work in line with operating safety rules,
- carrying out repair and maintenance work by persons trained to do so,

- use close fitting protective clothing,
- ensuring unauthorised persons have no access to the carrying vehicle or the implement, especially children.
- maintain a safe distance from forbidden or dangerous places
- do not climb on the implement 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 the machine in operation. 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.

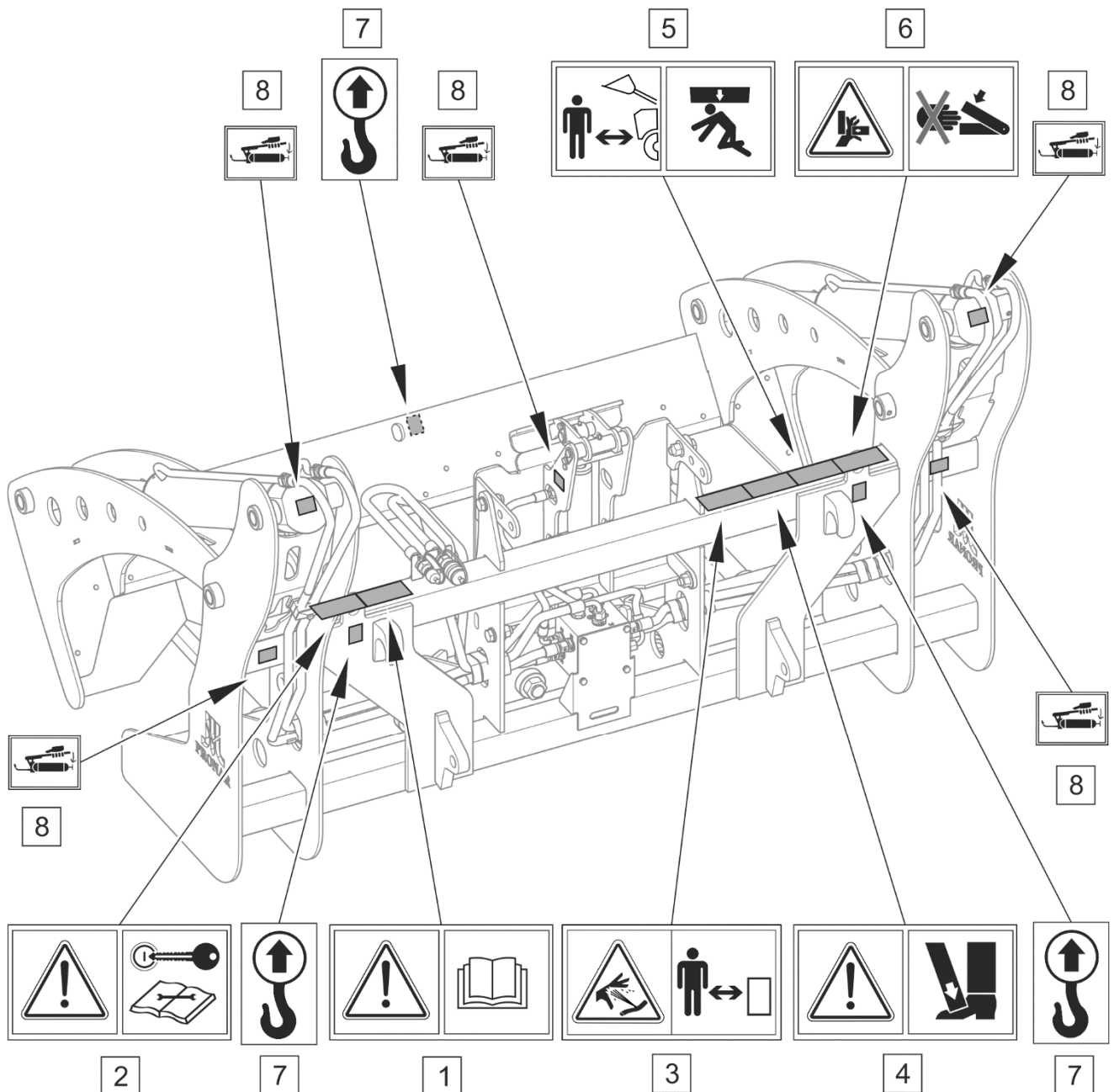




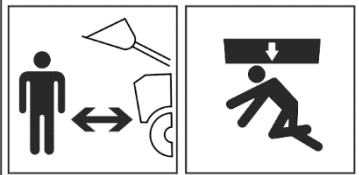





FIGURE 2.1 Locations of information and warning decals.

Meanings of symbols are described in TABLE 2.1

TABLE 2.1 Information and warning decals

ITEM	SYMBOL	DESCRIPTION
1		<p>Before starting work, carefully read the Operator's Manual.</p>
2		<p>Before beginning servicing or repairs, turn off engine and remove key from ignition</p>
3		<p>Pressurised liquid. Keep a safe distance from the operating machine.</p>
4		<p>Danger of crushing legs or feet.</p>
5		<p>Keep a safe distance from the raised front loader or the implement. Danger of crushing</p>
6		<p>Do not reach into crushing space because elements may move. Danger of crushing hands or fingers</p>
7		<p>Lifting equipment attachment points while loading the machine</p>
8		<p>Lubrication points</p>

Numbers in the item column correspond to decals (FIGURE 2.1)

SECTION

3

**DESIGN
AND OPERATION**

3.1 TECHNICAL SPECIFICATION

TABLE 3.1 BASIC TECHNICAL DATA

Name	-	Bale cutter
Model	-	PB-1.5 EW
Bale diameter	mm	1,200÷1,500
Cutting width	mm	1,350
Opening height	mm	1,450
Depth to stop (adjustable)	mm	850÷950
Height (after opening)	mm	1,700
Height (after closing)	mm	1,100
Total width	mm	1,780
Depth (after closing)	mm	1,350
Number of vertical teeth	pc.	6
Spacing of teeth	mm	300
Number of forks	pc.	5
Spacing of forks	mm	280
Weight	kg	500
Number of hydraulic cylinders: - of the cutter	pc.	2
- of the holder	pc.	1
Power supply	-	Hydraulic (1 pair of quick couplers)
Control	-	Using implement control section
Nominal pressure in the system	MPa	18.5 MPa
Mounting method		EURO

Noise level does not exceed 70 dB (A)

