METAL-FACH

BALER

Z562

INSTRUCTIONS MANUAL – PART I

TRANSLATION OF THE ORIGINAL INSTRUCTIONS MANUAL,

REV. IV

JULY 2018

Instructions manual No. Z562-04-167/2013

EC DECLARATION OF CONFORMITY

The undersigned	Jacek Kucharewicz, Chairman of the Board,	
hereby declares, with full responsibility, that the complete machine		
NAME		
1.1.	Brand (trading name of manufacturer)	Metal-Fach
1.2.	Type	Z562
1.2.1.	Variant	
1.2.2.	Version	
1.2.3.	Name(s) (if any)	
1.3.	Category, Subcategory and Vehicle-Speed Indicator	S1a
1.4.	Company name and manufacturer's address	Metal-Fach sp. z o.o. ul. Kresowa 62 16-100 Sokółka, Poland
1.4.2.	Name and address of the authorised representative of the manufacturer (if applicable)	
1.5.1.	Location of the rating plate of the manufacturer	On the front part of the main frame of the machine
1.5.2.	Method used to fix the rating plate of the manufacturer	Bonded
1.6.1.	Location of the vehicle identification number on the chassis	On the front part of the main frame of the machine
2.	Machine-identification number	

complies with all the appropriate regulations of Directive 2006/42/EC and the Regulation of the Minister of the Economy dated 21 October 2008 on the principal requirements for machines (Journal of Laws of 2008, No. 199, item 1228, as amended)

The following harmonised standards were applied to assess the compliance

PN-EN ISO 4254-11 2012, PN-EN ISO 4254-1: 2013, PN-EN ISO 12100: 2012, PN-EN ISO 13857: 2010

and standards PN-ISO 36001998, PN-ISO 11684:1998 and the Regulation of the Minister of Infrastructure dated 31 December 2002 on the technical conditions of vehicles and the range of their essential equipment (Journal of Laws of 2003, No. 32, item 262, as amended).

Safety Testing Report No. MF/4/2010

This declaration of conformity EC becomes null and void if the machine is changed or reconstructed without the manufacturer's consent.

Sokółka
(Place)

01/12/2010
(Date)

Jacek Kucharewicz
(Signature)

Chairman of the Board
(Position)

Metal-Fach Sp. z o.o.
ul. Kresowa 62, 16-100 Sokółka
NIP 545-16-50-398 REGON 052141473
Sąd Rejonowy w Białymstoku KRS nr 0000140580
Kapitał zakładowy 530 000,00 złotych

tel.: 85 711 98 40; fax: 85 711 90 65
biuro@metalfach.com.pl

www.metalfach.com.pl

Machine Data

Type of machine		Baler
Type designation		Z562
Serial number[1]:		_____
Machine manufacturer		METAL-FACH Sp. z o.o. ul. Kresowa 62 16-100 Sokółka Phone (0-85) 711 98 40 Fax (0-85) 711 90 65
Seller		_____
	Address	_____
		_____
	Phone/Fax	_____
		_____
Delivery date		_____
Owner or user	Name	_____
	Address	_____
		_____
	Phone/Fax	_____

[1] The data is located on the machine-rating plate located on the front part of the machine main frame

INTRODUCTION TO THE MANUAL

The information included in the instructions manual is valid as of the date of issue. The manufacturer reserves its right to make design changes to machines, and, due to this fact, some values or illustrations might not correspond to the actual state of the machine supplied to the user. The manufacturer reserves its right to make design changes without changing these instructions. The instructions manual is included in the basic equipment of the machine. The user is obliged to read the contents of this manual before commencing operations and to meet the recommendations included in it. It will ensure safe operation and trouble-free machine operation.

The machine was constructed in compliance with the standards in force and the current legal provisions. The manual describes the basic safety and operation principles of the baler manufactured by Metal-Fach, type Z562.

The substantive obligations of the manufacturer are presented on the guarantee card, which includes the complete, and currently in-force, regulations on guarantee coverage.

If the information included in the instructions manual proves to be incomprehensible, you should address the seller from whom the machine was purchased, or the manufacturer directly, for assistance.

The spare-parts catalogue functions as a separate list, and is enclosed in the form of a CD in machine purchase, and also is available on the Manufacturer's website www.metalfach.com.pl .

This instructions manual, according to the Act of 4 February 1994 on copyrights and related Laws (Journal of Laws of 1994, No. 2017, item 880), is protected by copyright. It is prohibited to copy and distribute the contents and figures without the consent of the proprietor of the copyright.

The warranty card, together with the warranty terms, is attached to this Instructions Manual as a separate document.

Manufacturer's address

Metal-Fach sp. z o.o.

ul. Kresowa 62

16-100 Sokółka

Telephone

Phone (0-85) 711 98 40

Fax (0-85) 711 90 65

The symbols used in these instructions.

DANGER

Hazard-warning symbol. This indicates the presence of a serious-hazard condition, which, if not avoided, can result in death or serious injury. The symbol warns against the most-dangerous situations.

WARNING

The symbol pointing to especially important information and recommendations. Non-compliance with the described recommendations poses a serious threat of damage to the machine due to its incorrect operation.

WARNING

The symbol indicating the possibility of the presence of a hazard which, if not avoided, can result in death or serious injury. This symbol indicates a lower level of risk of injury than the symbol including the word “DANGER”.

The symbol indicating useful information.

The symbol indicating service operations which should be performed periodically.

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1 General Information

1.1 Introduction

THIS USER MANUAL IS PART OF THE BASIC ACCESSORIES OF THE BALER

The machine may be operated only by persons who have read this Instructions Manual, and know the design and functioning of the baler, and the functioning of the tractor to be worked with.

To operate the machine safely, adhere to and follow all the instructions set out in this Instructions Manual. Adhering to the guidelines of the Instructions Manual ensures the User works safely and the machine service life is longer.

1.2 Baler Identification

The identification data is on the rating plate located on the front part of the frame. The rating plate shows the data used to identify the machine, i.e. code, serial number, year of manufacture, and pressure on the hitch.

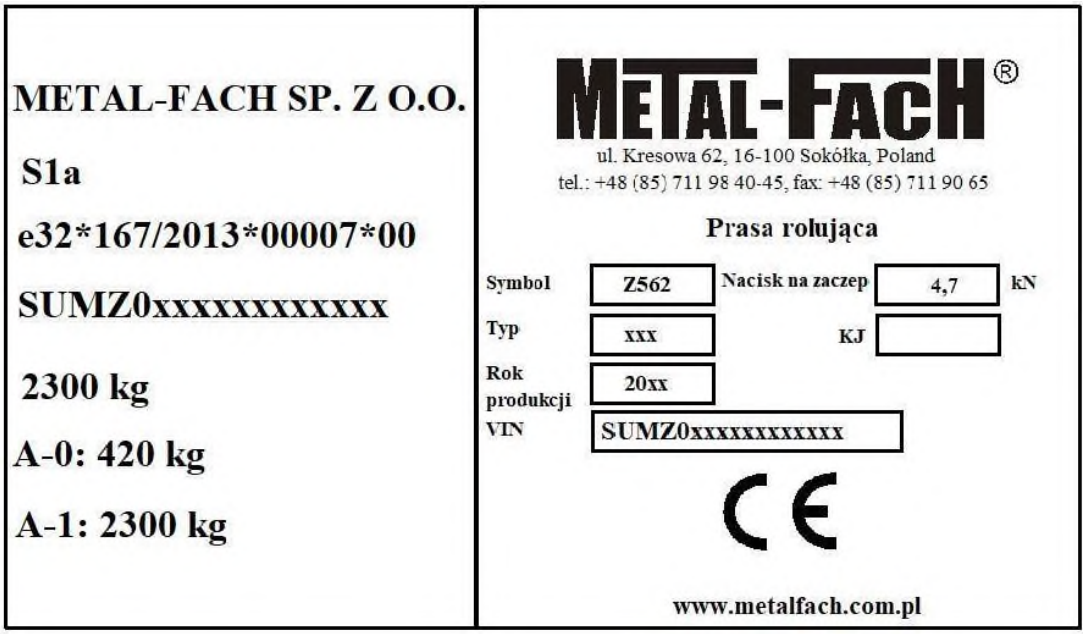


Figure 1. Example of a rating plate

WARNING

WARNING!

It is prohibited to enter public roads with a bale-wrapping press without the rating plate or with an illegible rating plate.

WARNING

WARNING!

Check the condition and legibility of the rating plate. In the case it is destroyed report at the service.

On purchase, check the compliance of the serial number on the nameplate of the machine against the number shown in the user manual and warranty card.

The manual should be retained for future users.

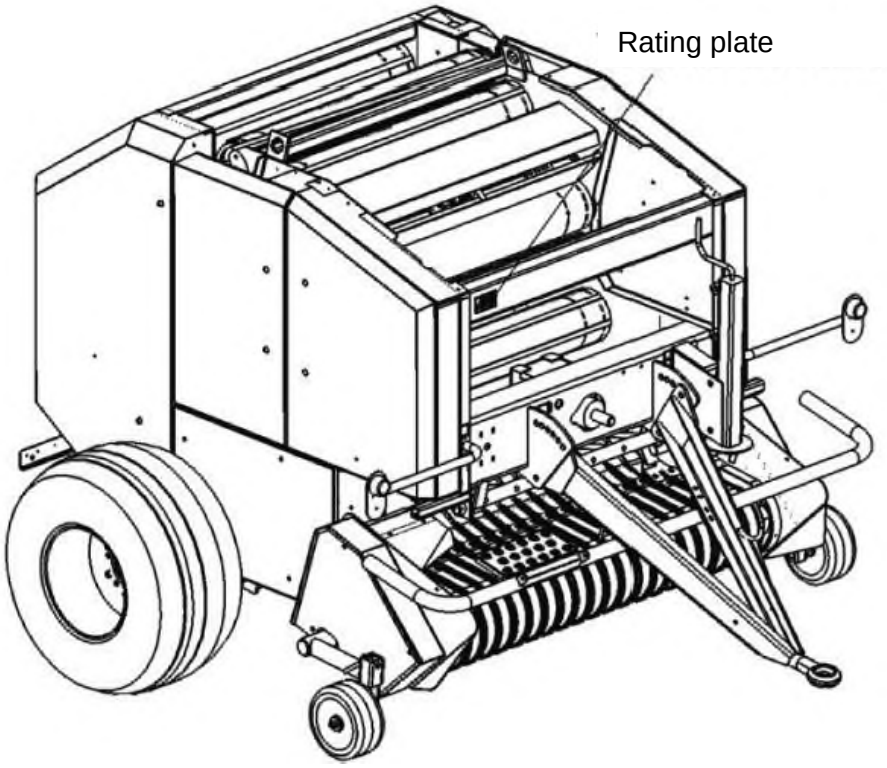


Figure 2. Location of the nameplate on the machine

On purchase, check the compliance of the serial number on the nameplate of the machine against the number shown in the user manual and warranty card.