3.2 GENERAL DESIGN

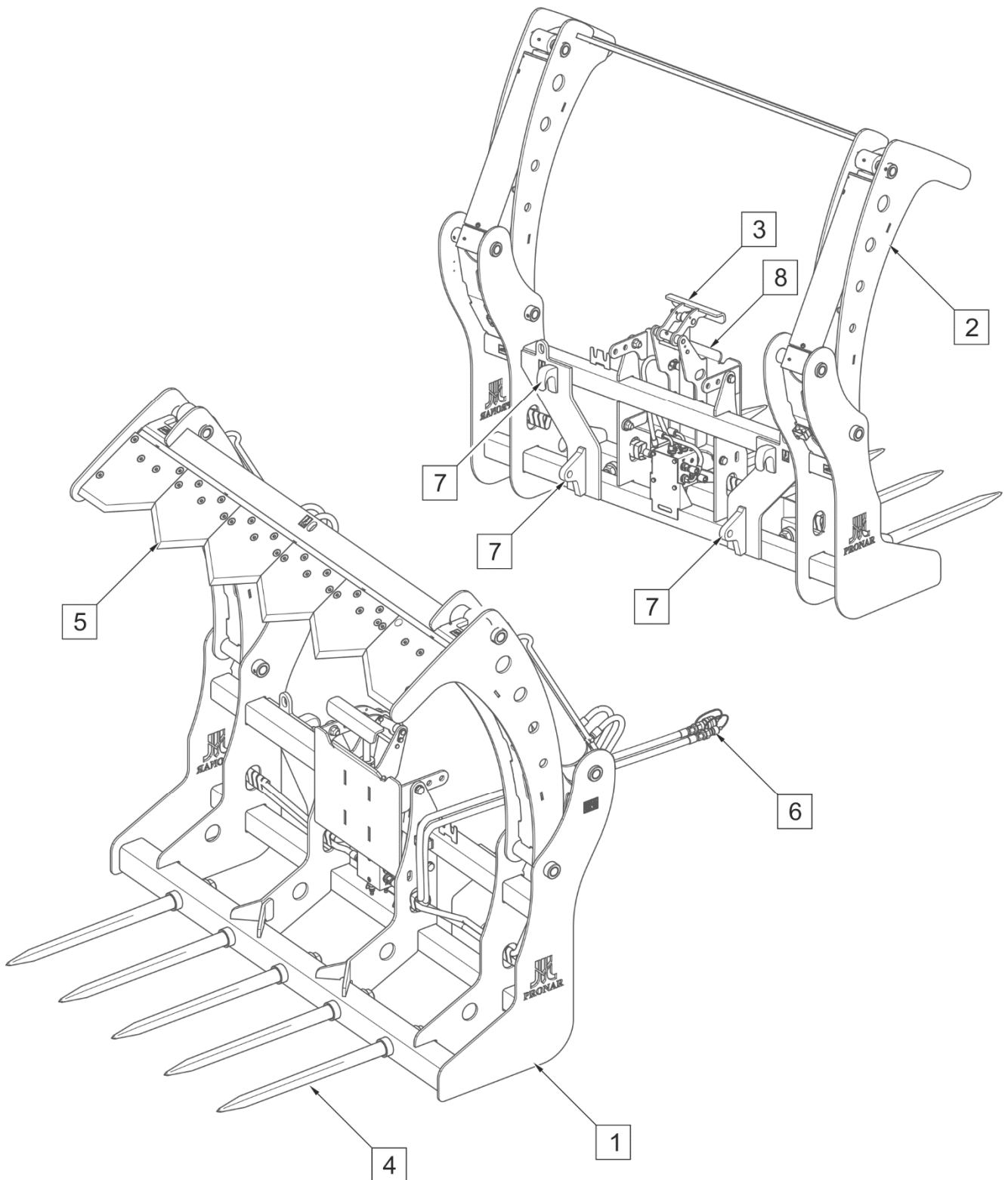


FIGURE 3.1 General design

(1) - frame; (2) - cutter frame; (3) - film or net holder; (4) - fork; (5) - cutting teeth;
(6) - hydraulic system; (7) - fixing elements; (8) - adjustable stop

The bale cutter consists of a steel welded frame (1) equipped with the elements fixing the cutter to the front loader. Fork (4) for holding the bale is mounted in the frame. Adjustable stop (8) and hydraulically controlled film or net holder (3) are mounted on the frame. Moving cutter frame (2) with replaceable teeth (5) is mounted to the frame. Opening and closing of the cutter frame and the holder are performed by means of the hydraulic system (6).

3.3 HYDRAULIC SYSTEM

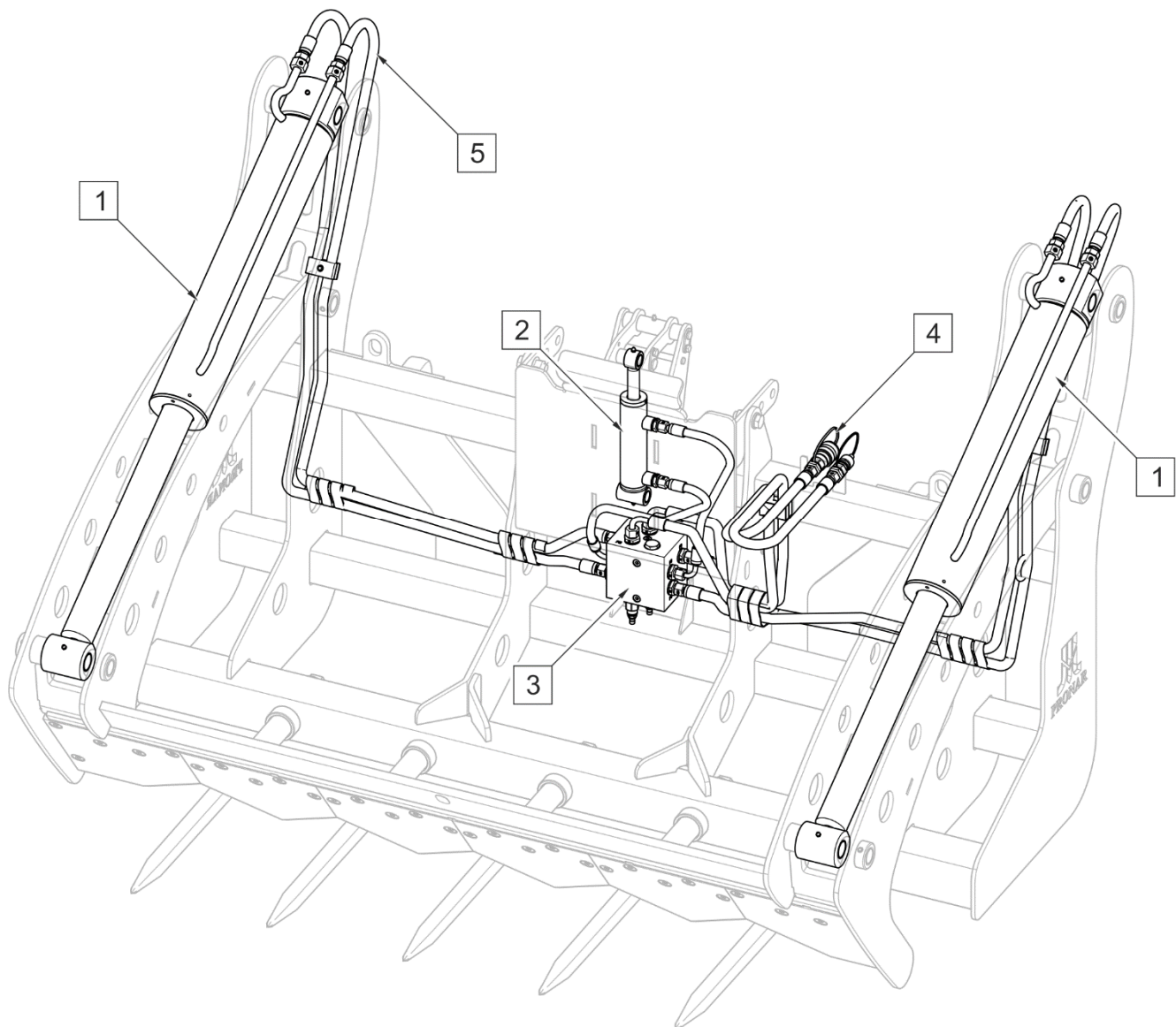


FIGURE 3.2 Hydraulic system design

(1) - cutter frame hydraulic cylinder; (2) - holder hydraulic cylinder; (3) - valve block;
 (4) - hydraulic quick couplers; (5) - hydraulic conduits

The cutter frame is opened and closed by two hydraulic cylinders (1). The holder opening takes place when the cutter frame is maximally opened. The holder is closed by means of the

cylinder (2) when squeezing the bale. Hydraulic conduits terminated with quick couplers (4) are used for connecting the bale cutter's hydraulic system with the front loader's hydraulic system. The bale cutter is controlled by means of one hydraulic section for controlling the front loader's implement.

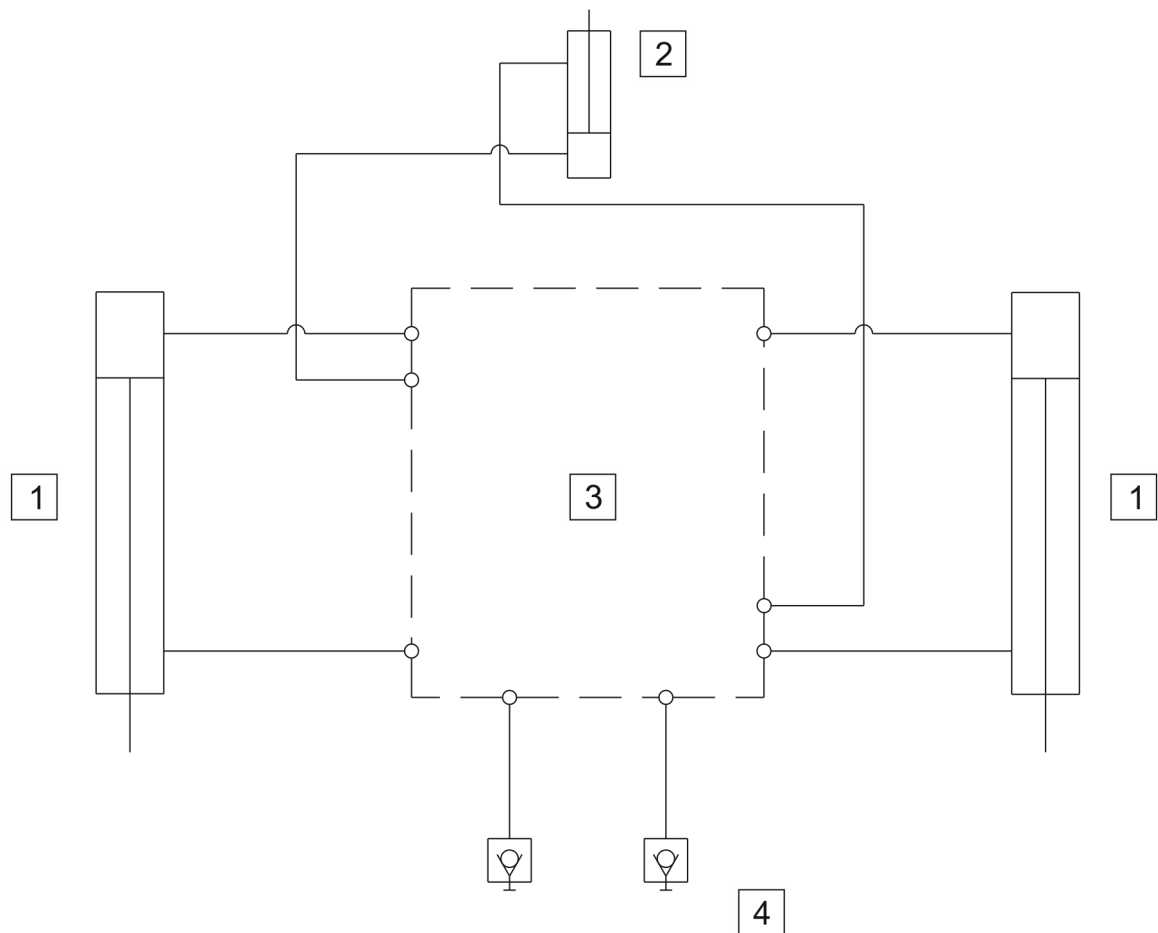


FIGURE 3.3 Hydraulic system concept diagram

(1) - cutter frame hydraulic cylinder; (2) - holder hydraulic cylinder; (3) - valve block;
(4) - hydraulic quick couplers

SECTION

4

CORRECT USE

4.1 PREPARING FOR WORK

DANGER



Before using the implement, the user must carefully read this Operator's Manual and the Operator's Manual of the front loader.

Careless and improper use and operation of the implement and non-compliance with the recommendations given in this Operator's Manual is dangerous for the operator and other persons.

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

Before starting the carrying vehicle with the implement, make sure that there are no bystanders in the danger zone.

The manufacturer guarantees that the implement 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 implement's condition after delivery and before first use. The implement is delivered to the user completely assembled. Prior to connecting to the carrying vehicle, the operator must verify the implement technical condition. In order to do this:

- the user must carefully read this Operator's Manual, observe all recommendations and understand the design and the principle of the implement operation,
- check the compatibility of the implement linkage with the suspension system of the front loader,
- check the compatibility of the hydraulic quick couplers,
- 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 technical condition of the hydraulic system,
- inspect the condition of the loader fastening element.

**ATTENTION**

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

The technical condition of the implement before its use must be no cause for concern.

If all the above-mentioned checks have been performed and there is no doubt as to the implement's good technical condition, it can be hitched to the carrying vehicle, started and checked. In order to do this:

- hitch the implement to the carrying vehicle (see *4.3 HITCHING TO FRONT LOADER*),
- connect hydraulic system conduits, confirm correctness of operation and check tightness of the system and cylinders,

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.

**ATTENTION**

Check technical condition of the implement before each use. In particular, check the technical condition of the fixing elements and the hydraulic system.