Keep the instructions in a safe place, where it should be available to the user and the service technician through the entire life cycle of the machine.

If selling the machine to another user it is obligatory to hand over the instructions manual. It is recommended that the seller of the baler file the instructions-manual receipt confirmation by the purchaser when the manual is submitted with the machine to the new user.

If the instructions manual is damaged or lost, notify the service centre and provide the manual number or the data from the rating plate to receive a new copy of the baler-operation manual. You can also download the instructions manual from the website www.metalfach.com.pl .

Before you start the machine after a longer period of stoppage, carefully read the information on use and safety contained in this manual.

You must read all parts of the instructions manual, and, if necessary, contact a local Metal-Fach distributor. The contact details of the distributors and service centres are published on www.metalfach.com.pl. The machine should be operated, serviced and repaired by people familiar with its specific characteristics and acquainted with the rules of conduct in terms of occupational safety.

The manufacturer of the machine shall not be held liable for any damage arising from non-compliance with the principles contained in this instructions manual!

USE ORIGINAL SPARE PARTS ONLY!

If you need any spare parts, call a local Metal-Fach distributor or directly Metal-Fach in Sokółka.

1.3 Baler Intended Use

The Z562 baler is designed for picking up the material raked into windrows by rolling them into bales of hay with a humidity of up to 20%, and green fodder with a humidity of up to 60%, and straw.

All the working actions must be by one person - the operator seated in the tractor cab.

Using the baler for any purpose other than that designated shall be considered contrary to the intended use. Metal-Fach shall have no responsibility for damage caused to persons or animals, or for any other damage resulting from the improper use of the machine.

1.4 Baler Design

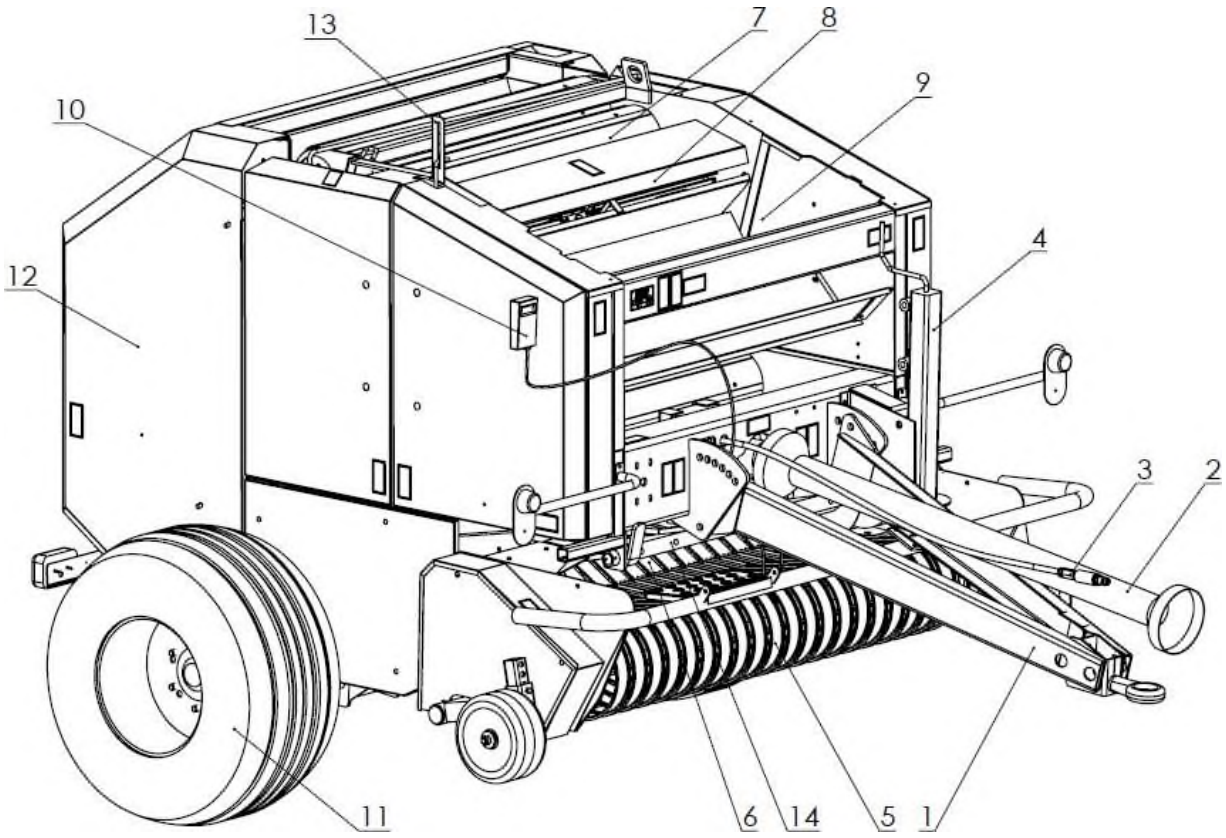


Figure 3. Z562 baler design

1 – Drawbar
2 – PTOFF shaft
3 – Hydraulic hoses
4 – Support foot
5 – Pick-up
6 – Collector
7 – Rolling roller
8 – Twine-binding unit
9 – Chain-and-rod conveyor set
10 – Control panel
11 – Ground wheel
12 – Housing
13 – Indicator
14 – Clamp

The front section of the baler features the pick-up (5) which collects the windrows. It works in conjunction with the collector (6) which directs the picked-up windrow onto the rolling rollers (7), where compaction and rolling takes place. The activity of picking up the windrow, rolling and unloading bales is shown in Figure 25. Achieving a pre-set degree of compaction is signalled by the digital control (13) when it indicates the red area, and an acoustic signal on the control panel (10) in the operator's cab. After the pre-set compaction degree is achieved, the twine-binding unit (8) ties the bale with twine. For net bale binding applications, you must activate this process manually in the control panel (10).

The baler coupling with the tractor is achieved by means of the drawbar (1), PTOFF shaft (2) and hydraulic hoses (3). The support foot (4) is used for supporting the machine in the stationary position, and for coupling and detaching the machine from the tractor. The baler is fitted with ground wheels (11) for riding behind the tractor.

1.5 The Technical Specifications Of The Baler

Table 1 The technical specification of the baler

No.	Contents			
General information				
1.	Machine Type	Baler		
2.	Manufacturer	METAL-FACH Sp. Z o.o. ul. Kresowa 62, 16-100 Sokółka,		
3.	Nameplate Location	Front bar		
4.	Number Stamp Location	Front body, right side		
5.	Type	Z562-0…	Z562-1…	Z562-2…
Dimensions				
6.	Length [mm]	3900	4000	4000
7.	Width [mm]	2470	2470	2470
8.	Height [mm]	2050	2050	2050
Weights				
9.	Max. weight [kg]	2350	2450	2750
Technical data				
10.	Pressure on the hitch [kN]	4.7 kn		
11.	Rolled-bale dimensions (diameter/width) [mm]	1200/1200		
12.	Bale weight [kg]	100-600		
13.	Efficiency [bales/h]	Max. 20	Max. 40	Max. 40
14.	Rolling assembly – chamber type	Cylindrical, fixed chamber		
15.	Bale density	Variable		
16.	Drawbar-eye diameter [mm]	44		
17.	Number of operators	1 (tractor operator)		
Requirements for tractor				
18.	Power demand [kW/HP]	35/48	50/68	70/95
19.	Power demand on the power take on [kW/HP]	Ca. 25/34	Ca. 40/55	Ca. 60/81
20.	PTOFF rotational speed [rpm]	540		
21.	Connected with the tractor by	Lower transport hitch		
22.	Hydraulic system	1 unidirectional manifold, 1 dual-directional manifold (for baler with blades – optional equipment)		

23.	Required pressure in the tractor's hydraulic system [Atm./MPa]	140/14	
24.	Electrical system [V]	12	
25.	Plug	"Lighter" type	
26.	Transport speed [km/h]	40	
Pick-up			
27.	Pick-up type	Drum and tine, 4-bars	
28.	Pick-up width [mm]	1800	
29.	Max. distance between the extreme pick-up tines [mm]	1520	
30.	Number of pick-up tines	44	
31.	Working-height adjustment	Mechanical, 5 settings	
Binding			
32.	Binding unit	Automatic binding with a single twine, net-binding (optional)	
33.	Twine-binding-density adjustment	3-step	
32.	Number of net rolls	1	
Tyres			
33.	Size	400/60 – 15.5	
34.	Load-capacity and speed index	(14 PR) 145 A8	
35.	Pressure in tyres [kPa]	250	
Power take-off shaft (PTOFF)*			
36.	Type	Standard	Wide-angle
37.	Transferred torque [Nm]	2000	1860
38.	Minimum length [mm]	1410	1210
39.	Type of coupling	Shear	Shear
40.	Catalogue No.	60025/602.K6-1/5NW	60064/S602.K61-1/5NW
Wheel-Braking System (optional equipment)			
Service brake			
41.	Type	Mechanical, drum brake	
42.	Control	Hydraulic (two-hose hydraulic system)	
Parking brake			
43.	Type	Mechanical, drum brake	
44.	Control	Manual, via crossed helical gear	

* The wide-angle shaft is an optional accessory for the baler

1.6 General Safety Principles

Before starting the baler operation, read this instructions manual to avoid risks. Apart from the information included in the instructions manual all the principles and local legal regulations related to the safety of work and utilisation of the machines should be met.

The baler was designed and made to provide maximum safety of use.

Before first start-up, read all the chapters of the instructions manual carefully.

Metal-Fach shall not be held liable for any damage arising from non-compliance with the principles contained in this baler-instructions manual.

The company shall also waive all responsibility for any damage arising from the improper use of the machine or any unauthorised changes made to the machine.

Check the condition of the machine regularly. Pay special attention to the correct functioning of all safety components. All protective guards must be installed according to the manufacturer's instructions.

WARNING

WARNING!

The baler may be operated only by qualified persons who have read this instruction manual.

WARNING

WARNING!

Before starting the operation, check the machine for correct functioning, completeness, and the proper securing of its moving parts.

You should take note of all the warning signs indicated in the manual and present on the machine. All signs which warn about risks present on the machine must be visible at all times.

Please ensure that the safety signs are kept clean at all times and, if damaged or barely legible, they are replaced. You can find a list of safety signs with their locations in Section

WARNING

WARNING!

Never leave the machine unattended during operation.

WARNING

WARNING!

Never leave the tractor unattended when its engine is running.

DANGER

DANGER!

Take particular care while getting in and out of the tractor.

WARNING

WARNING!

Noise – the equivalent A-weighted emission sound-pressure level (LpA) must not above 76 dB

DANGER

DANGER!

During work, it is strictly forbidden to go near the rotating components, to touch the moving parts, or to reach into them.

Keep your face, hands and legs away from all rotating parts. Keep at a safe distance at all times.

Do not use tubes, hoses or other parts of the machine as handrails.