4.2 CHECK TECHNICAL CONDITION

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


	<p>ATTENTION!</p> <p>Do NOT use unreliable implement.</p>
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TABLE 4.1 TECHNICAL INSPECTION SCHEDULE

DESCRIPTION	MAINTENANCE ACTIVITIES	FREQUENCY
Technical condition of implement	Check technical condition, if complete and correctly mounted.	Before using
Technical condition of the hydraulic system.	Visually inspect the technical condition	
Tightening of bolt and nut connections	Torque values should be according to table (5.5)	Once a week
Lubrication	Lubricate elements according to table <i>LUBRICATION</i> .	According to table 5.6

4.3 HITCHING TO FRONT LOADER

The implement can be hitched to a front loader that meets the requirements specified in Table 1.1 REQUIREMENTS FOR FRONT LOADER.

	<p>ATTENTION</p> <p>Before attaching the implement to the front loader, the user must carefully read the front loader and tractor (carrying vehicle) operator's manual.</p>
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	<p>DANGER</p> <p>When hitching, there must be nobody between the implement and the front loader. Exercise caution when attaching the implement to loader.</p>
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4.3.1 HITCHING TO FRONT LOADER ARM

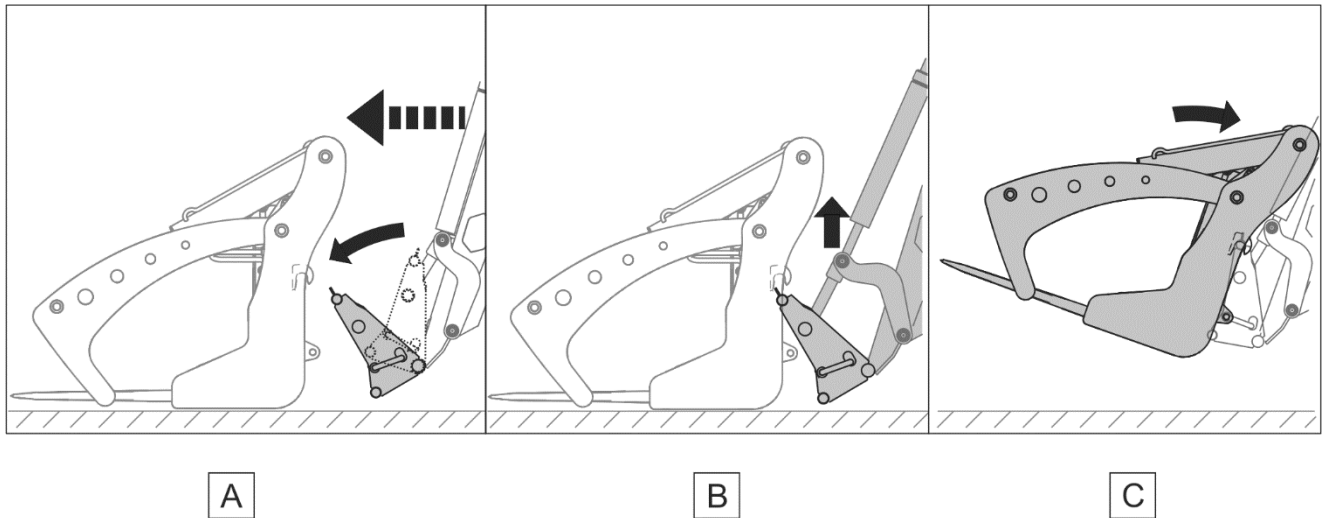


FIGURE 4.1 Hitching to front loader

(A), (B), (C) - successive steps of attaching

Before attaching the implement to the loader, check the compatibility of the implement attachment with the front loader.

In order to hitch the implement to the front loader (FIGURE 4.1):

- unlock the mechanism fixing the implement in the loader frame (*depending on the loader type*),
- lower arm and turn frame downwards (A) so that mounting points on mounting frame are below the mounting points of the implement;
- drive loader close to the implement and insert mounting points in the appropriate places in the loader mounting frame,
- raise the arm (B) so as to place the upper fixing points in the implement's hooks,
- control the arm and tilt the frame backwards (C) in order to lock the fixing mechanism (*depending on the loader type*),
- check correctness of hitching and engage the quick securing mechanism (*depending on the loader type*).

The above method of hitching is described only for reference and may vary depending on the front loader model. A detailed method of connecting attachments is provided in front loader operator's manual.

4.3.2 CONNECTING HYDRAULIC SYSTEM



DANGER

Prior to connecting the hydraulic system conduits the user must carefully read the front loader operator's manual and observe all recommendations of the Manufacturer.



DANGER

When connecting the hydraulic conduits, make sure that the hydraulic systems of the front loader arm and the implement are not under pressure.

The cutter frame is opened and closed by means of so-called third section for controlling implements in the front loader.

In order to connect the implement's hydraulic system to the front loader's system:

- hitch the implement to the front loader arm (*see 4.3.1 HITCHING TO FRONT LOADER ARM*),
- switch off the carrying vehicle's engine, lower the implement until it rests on the ground and reduce residual pressure in the implement control hydraulic system by moving the control lever to the sides while pressing the start push-button of the third section of the manifold (*depending on the loader type*),
- connect the implement's hydraulic couplers to corresponding couplers in the front loader arm (FIGURE 4.2)

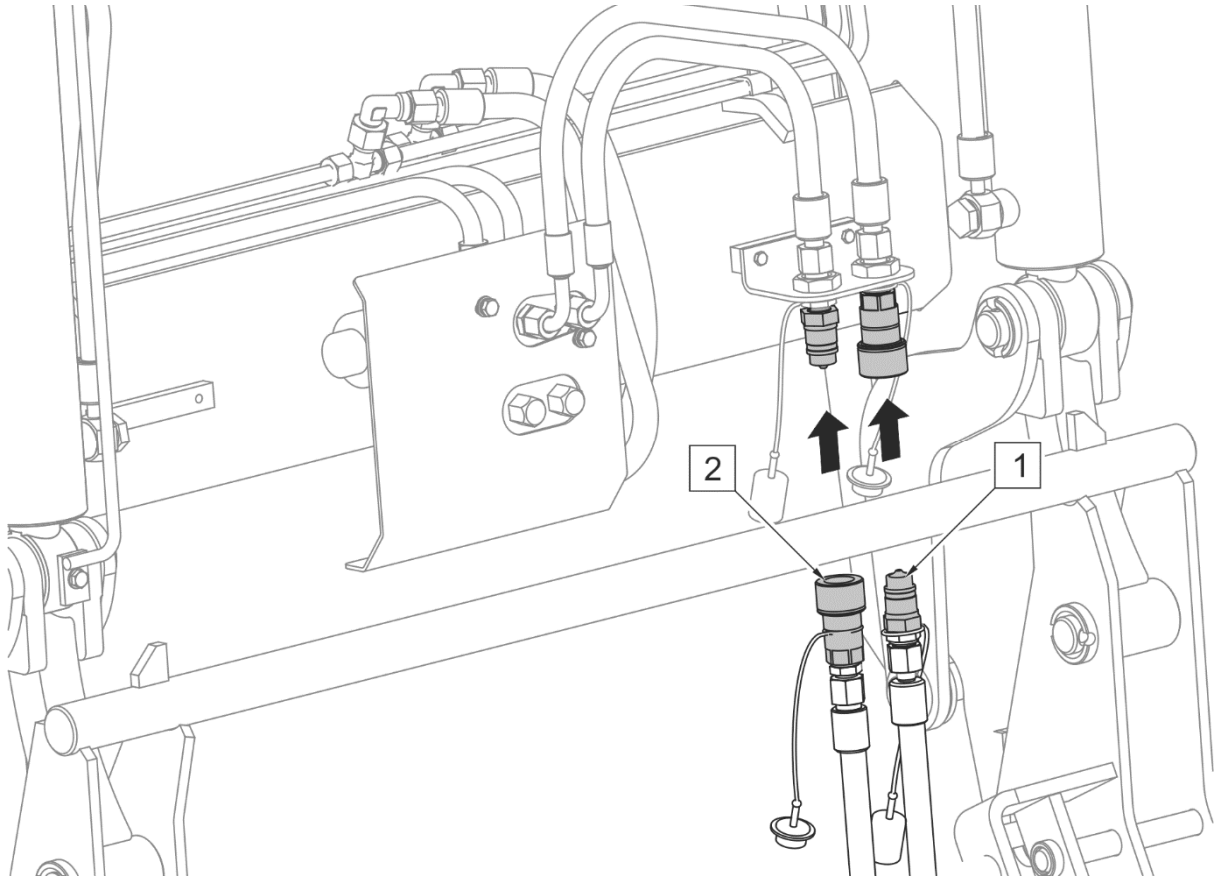


FIGURE 4.2 Connecting the hydraulic system

(1) - hydraulic plug; (2) - hydraulic socket



ATTENTION

The connecting cables should be routed so that they do not get damaged during work.

4.4 OPERATING THE IMPLEMENT



DANGER

Do not carry people or animals in loader implement.
Persons must not be present within range of operating implement.

The working cycle of the front loader with the bale cutter is the following:

- drive to the bale storage place, lower the implement and level it (*implement levelling indicator should be used for this purpose – if installed in the front loader*),
- open the cutter frame completely, drive to the bale until it rests on the stop installed on the bale cutter frame,
- lower the cutter frame until its teeth rest on the bale in order to hold it during travel,
- close the cutter frame in order to grip the film (or raise the loader arm to a minimum height and drive to the unloading area),
- raise the loader arm to a height required for unloading,
- cut the bale by closing the cutter frame completely,
- unload the remaining material (bale) by rising the cutter frame and tilting it forwards,
- open the cutter frame maximally in order to release the film or net holder.



DANGER

The loader implement is controlled from the operator cab.

While driving with loaded implement, do not exceed the maximum permitted speed of 6 km/h and drive with the implement in the lowest possible working position. The implement may be raised to the required height and work action may be completed only at the unloading place.



ATTENTION

Do not exceed a maximum working speed of 6 km/h

Avoid ruts, depressions, ditches or driving on roadside slopes. Driving across such obstacles could cause the carrying vehicle and the loader to suddenly tilt. Driving near ditches or canals is dangerous as there is a risk of the slope collapsing. Speed must be sufficiently reduced before making a turn or driving on an uneven road or a slope.

During tasks requiring higher precision it is recommended to use implement level indicator (*if present in the loader*).



ATTENTION

Do not exceed the permitted carrying capacity of the front loader nor permitted load on the front axle of the tractor (carrying vehicle).

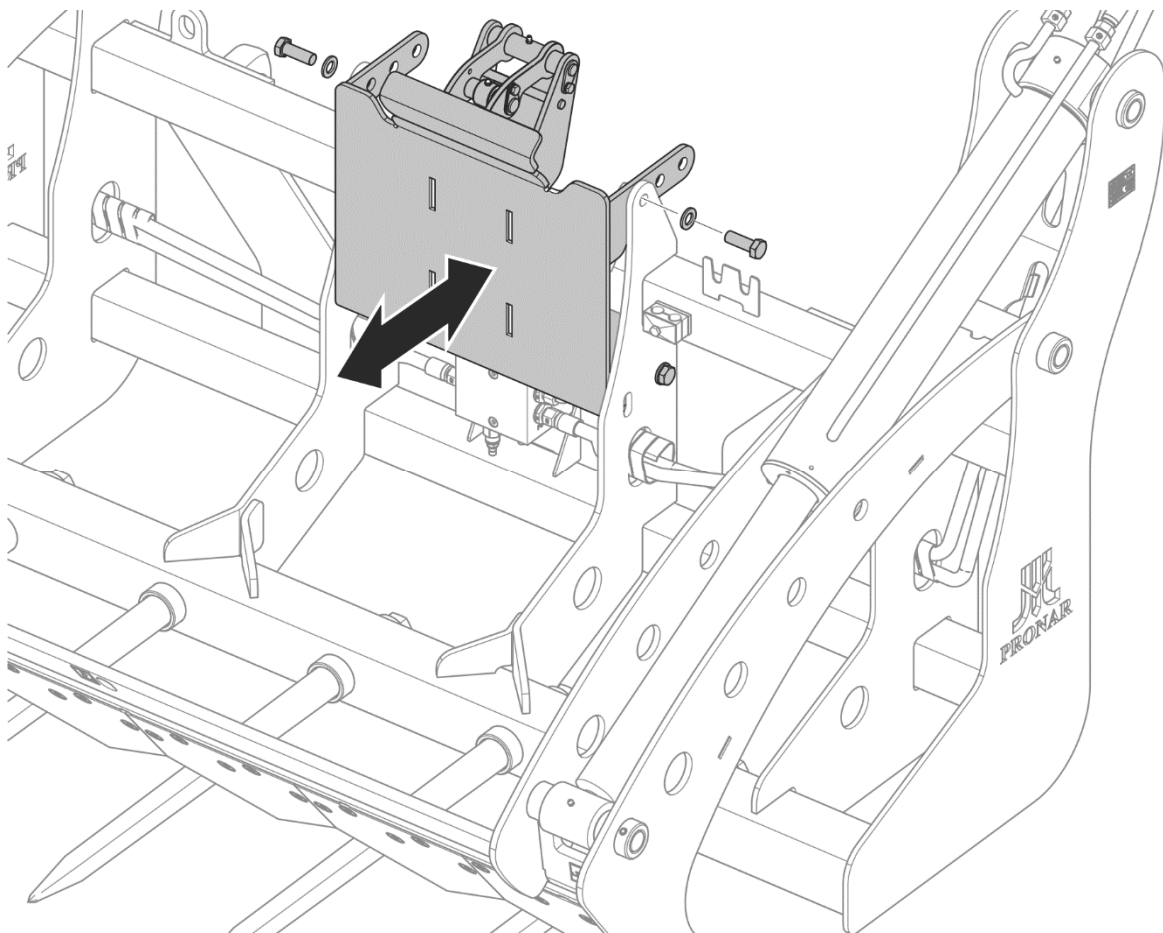


FIGURE 4.3 Setting of the bale stop

Depending on the bale diameter (1.2÷1.5 m), set the stop on the cutter frame (FIGURE 4.3) in a proper manner.