Carrying persons or animals on the machine or tractor is strictly forbidden.

WARNING

WARNING!

During maintenance and repair works, wearing protective clothing, safety gloves, protective footwear and goggles is mandatory.

WARNING

WARNING!

Always keep oils and lubricants out of the reach of children. Always carefully read the warnings and precautions placed on packaging. Do not allow the contact of skin with any hazardous substances. Wash yourself thoroughly after you have used the above-mentioned hazardous substances.

WARNING

WARNING!

Working on pressurised hoses is prohibited, as it can cause pollution or serious injuries.

WARNING

WARNING!

Wear well-fitting clothes which cannot be caught by movable elements, and boots with non-slippery soles. In the event of the risk of item ejection wear a protective helmet with eye protection.

DANGER

DANGER!

The machine's working area is considered a danger zone. Prior to starting up the machine make sure that there are neither people nor animals around in the close proximity of the machine. If anyone appears near the machine the baler must be stopped immediately and you must make all unauthorised persons leave the zone. Never stop close to or just under terraces, or balconies, or in front of open rooms or any kind of platform where there might be people or animals. The baler operator is responsible for all kinds of damages caused by the machine during operation.

WARNING

WARNING!

It is not allowed to leave farming equipment on slopes or other inclines without securing the vehicle against accidental rolling away.

WARNING

WARNING!

The operation of the baler without mounted and closed guards which protect the moving parts is strictly prohibited.

WARNING

WARNING!

Prior to each starting-up of the baler, check the machine condition, completeness, and mounting of the guards.

WARNING

WARNING!

Hydraulic connections must be always kept clean. After use the plastic cover supplied on the machine purchase.

Check, and if necessary replace, any damaged tube guards and fixing. All moving tube guards must be replaced every 5 years. Hydraulic lines must be replaced every 6 years. You must record the date of the latest replacement. Before putting pressure in the hoses, check if all the hoses and their fixing are air-tight. In order to check that there are no leaks from the hoses use blotting paper or paper.

WARNING

WARNING!

Prior to each baler start-up and ride on public roads, check the correctness of the machine connection with the tractor, the tightness of the wheels, and the correct drawbar and tractor connection.

DANGER

DANGER!

All the adjustment, repair and service works should be carried out with the tractor engine off, making sure beforehand that it is protected in the correct way against accidental starting up.

DANGER

DANGER!

Prior to starting and during the collecting of swathes, make sure that there are no bystanders present, especially children.

WARNING

WARNING!

Take special care during operation on inclined areas. Pay special attention to the possibility of bales' rolling down.

WARNING

WARNING!

It is strictly forbidden to operate the baler under raised and unprotected machine units.

DANGER

DANGER!

It is strictly forbidden for any person to stay between the tractor and the baling press during tractor-engine operation.

WARNING

WARNING!

Take particular care when connecting and disconnecting the baler from the tractor. The machine must be connected to a tractor equipped with a lower transport hitch supporting a higher vertical load than the vertical load on the baler drawbar (Chapter 1.5).

WARNING

WARNING!

During operation, wear the appropriate work clothing, and footwear with non-slip soles.

DANGER

DANGER!

Load the binding twine and net when the tractor engine is switched off and protected against accidental starting up (key removed from the ignition and the parking brake engaged).

WARNING

WARNING!

Before each new passage, check the position of the support foot. The support foot must be in the transport position.

WARNING

WARNING!

Control the power hydraulic system of the baler from the tractor operator’s cab only.

WARNING

WARNING!

The traffic laws and the manufacturer's recommendations must be observed during transport on roads (Chapter 1.7.2).

WARNING

WARNING!

Prior to entrance onto public roads carry out a visual inspection of the transported machine.

WARNING

WARNING!

It is forbidden to climb onto the baler during its transport and operation.

WARNING

WARNING!

When travelling on public roads, it is forbidden to carry rolled bales in the baler chamber.

WARNING

WARNING!

It is forbidden for people under the influence of medicines or other substances which affect the ability to drive vehicles and general psychophysical efficiency, or medicines causing disturbances of concentration or delay in response time, and for persons after alcohol consumption, to operate the machine

WARNING

WARNING!

It is forbidden to drive the baler near open fire.

WARNING

WARNING!
Always observe the fire regulations and immediately remove any hazards occurring when operating the baler, or when parked.

WARNING

WARNING!
During the operation of the baler, do not approach it with open fire, and do not smoke near the machine.

WARNING

WARNING!
Prior to each departure for work check whether there is a dry-powder fire extinguisher included in the tractor equipment. If missing, the tractor must be provided with one.

WARNING

WARNING!
During the baler operation, there is a risk of lightning strike.

WARNING

WARNING!
When parked, the machine must be secured with a chain which runs through the hitch eye and is padlocked.

The baler comes with a securing chain, padlock and two sets of keys.

1.6.1 Safety Signs

The safety signs located on the baler contain important notices for the operator's safety. Their purpose is to draw the operator's attention to the safety accident-prevention principles, and to possible risks during machine operation and servicing.

The safety signs contain black and red symbols on a yellow background.

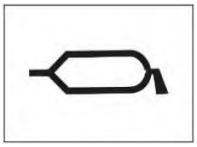
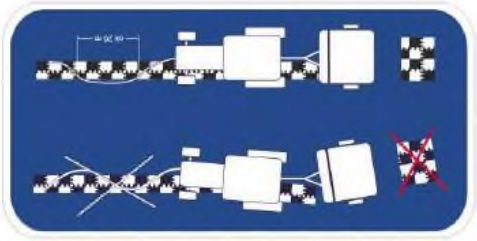
Keep the signs clean and legible at all times. They should be replaced immediately if lost or damaged. You can buy them from the manufacturer.

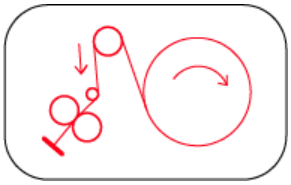
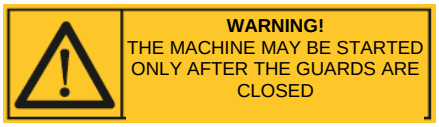
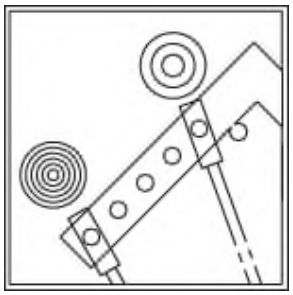
1.6.2 Warning Signs

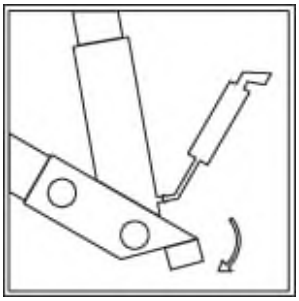
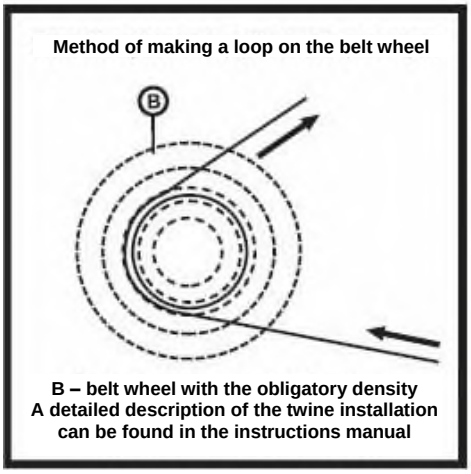
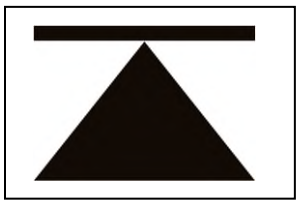
Table 2 Warning signs

	Safety symbol (mark)	Meaning of the symbol (mark) or content of the inscription
1		Warning – read the user manual before performing this operation.
2		Switch off the engine and remove the ignition key and read the instructions manual before any maintenance or repairs.
3		Do not open or remove protective guards during machine operation.
4		Keep a safe distance from the raised cover during baler operation.

5		Secure the lifting cylinder before entering the danger zone.
6		Do not reach into the pick-up zone when the tractor engine or PTOFF shaft are working.
7		Do not stand between the machine and tractor when the tractor engine is working. This space is particularly dangerous.
8		Do not go near any moving swivel joints of the hitches when the engine is working.
9		Do not stand under the raised cover when it is not secured against accidental collapse.

10		Danger of being crushed by bales' rolling out. Keep a safe distance from the working machine.
11		Do not open or remove protective guards during machine operation.
12		Keep a safe distance from the working machine.
13		Main lubrication points of the baler.
14		Lifting points for loading on a means of transport.
15		Information pictogram.
16		Information pictogram.
17	**ATTENTION !** **While during a u-turn or sharp curves, ensure that you immobilise the PTOFF shaft of the tractor.**	Information pictogram.

18		Information pictogram.
19		Information pictogram.
20		Keep away off the revolving PTON shaft.
21		Do not ride on platforms or ladders.
22		Information pictogram.
23		Adjusting the degree of bale compaction.

24		Lubrication of actuator pin.
25		Information pictogram.
26		Lift placement points.
27		Warning pictogram.
28		Speed limit 40 km/h.

Arrangement of warning symbols on the machine

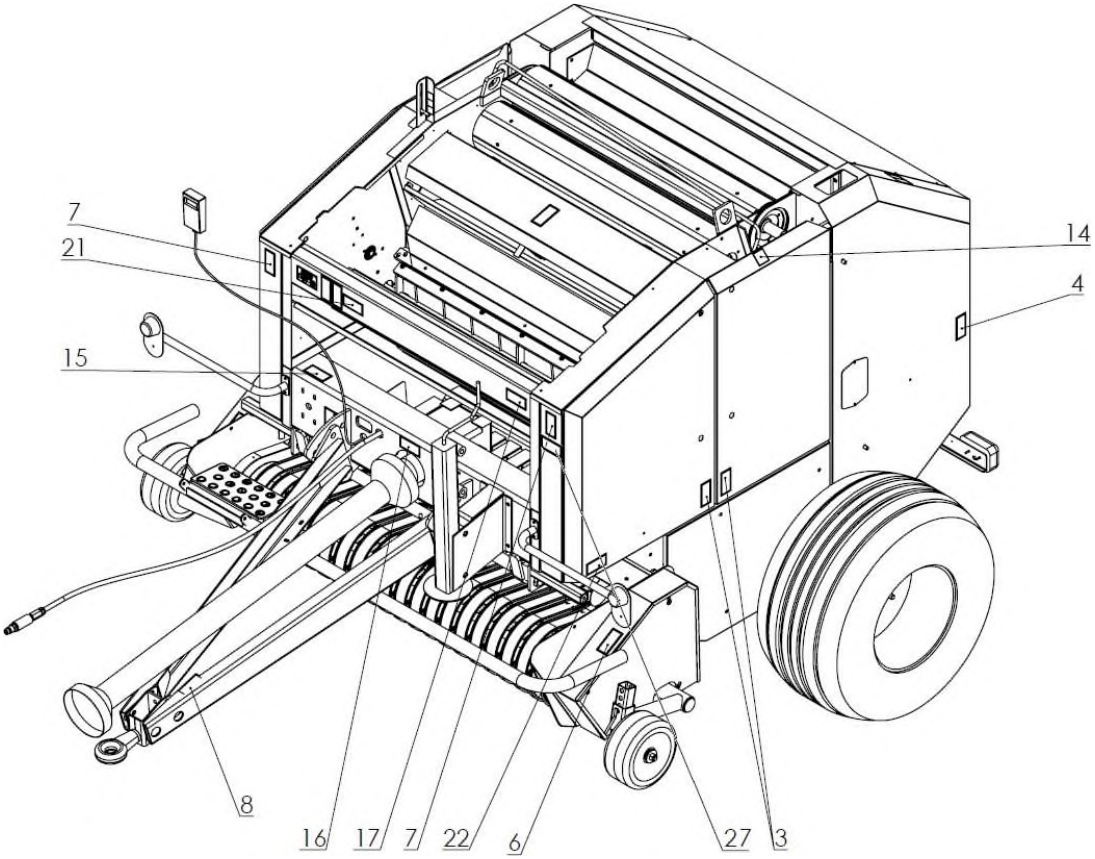


Figure 4. Arrangement of warning symbols on the machine - left side

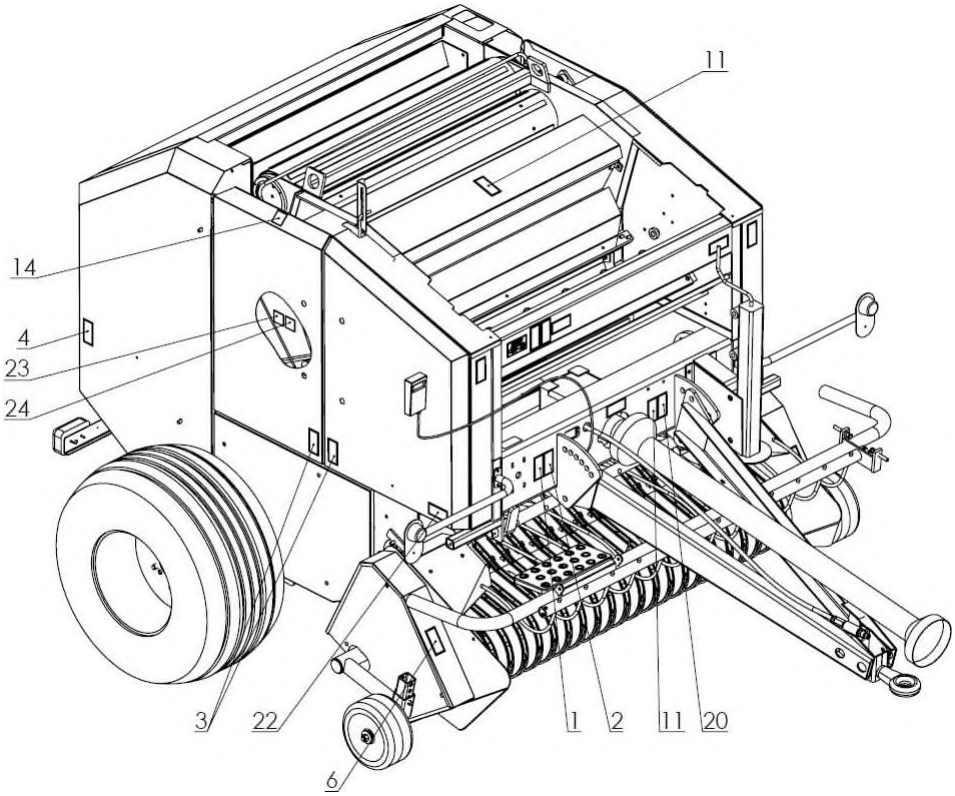


Figure 5. Arrangement of warning symbols on the machine - right side

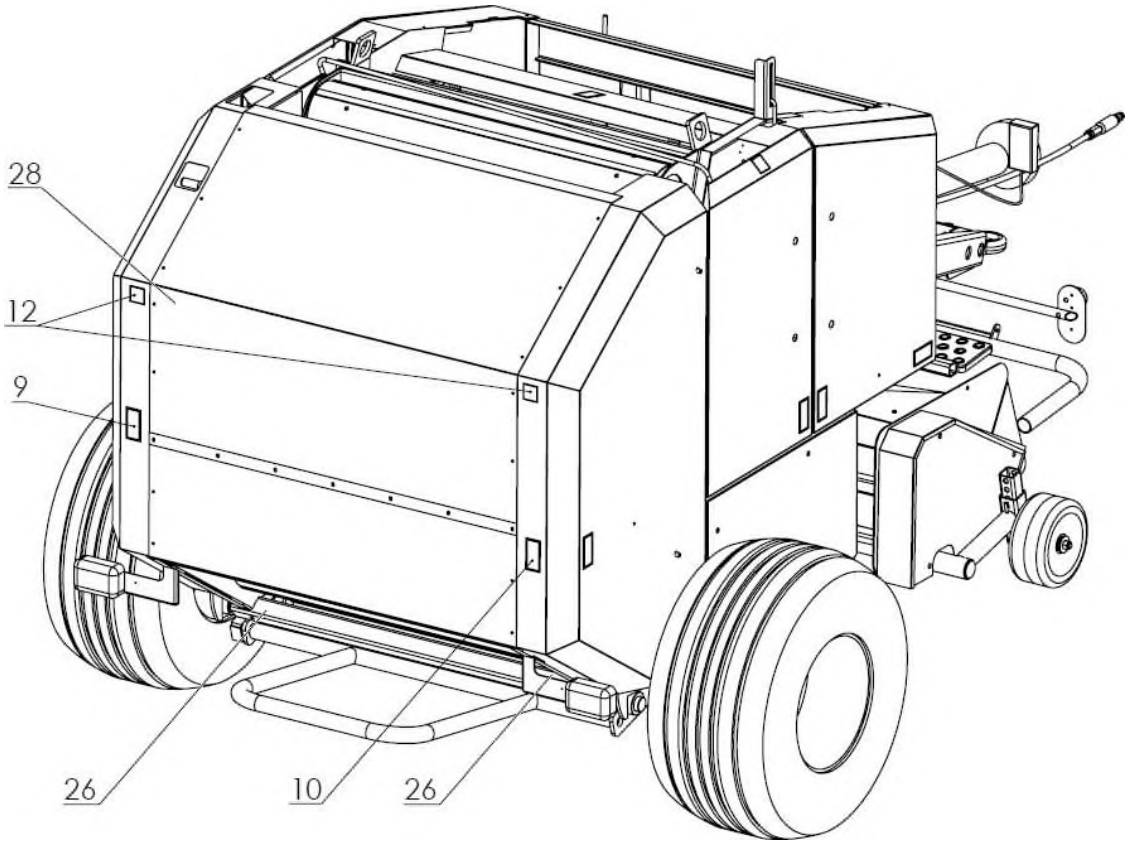


Figure 6. Arrangement of warning symbols on the machine - rear side

1.7 Baler Transport

1.7.1 Load Transport

The baler is designed for rail and road transport with the appropriate payload capacity.

Lifting equipment may be operated by trained operators holding the appropriate qualifications.

The suspension-sling attachment points for transporting the baler are shown in Figure 7.

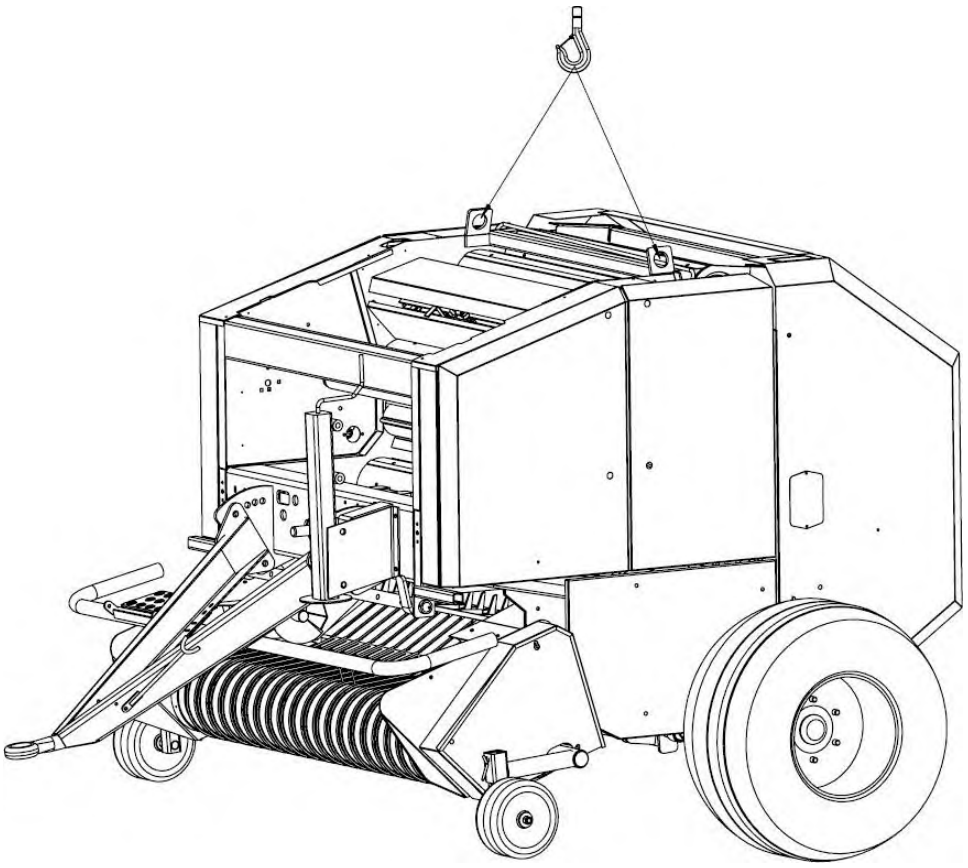


Figure 7. Suspension-sling attachment points

The placement points for lifting are shown in Figure 8.