4.5 DISCONNECTING THE IMPLEMENT FROM THE LOADER

Before leaving implement on ground surface set it horizontally. Before unhitching the cutter from the loader, empty and close the cutter. Unhitched implement should be positioned in such a place so that it is possible to hitch it again.



DANGER

Before unhitching the implement, turn off the tractor engine, engage the parking brake and protect the cab against access of unauthorized persons.



DANGER

Reduce pressure prior to disconnecting the hydraulic system.

To demount implement:

- lower the loader arm until the cutter rests on the ground, turn off the carrying vehicle's engine,
- reduce pressure in the implement control hydraulic system by moving the control lever of the third section of the manifold (*depending on the loader type*);
- unlock the mechanism fixing the implement in the loader frame (*depending on the loader type*);
- disconnect hydraulic conduits of the implement from the front loader's system, protect them with plugs and put in a special bracket (FIGURE 4.4);
- turn the carrying vehicle engine on, tilt the arm frame forward until frame rods emerge from implement hooks, reverse loader away from implement.

After disconnection from loader the implement appliance should not be moved or carried using other appliance with the exception of pallet forks if the implement is secured to the pallet.

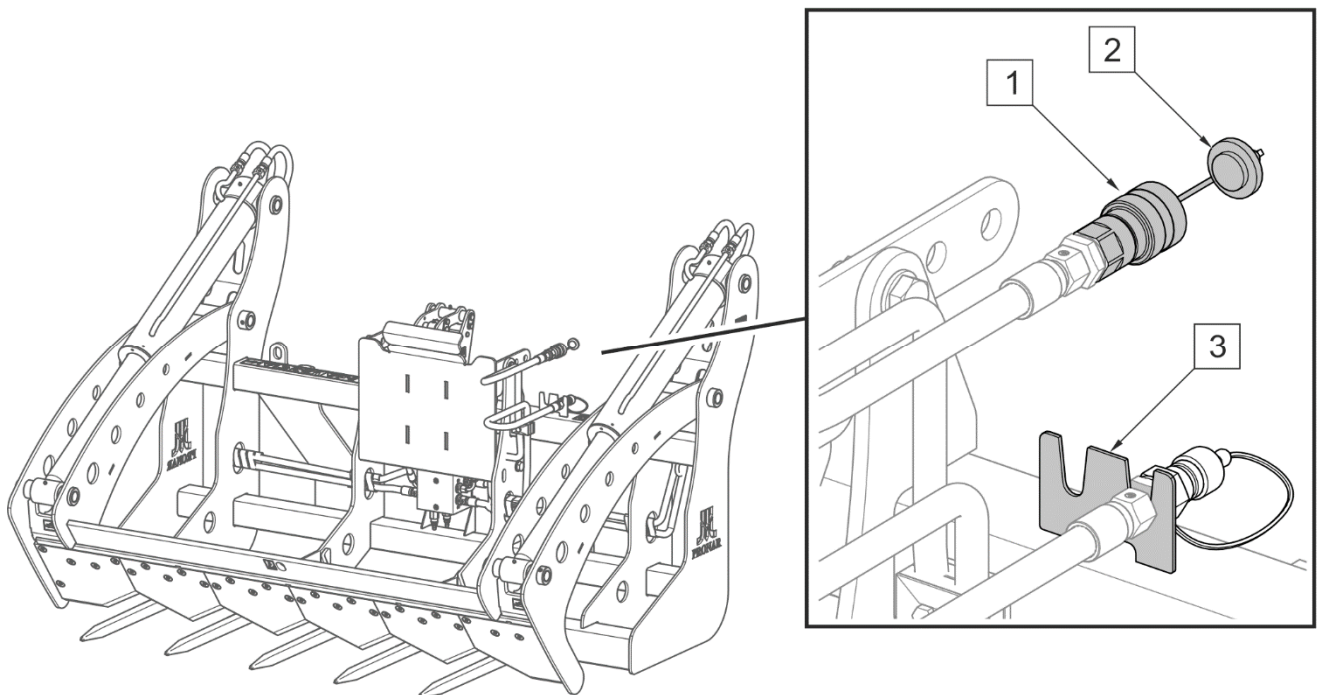


FIGURE 4.4 Protection of hydraulic quick couplers

(1) - hydraulic coupler; (2) - protective plug; (3) - conduit bracket

4.6 TRANSPORTING THE MACHINE



DANGER

Do not drive on public roads with appliance implements mounted on loader.

During transport travel (*i.e. during a long-distance travel without load*), the following guidelines must be followed:

- Make sure that the implement is correctly hitched to the loader.
- During travel, the bale cutter frame should be closed.
- During travel, the implement should be set so as not to obscure the lights or restrict the visibility of the operator or rub against the ground.
- During transport travel with raised implement, the loader control system should be protected against accidental activation (*e.g. using the control lever interlock*)
- Do not exceed the maximum transport speed. Speed of travel should be adjusted to prevailing road conditions, pavement condition and other conditions.



DANGER


Do not exceed the maximum transport speed of 15 km/h (*i.e travelling speed without load*).

SECTION

5

MAINTENANCE

5.1 REPLACEMENT OF TEETH AND KNIVES



DANGER

Teeth and knives may be checked and replaced only when the tractor engine is turned off. Ensure that unauthorised persons do not have access to the tractor cab.