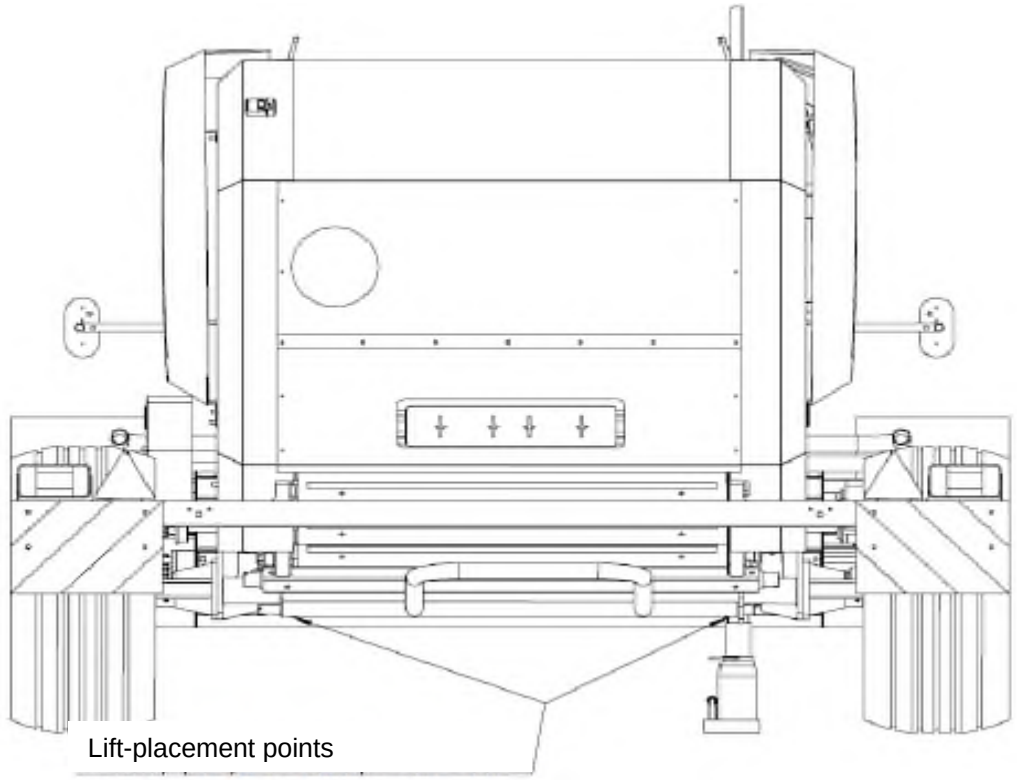


Figure 8. Lift-placement points

A special transport-support foot (Figure 9) can be used for transporting the machine on the trailer. This support is distinguished by its yellow colour. After the machine has been delivered, the transport support must be removed by removing the 4 screws (Figure 9) and replacing it with the standard support in the colour of the baler body. The yellow transport support must not be used during normal machine operation.

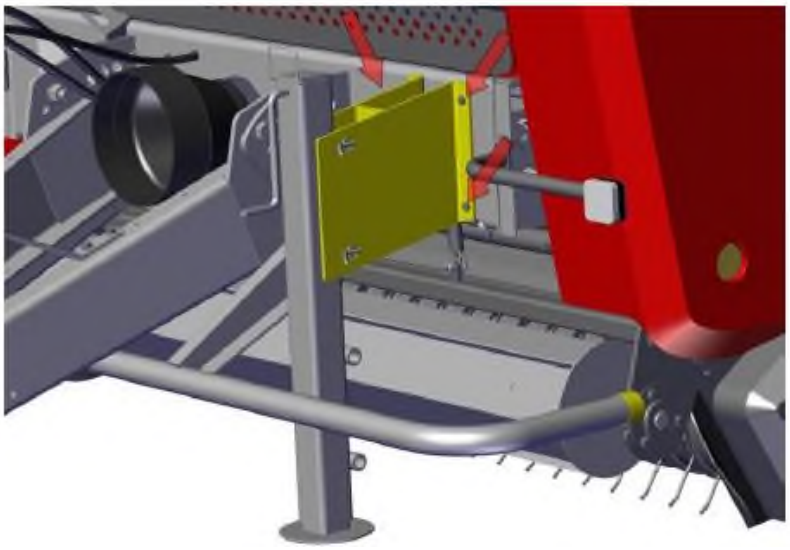


Figure 9. Transport-support foot

Transporting the baler with a bale in the chamber is prohibited.

During the period of transporting, the baler being moved should be firmly attached to the floor.

1.7.2 Road-Traffic Participant

The baler is designed for public-road traffic as a machine attached to the farming tractor lower hitch.

Only agricultural tractors with a power output of not lower than 35-70 kW and a drawbar-pull class of not lower than 0.9-1.4, fitted with the lower transport hitch, may be used for transport on public roads.

Before you drive the baler with a brake on a public road, install red-and-white-striped warning boards.

Prior to entry onto the public roads you should

- immobilise the PTOFF shaft
- disconnect and fix the hydraulic hoses in an appropriate way
- turn off the counter and leave it in the cab
- put up a notice indicating slow-moving vehicles in the holder on the rear section of the machine
- check the good working order of the lighting and signalling systems
- check the tyre pressures
- check that the rear chamber and guards are closed
- check that the press is fitted with the support foot in the colour of the body (section 1.7.1)

WARNING!

WARNING!

It is forbidden to carry persons on the machine during operation or transport.
Transport of a rolled bale in the baler chamber is forbidden.

Before merging with traffic on public roads, make sure that the traffic is fully manoeuvrable. The front-axle load of the tractor must be at least 20% of the tractor's weight. If this condition is not fulfilled the front axle of the tractor must be loaded.

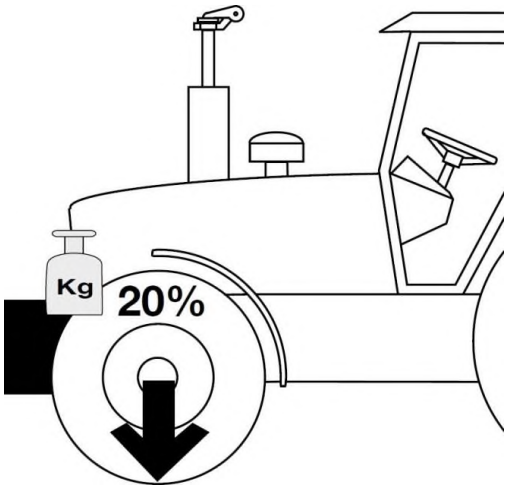


Figure 10. Minimum front-axle load of the tractor

WARNING

WARNING!

During the transporting of the machine on the public roads adapt the speed to the traffic conditions and do not exceed the speed of 40km/h.

During the transporting of the baler on the public roads follow the traffic-law regulations. In the event of an emergency stop by the tractor with an attached baler, on stopping on a public road the driver should

- prevent the vehicle from causing any hazard to safety on the road
- park the vehicle as close to the road edge as possible, parallel to the lane axis
- switch off the engine and remove the key from the ignition, engage the auxiliary brake of the tractor, and place chocks under the wheels of the baler
- outside the built-on area a warning, reflective triangle should be placed at a distance of 30 to 50 m behind the vehicle, and the hazard light should be on
- in a built-up area, switch on the hazard lights and place a warning triangle behind the vehicle, if it is not installed in a bracket at the rear of the machine. Make sure it is clearly visible for the other road users
- in the case of a breakdown take the appropriate steps in order to secure the place of the breakdown.

1.8 Baler Cleaning

WARNING

WARNING!

Before you clean the baler, ensure that the baler, PTOFF drive, and tractor engine are all immobilised (the ignition key removed). Disconnect the supply, lighting and control-panel cables.

After each day of work, remove dust, accumulated harvest residue, etc., using a brush.

We do not recommend cleaning the baler with a high-pressure water stream. Directing the stream of water at the hydraulic, electrical and bearing components is forbidden.

Prior to longer stops, dust the baler and remove the harvest residue using compressed air. Directing the stream of compressed air at the hydraulic and electrical components is forbidden.

After water cleaning and prior to longer stops, it is recommended to lubricate all the lubrication points and to apply a suitable protective agent on all drive chains.

1.9 Baler Storage

Store the baler-control panel in a dry room, thus protecting the terminals against dirt and humidity, using the delivered guarding covers.

Wind the connection cable and store in a dry room, thus protecting the terminals against dirt and humidity.

Store the baler on a flat, level and paved surface.

It is recommended to store the machine in a dry area, protected against UV rays and other harmful factors.

If storing outside with no roofing, protect the baler with a waterproof canvas or film.

After the season is over, clean the baler and check the condition of the protective layers. Repair damaged coating as required.

WARNING

WARNING!

Check the condition and legibility of the rating plate. If it is damaged, report to the service depot.

Check the condition and legibility of the pictograms. If they are damaged replace them with new ones.

1.10 Risk

1.10.1 Residual-Risk Description

Residual risk stems from baler operators' implementing improper procedures.
The following prohibited actions create the highest level of risk.

- Coupling the balers with tractors which fail to meet the requirements given in the manual
- Standing under the raised machine chamber if not secured against accidental collapse
- Standing on the baler during transporting
- Checking the technical condition of and cleaning the machine when the tractor engine is running and the machine drive is on
- Operating the baler with the guards opened
- Servicing or repairing the PTOFF shaft when the tractor engine is on
- Using the twine removed from an earlier rolled bale
- Using faulty hydraulic hoses
- Controlling the baler by an operator who is outside the tractor cab,
- Operating the machine under the influence of alcohol or drugs
- Operating a damaged machine or one with the guards removed
- Transporting a rolled bale in the baler chamber
- Using the baler for other than its intended purpose,
- Leaving the machine unsecured on slopes,
- Entering the area between the tractor and the machine with the engine running

When assessing the residual risk the Z562 baler is considered a machine which, till the moment of starting, its manufacturing was designed according to the current state of the art.

1.11 Residual-Risk Assessment

By observing the recommendations, such as

- reading carefully the guidelines of the instructions manual and adhering to them
- standing under raised machine units is forbidden
- no persons allowed in the area of baler operation
- maintaining and repairing the machine at authorised servicing stations
- operating the baler should be by trained and authorised operators
- by protecting the baler from children and bystanders, it is possible to eliminate the residual risk associated with machine operation, and, as a result, the machine can be operated without any risk to persons and the environment

DANGER

DANGER!

If the listed instructions and guidelines of the manufacturer are not followed, the risk of an accident rises.

1.12 Dismantling And Disposal

Disassembly and disposal should be performed by specialised service centres which are familiar with the design and operation of the baler. Only specialised service centres have full and uPTOff-date knowledge of the applied materials and the risks associated with the hazards of improper storage and transport. The authorised services provide both counselling and the performance of complete services concerning the disposal of the machine.

The proper tools and auxiliary equipment (hoist, wheel puller) must be used for disassembly.

Store the used oil in airtight containers. Take it to a petrol station which collects used oil immediately.

Disassemble the machine. Sort the disassembled parts. Send them to the appropriate companies which collect such materials.

During the disassembly of the baler, wear the proper protective clothes and boots.

1.13 Accessories

The user can also purchase the following optional and additional equipment at the dealer or at the manufacturer.

- A hard copy of the Spare-Parts Catalogue
- An ensilage applicator
- A net-binding unit assembly
- A central lubrication system
- A cutter unit
- A triangular plate indicating slow-moving vehic

2 The First start-up

The first start-up of a newly purchased baler should be performed by an employee of the dealer's or manufacturer's authorised service centre in the presence of operator (user/buyer).

WARNING!

Prior to first start-up of the baler, read this manual thoroughly, paying close attention to the sections concerning the safety of the operator and bystanders.

WARNING

In the event of any uncertainties regarding safety, contact the dealer/manufacturer.

Before each start of the baler, instal the control panel in the tractor operating cab.

2.1 The First Start-up Of The Baler

WARNING!

Use special care during the first start-up. Any bystanders in the working area of the machine compromise safety.

WARNING

During the first start-up, an employee of the dealer's or manufacturer's licensed service centre, accompanied by the user (buyer), is to perform the following.

- Inspect the accessories and functioning of the baler
  - Check the machine for completeness and condition
  - Check the lighting system and horn
  - Check the hydraulic system by
    - raising and lowering the pick-ups
    - raising and lowering the rear chamber
    - raising and lowering the cutter blades (optional accessory)
  - Check the rear chamber lock for closing and locking actions.
  - Check the pick-up functioning
  - Check the binding-process functioning
    - with twine
    - with net (optional accessory)

- Check the functioning of the central lubrication system (optional accessory)
- Check the functioning of the fodder-silage applicator (optional accessory).

- Train the user on the correct baler operation
  - Discuss the design and principles of operation of the pick-up
    - Setting the overload coupling
    - Installing the spring-impact angle
    - Repairing the coupling after bolt breakages
    - Replacing the entire coupling
    - Lubricating the roller runners
  - Discuss the design and principles of operation of twine-binding
    - Discussing the principles of operation
    - Installing the twine
    - Adjusting the twine-binding density and tension
    - Adjusting the degree of bale compaction
    - Cleaning the twine feeder
  - Discuss the design and principles of operation of net-binding (optional accessory)
    - Discussing the principles of operation
    - Installing the net.
    - Adjusting the bind counter
    - Adjusting the spring tension for blade-frame tensioning
  - Discuss the design and principles of operation of the central lubrication system (optional accessory)
    - Discussing the principles of operation
    - Adjusting the pump consumption
  - Discuss the design and principles of operation of the fodder-silage applicator (optional accessory)
    - Discussing the principles of operation
    - Starting and adjusting the dosage unit
  - Discuss the principles of operation of the feeder roller and cutter unit (optional accessory)
    - Discussing the principles of operation of the feeder roller
    - Discussing the principles of operation of the cutter unit
    - Disassembling, sharpening and re-installing the blades
  - Discuss the design and principles of operation of the control panel
  - Discuss the principles of operation of the tractor and baler unit during baling
    - Operating the tractor while picking up windrows on the straight
    - Operating the tractor while picking up windrows on curves and sharp turns
    - Discussing risks
  - Perform a full cycle of both twine and net bale binding - the user (buyer) assisted by the service technician
  - Discuss and adjusting the tension of the chains
  - Discuss the method of lubrication and ongoing baler maintenance

The first start-up is carried out by the service centre free of charge.

The service technician's signature on the guarantee certificate shall be the proof of the first start-up as described in this section. The customer's signature on the guarantee certificate shall prove the first start-up of the baler in the presence of the user (buyer).

3 Using The Machine

3.1 Foreword

All the activities must be by a single operator who has read this instructions manual thoroughly, and the safety of operation chapter in particular.

Before starting work, check whether

- the machine is in good working order
- all the guards are in place and closed
- the oil level in gear units is sufficient
- the parts are not worn out
- the condition of hydraulic lines is satisfactory

Hydraulic lines must be replaced every 6 years.

- the recommended tyre pressure is 2.5 bar,
- the baler has a body-coloured support foot (section 1.7.1) fitted.

If not otherwise specified in the instructions manual, always perform adjustments and preparatory activities when

- the engine is turned off and the ignition key is removed,
- all machine components have stopped,
- the machine is standing on stable ground,
- field work has not yet started

3.2 Attaching The Baler To A Tractor

Couple the baler with agricultural tractors with a power output of not lower than 35-70 kW and a drawbar pull class of 0.9-1.4, fitted with the output coupling of the power hydraulics and the 6-pin rear PTOFF with a rated rotational speed of 540 rpm.

Connect the baler to the tractor's lower-transport hitch, which facilitates the transmission of a vertical load of 4.0 kN.

3.2.1 Connecting To The Lower Tractor Transport Hitch

Make sure that in the area of the baler's coupling with the tractor, and in close vicinity, there are no bystanders present, children in particular.

Prior to the coupling activity, align the tractor's centre line with the machine axis on even and level ground. Stop the tractor engine, take the key from the ignition, and engage the tractor's auxiliary brake.

First, unlock the padlock of the protective chain running through the hitch eye and remove it. Then, set the correct height of the baler hitch by choosing the correct adjustment eye of the hitch, as shown in Figure 11.

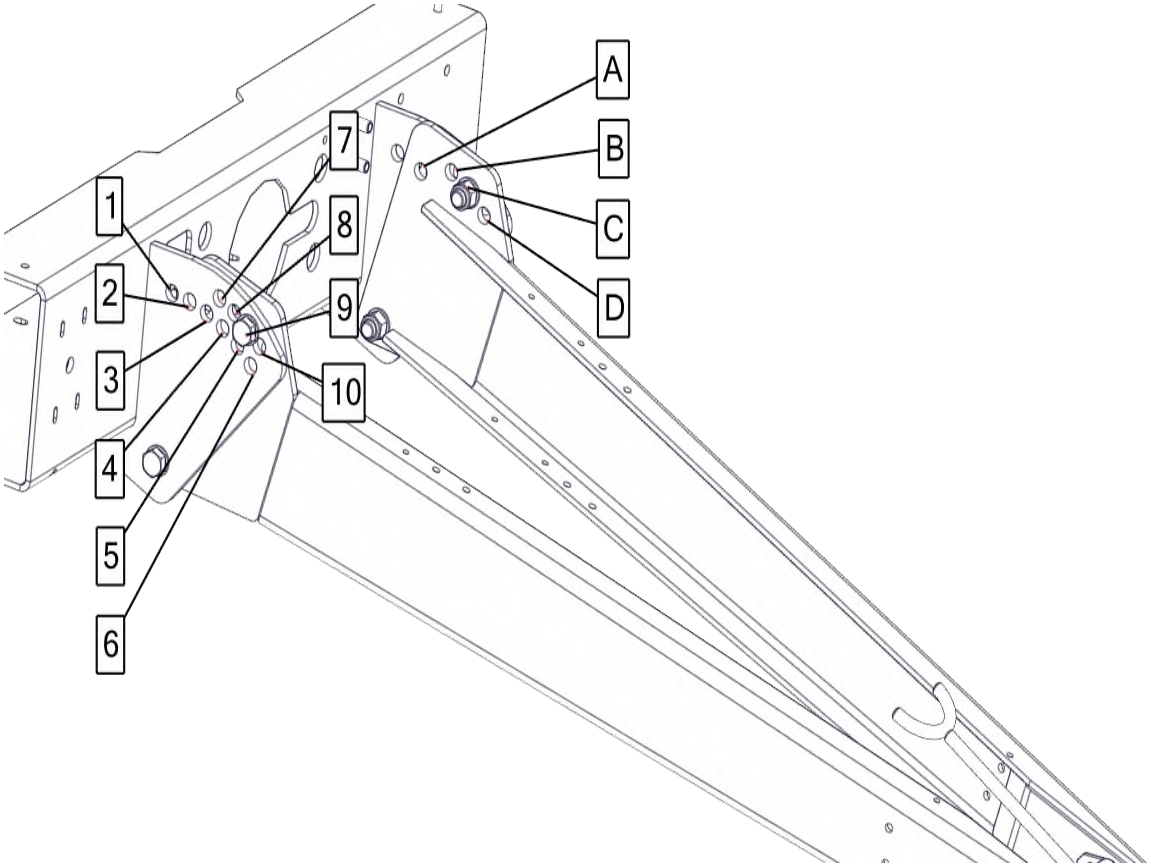


Figure 11. Setting the hitch height

The table below gives the height of the drawbar eye above the ground.

Table 3 The height of the drawbar eye above the ground

No. of the drawbar hole / No. of the beam hole	A	B	C	D
	The height of the drawbar eye above the ground [cm]			
1	100	-	-	-
2	80	-	-	-
3	60	-	-	-
4	40	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	80	102	-
8	-	64	85	106
9	-	47	68	89
10	-	32	52	73

Level up the hitch eye. Couple the drawbar eye with the tractor transport hitch and check the connection for correctness, and the guards against accidental disconnection.

Only tractors with a weight equal to at least the weight of the baler to be coupled are allowed.

Connect the power supply. Check that the working and signalling systems are working properly.

Connect the hydraulic-supply system. Check that the power hydraulic systems are working correctly, especially opening and closing the baler cover.

3.2.2 Coupling The Baler With The Rear PTOFF Shaft

Before you connect the PTOFF shaft, check the direction and rotational speed of the PTOFF.

Stop the tractor engine, take the key from the ignition and engage the tractor auxiliary brake.

Using the PTOFF shafts with specifications other than those indicated by the manufacturer is forbidden.

The PTOFF shaft is a CE labelled drive-transmission component.

Each shaft comes with an instructions manual. You must read the instructions manual for the PTOFF shaft, adhere to the safety rules, and follow the guidelines contained in the manual.

Install the PTOFF shaft, delivered with the machine, between the tractor shaft and the coupling box in the machine.

The method of connecting the shaft with the tractor is shown on the shaft.

Check that on curves (at shaft shortest span), the minimum distance shown in the Figure below is not exceeded. **The minimum distance is 4 cm.**

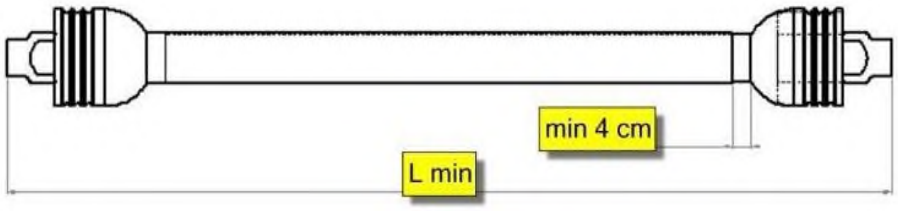


Figure 12. PTOFF length

Make sure that the shaft length is correct. At the shaft's longest extension, the shaft tubes must overlap by at least 1/3 of their length.