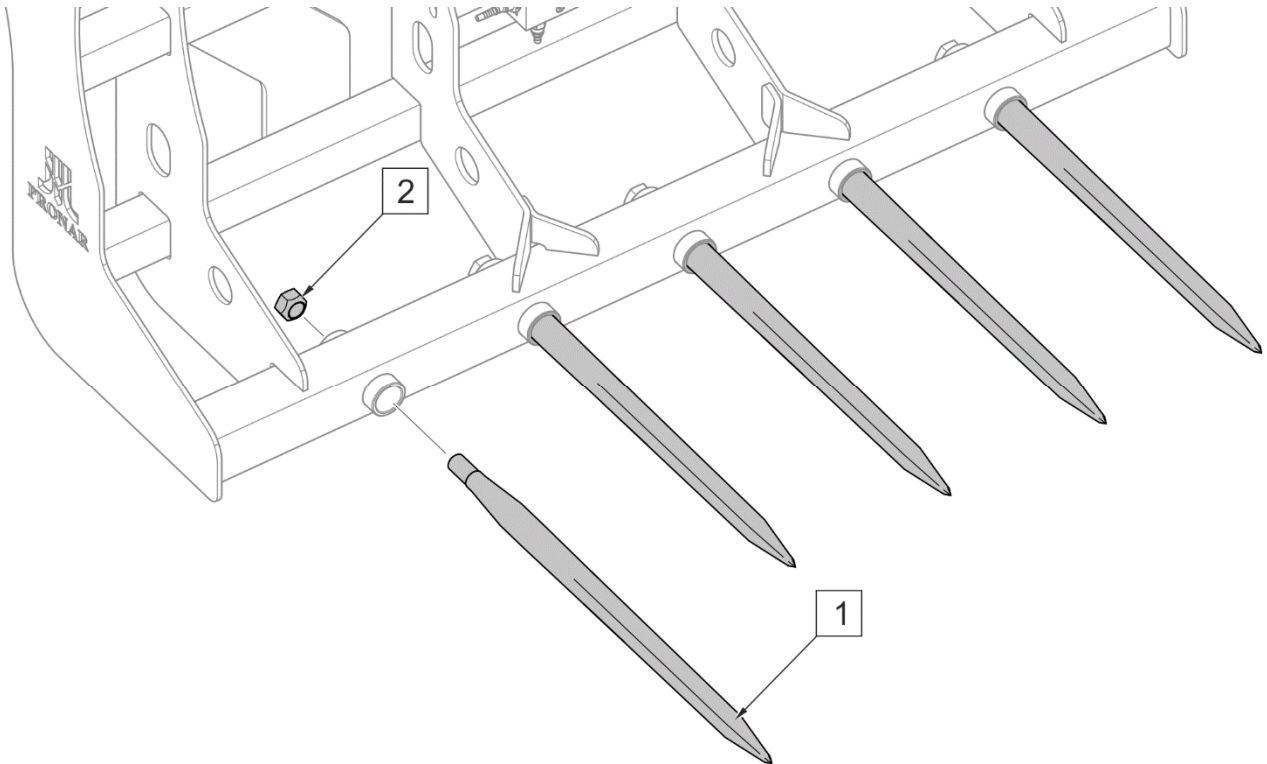


FIGURE 5.1 Replacement of horizontal teeth (forks)

Markings are included in TABLE 5.1

Technical condition of the teeth should be checked periodically and attention should be paid to mechanical damage and excessive wear. Damaged or worn tooth should be replaced. TABLE 5.1. includes the list of spare parts. When replacing horizontal teeth (1), use the preparation for threads in order to protect the nut (2) against undoing.

TABLE 5.1 LIST OF SPARE PARTS FOR HORIZONTAL TEETH OF BALE CUTTER

MARKING (FIGURE 5.1)	Name/ part number	Number of items
1	Horizontal tooth / 5193-54582	5
2	M28x1.5 nut / 5193-51028	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 cause damage to the machine.

The bale cutter is equipped with replaceable cutting teeth (FIGURE 5.2). Worn or damaged cutting teeth should be replaced. The list of cutting teeth and fixing elements is included in TABLE 5.2

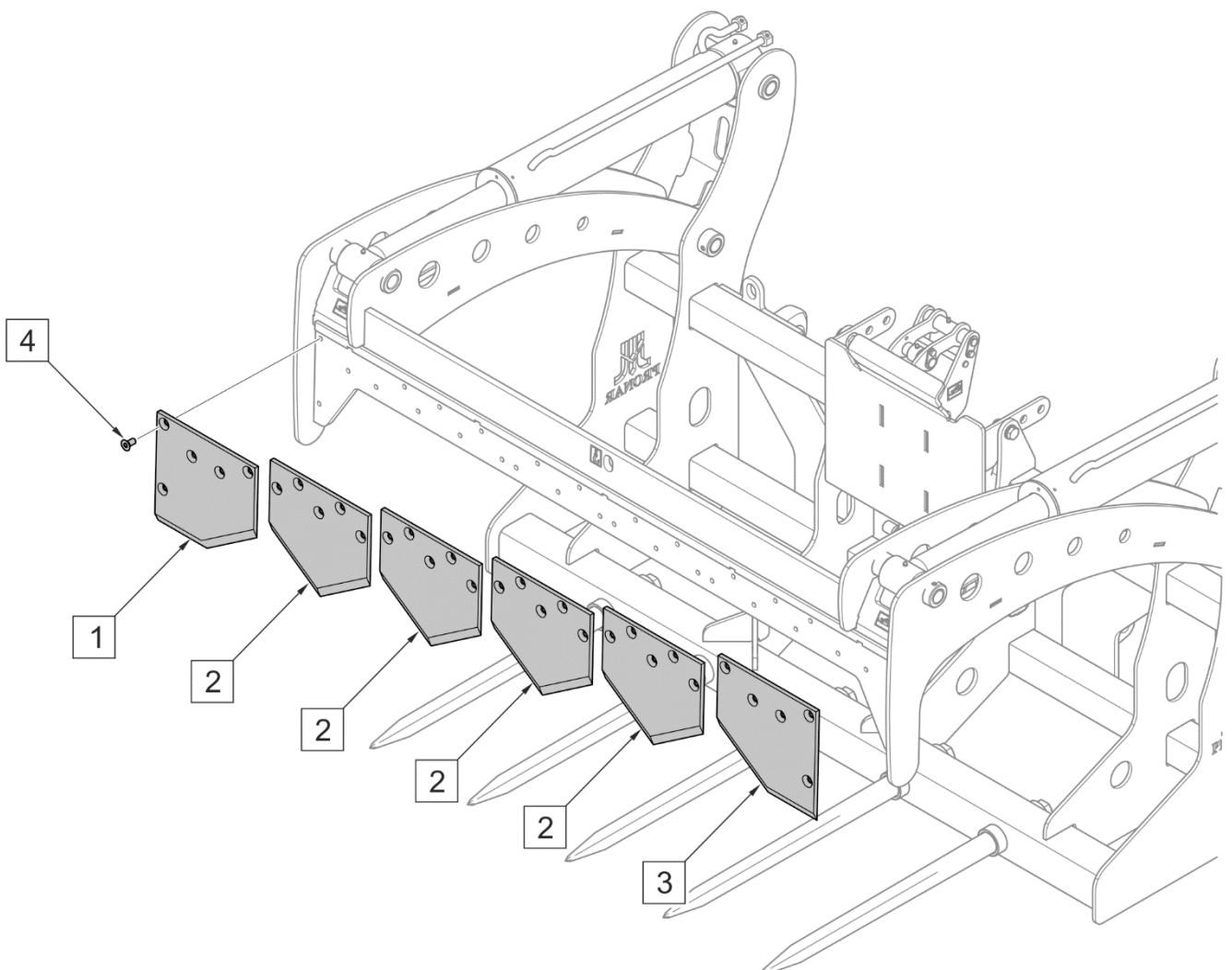


FIGURE 5.2 Replacement of cutting teeth

Parts are described in TABLE 5.2

TABLE 5.2 LIST OF CUTTING TEETH AND FIXING ELEMENTS

MARKING (FIGURE 5.2)	Name/ part number	Number of items
1	Right knife / 522N-03000002P	1
2	Central knife / 522N-030000001	4
3	Left knife / 522N-03000002L	1
4	Cone headed bolt M12x25-10,9-A2J PN-EN ISO10624	30

When replacing knives, use the preparation for threads in order to protect the fixing bolts against unscrewing.