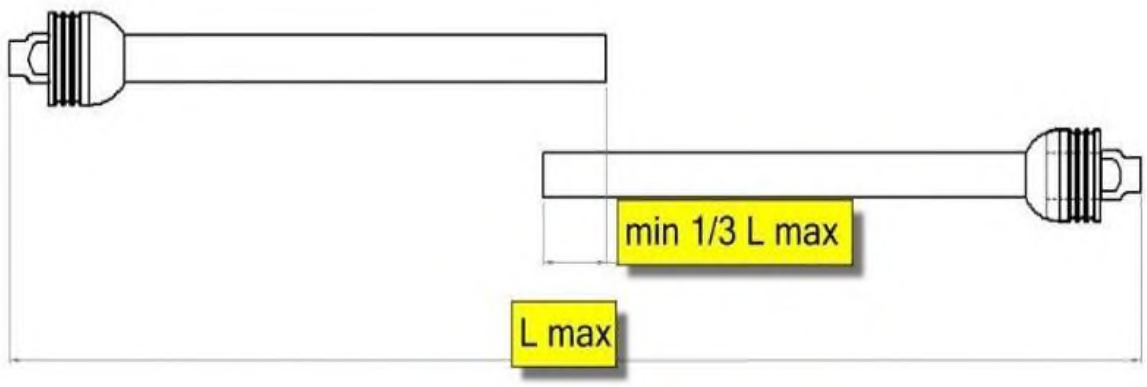


Figure 13. PTOFF housing length

Make sure that the components protecting the PTOFF shaft from sliding off are located in their correct positions. Check that the tubes can rotate freely against the shaft, and lubricate as required.

Install the chain securing the tubes.

Read the shaft-instructions manual for detailed information on the use of the PTOFF shaft.

WARNING

WARNING!

It is strictly forbidden to operate the PTOFF shaft with its tube damaged or not in place, or without additional canopy guards on the tractor PTOFF side and the machine PTON side.

3.2.3 Hydraulic-System Installation

Connect hydraulic hoses

- Connect the supply hose for the chamber and pick-up to the unidirectional manifold
- Connect the hoses controlling the cutter to the dual-direction manifold.

Connect the hydraulic hoses in pairs to one control section; the pairs of hoses in one hydraulic section are marked with the same colour.

Do not move the machine with the pick-up lowered with the wheels on the ground.

3.2.4 Lighting Connection

Connect the lighting system and check that all control lamps and lights are working correctly.

Always use the correct fuses; do not replace the cords, plugs or sockets with ones which do not match the original ones.

Put in the tractor cab the caps for protecting the electrical pins during operations. After completing the work, re-install the caps on the pins.

3.2.5 Connecting The Control System

The electrical system of the baler requires a 12-V supply. To connect the control system, connect the supply cord of the baler to the so-called “wiper” or “lighter” socket.

3.2.6 The Braking System

WARNING

WARNING!

It is forbidden to drive the baler on public roads with defective or disconnected brake system.

The defective or disconnected brake system can lead to collision or accident.

It may cause an injury or death of the driver or other traffic participants.

WARNING

WARNING!

Remember to inspect the braking system before each time you start the machine. Repairs of the braking system may be carried out only by persons trained for this purpose. Unauthorised repairs of the braking system is forbidden.

The baler can come with a hydraulic braking system and a parking brake.

The hydraulic braking system

The machine-braking system (Figure 14) is fitted with an automatic brake valve (2) with a battery (3) and unidirectional actuators (5). The tractor connection is made by means of a double-cord brake coupling (1) and electrical connection (4), which controls the valve’s functioning. The brake connection is connected with the automatic valve (2) by means of main, auxiliary and return lines. The battery (3) is controlled by a hydraulic signal from the auxiliary line, and by the electrohydraulic valve. If the signal from the auxiliary line or electrohydraulic valve is lost, the valve redirects the pressure from the battery to the brakes.

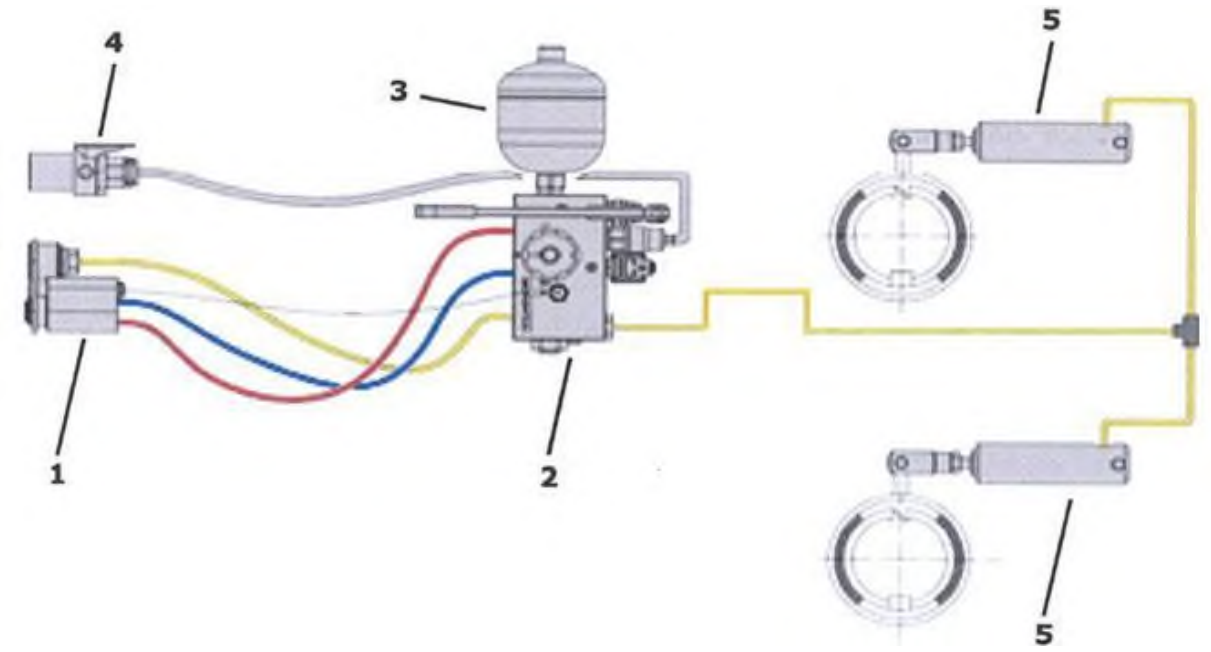


Figure 14. The operation of the hydraulic braking system

1 – Double-cord braking system coupling

2 – Automatic brake valve

3 – Battery

4 – Electrical connection

5 – Hydraulic-brake actuator

To apply brakes or release the parking brake, the electrical signal and pressure in the auxiliary line of the tractor are needed. After you disconnect the machine from the tractor, it is possible to control the braking system with the hand wheel on the automatic brake valve and by means of the manual pump integrated with the valve. Applying the pump and setting the handle wheel in position 2 causes pressure release from the brake connection, which facilitates machine coupling (the machine brake is still engaged). Applying the pump and setting the handle wheel in position 1 causes pressure release from the brakes, which facilitates machine motion. Re-applying the brakes occurs when you set the hand wheel in position 0. When driving the tractor fitted with the double-cord braking system, set the hand wheel on the valve in position 0. If the machine is coupled with a tractor fitted with a single-cord braking system, the hand wheel must be set in position 2 (by connecting the braking system to the tractor fitted with the single-cord braking system, the system has emergency and service-brake features, but the other valve features are lost). Position 1 is not used during travelling.

The parking brake

The baler can come with the parking brake controlled manually, where bolt-tensioning of the cords connected with the brake levers is its actuating component (Figure 15). By making clockwise turns of the crank (1), the position of the brake lever is changed by the cord (5), which activates the baler's parking brake. By changing the direction of the crank turns, the parking brake is released.

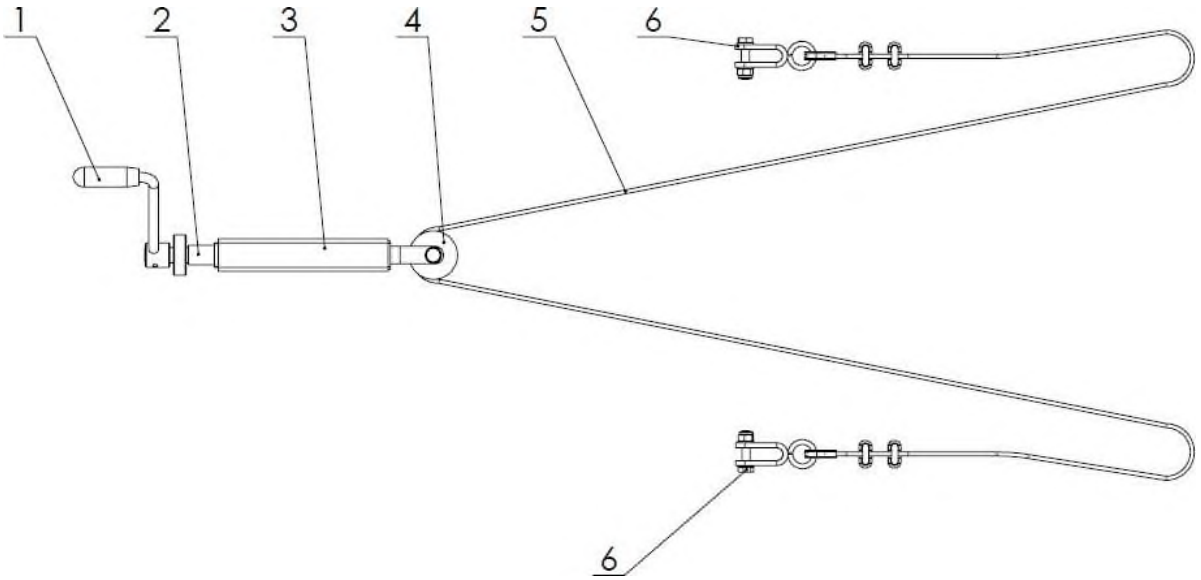


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Figure 15. Diagram of the parking brake

1 – Crank
2– Trapezoidal screw
3– Tensioning slide
4 – Line pulley
5 – Cord of the parking brake
6 – Cord holder

3.2.7 Drive Disconnection

Make sure that no bystanders, especially children, are present in the baler storage area and immediate vicinity. Procedure.

- Position the baler in its storage place on even and level ground. Stop the tractor engine, take the key from the ignition and engage the tractor's auxiliary brake
- Disconnect the electrical-supply system
- Disengage the power hydraulics
- Disconnect the braking system (for balers fitted with brakes)
- Lower the support foot. Disconnect the drawbar eye from the tractor hitch. Make sure that there is no hazard of accidental machine displacement. Draw the protecting chain through the hitch eye and padlock it
- Immobilise and disassemble the PTOFF shaft. Put the disassembled shaft on the support designed to store it. Protect the terminations of the PTOFF and PTON components with covers.
- Install the hydraulic and electrical connection caps

3.3 Operational Check

After attaching the baler to a tractor

- start the tractor without starting the PTOFF shaft and check that all movement features of the baler are working correctly.
- check that the hydraulic system is operational
- check that the rear cover can be opened and closed, and lower the pick-up.
- check that the electrical connection of the control unit are working correctly.
- check the electrical system, indicator lamps, and lighting.
- close the rear cover and start the PTOFF shaft.
- prior to starting the PTOFF shaft, make sure that there are no people near the machine. Take great care in checking that all mechanical and drive components are working correctly

3.4 Preparing The Machine For Operation

Before you start work, perform all the necessary machine adjustments to prepare it for the requirements of the tasks to be done.