5.2 HYDRAULIC SYSTEM OPERATION

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

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



DANGER

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



DANGER

Do not perform service or repair work under the loaded or raised implement.



DANGER

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

**ATTENTION**

Before starting work, visually inspect the hydraulic system components.

The hydraulic system of new machine is factory filled with HL32 hydraulic oil. Because of its composition the oil applied is not classified as a dangerous substance, 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!



Flexible hydraulic conduits should be replaced every 4 years.

TABLE 5.3 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 a marked tight container. Used oil should be taken to the appropriate facility dealing with recycling or regeneration of oils.

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



DANGER

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



ATTENTION

The hydraulic system is vented automatically during machine operation.

5.3 STORAGE

After finishing work, the implement 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, bearings 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. It is recommended to keep the implement in a closed or roofed building.

If the implement 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 date of the last lubrication. Additionally, before winter, apply grease to the front loader hitching points.

**ATTENTION**

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

5.4 LUBRICATION**DANGER**

Before lubricating, lower the loader arm, turn the engine off and secure the vehicle's cab against access of unauthorized persons.

TABLE 5.4 LUBRICATION POINTS AND LUBRICATION FREQUENCY

ITEM	NAME	NUMBER OF LUBRICATION POINTS	TYPE OF GREASE	LUBRICATION FREQUENCY
A	Cylinder piston sleeve	2	grease	every 25 hours of work
B	Cylinder sleeve	2		
C	Cutter frame rotation sleeve	2		
D	Holder cylinder	2		
E	Holder sleeve	1		

Marking description in Item column (TABLE 5.4) conforms with numbering shown (FIGURE 5.3)

Machine lubrication should be performed with the aid of a manually or foot operated grease gun, filled with generally available grease. Before commencing lubrication insofar as is possible remove old grease and other contamination. Remove and wipe off excess oil or grease

LT-43-PN/C-96134 grease is recommended for lubrication.

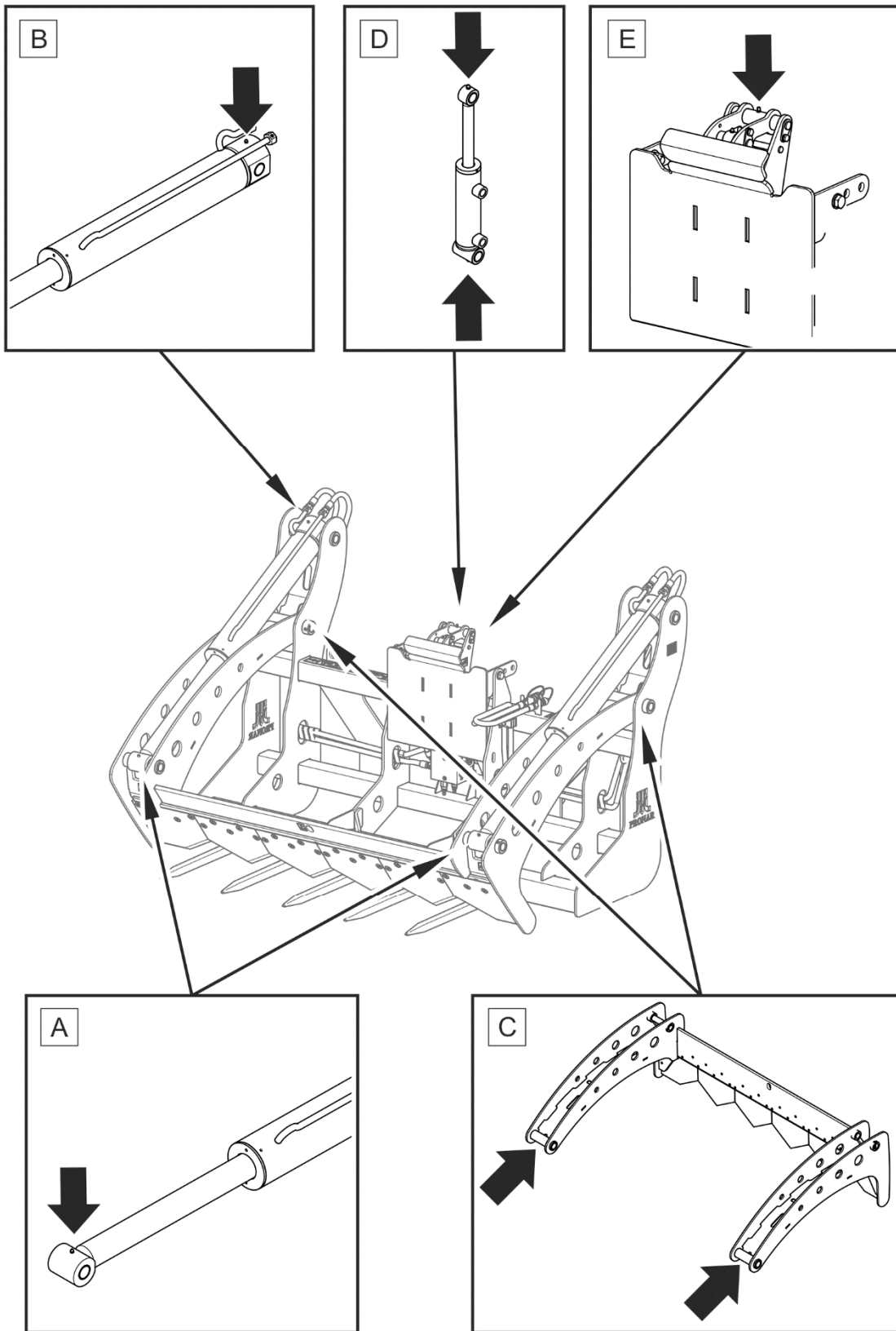


FIGURE 5.3 Lubrication points

Lubrication points are described in table 5.2



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.

5.5 TIGHTENING TORQUE FOR NUT AND BOLT CONNECTIONS

Unless other tightening parameters are given, during maintenance repair work apply appropriate torque to tightening nut and bolt connections. Recommended torque values apply to non-greased steel bolts.



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 cause damage to the machine.

TABLE 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

5.6 TROUBLESHOOTING

TABLE 5.6 TROUBLESHOOTING

TYPE OF FAULT	CAUSE	REMEDY
Bale cutter can not be opened or closed	The implement's hydraulic couplers are not connected to the loader	Connect the hydraulic couplers to the implement control system
	The implement's hydraulic couplers are incorrectly connected to the loader	Correct the connection, repair damaged connectors at an authorised service point
	Defective the loader's implement control system	Find the cause and remove the defect
Film holder can not be opened	The holder opens when the cutter frame is maximally opened	Open the cutter frame maximally.
Bale cutter falls autonomously	Damaged hydraulic lines	Check technical condition of hydraulic conduits, if necessary, repair them at an authorised service point
	Damaged hydraulic cylinder seals or damaged sliding surface of cylinder piston	Repair at an authorised service point

NOTES

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