3.4.1 Mounting And Operating The Twine-Binding Unit

The manufacturer recommends the use of propylene twine for balers with a density of 500m/kg.

DANGER

DANGER!

Load the bale-binding twine when the tractor’s engine is switched off and protected against accidental starting up (key removed from the ignition and parking brake engaged).

WARNING

WARNING!

Install the twine for the first time with the assistance of an employee of the authorised or manufacturer's service centre.

Put the twine reel in the box designed to store the net bale. Put the reel as shown in Figure 16, in such a way that the centre line of the twine reel is parallel with the box-centre line. When you start the operation, put in 2 reels and tie the beginning of the second reel (reel inner side) to the end of the first one (outer layer). Draw the beginning of the twine towards belt-wheel B and draw it in as shown in Figure. 16. After you determine the correct twine path, make a loop with a length of 10-15 cm. Tie the twine when connecting the reels, replacing the twine or when it is broken. Adjust the tensioning of the twine with the clamps (1) i (2)

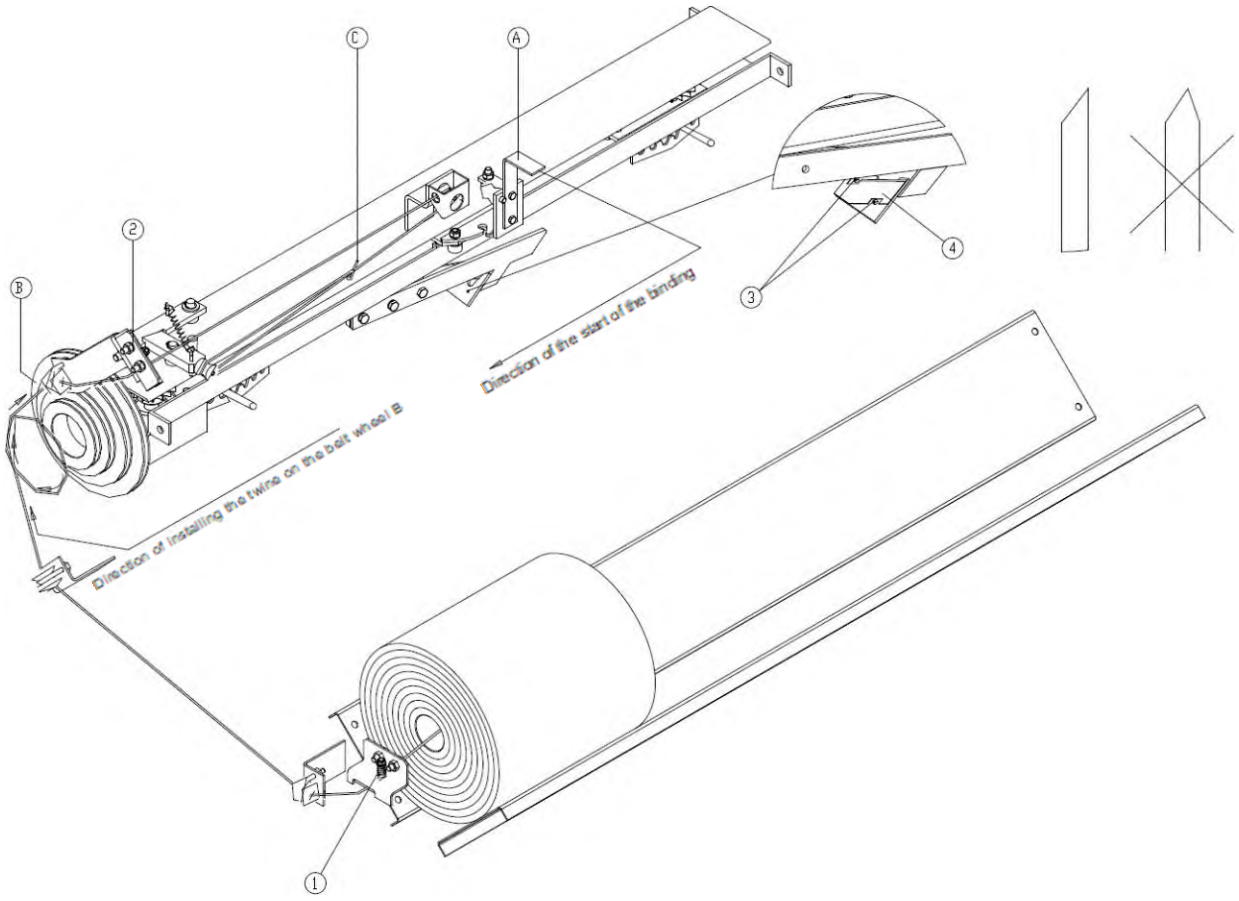

Figure 16. Twine path

3.4.2 Mounting And Operating The Net-Binding Unit

The manufacturer recommends the use of net reels with a length of 2000 m to 3000 m and an areal weight of 14 – 16 g/m.

DANGER

DANGER!

Load the binding net when the tractor engine is switched off and protected against accidental starting up (key removed from the ignition and the parking brake engaged).

WARNING

WARNING!

Install the net for the first time with the assistance of an employee of the authorised or manufacturer's service centre.

To install the net, lift and lower the rear hatch and setting the blade in the standby position. Figure 17 shows the correct path for the net. Put the net reel in the box designed to store the net bale. Place the reel as shown in the Figure, so that the net at the back of the baler unwinds upwards. Put the rod (2), which is a brake of the net, on the roll. Draw the net, as shown in the diagram, through the guiding roller (3) and around the guiding rod (8), enter the end of the net between the rubber roller (4) and the locking roller (5) and pull it a few centimetres below the counterknife (6).

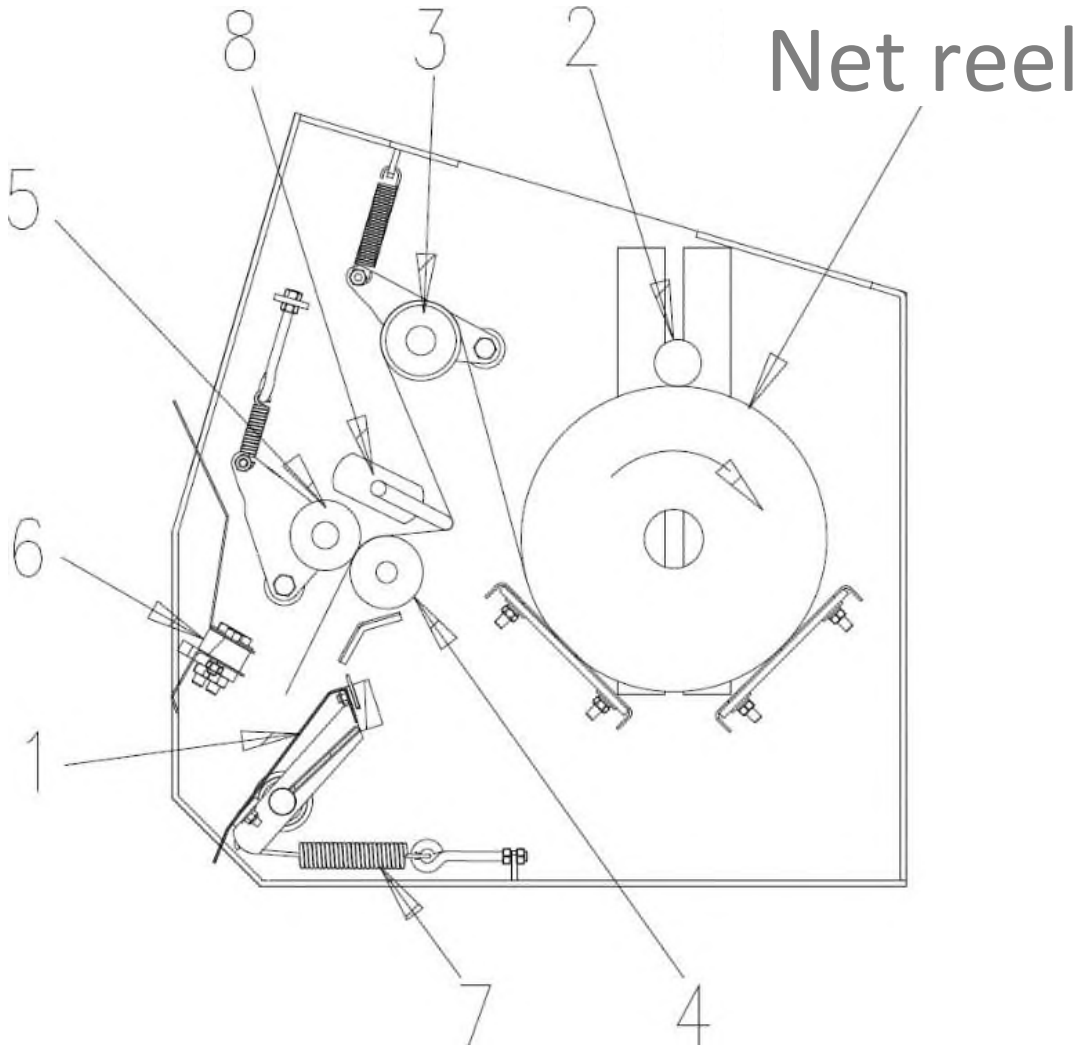

Figure 17. Net path

Carry out the test of cutting the net during the start-up and after longer stoppages. After the correct net installation, as described above, and pulling it below the counterknife, check the net-binding device settings and take special care to start the binding device at a low drive-shaft speed. After approx. 30 seconds, the blade impacts on the counterknife and cuts off the whole length of the net.

Net cutting is considered correct when there are only a few uncut threads which are easy to detach from the net when still in the baler.

An increase in net-cutting efficiency can be achieved by sharpening the net-cutting blade a little, or by increasing the tension of the spring, thus tensioning (7) the support with the blade (1).

3.4.3 The Ensilage Applicator

The ensilage applicator is supplied by the manufacturer as an optional accessory, for an extra charge. The applicator is used for precise dosing a fluid agent, which speeds up the silage process of fodder.

The applicator is located as shown in Figure 18. When the applicator is purchased at a later date, you can install it yourself (after checking its completeness) or at the authorised dealer's or manufacturer's service centre.

The applicator consists of the following items.

- a tank with a capacity of 60 litres
- an inlet with a filter insert
- connections, 2 pieces
- a drain valve
- a cut-off valve
- distribution nozzles with capacities of
  - 350 ml/min
  - 600 ml/min
  - 1,000 ml/min
- a suction line φ 10mm, and L=70cm, number of pcs 1
- a return line φ 10mm, and L=70cm, number of pcs 1
- a delivery line φ 12mm, and L=110cm, number of pcs 1
- a 12V pump

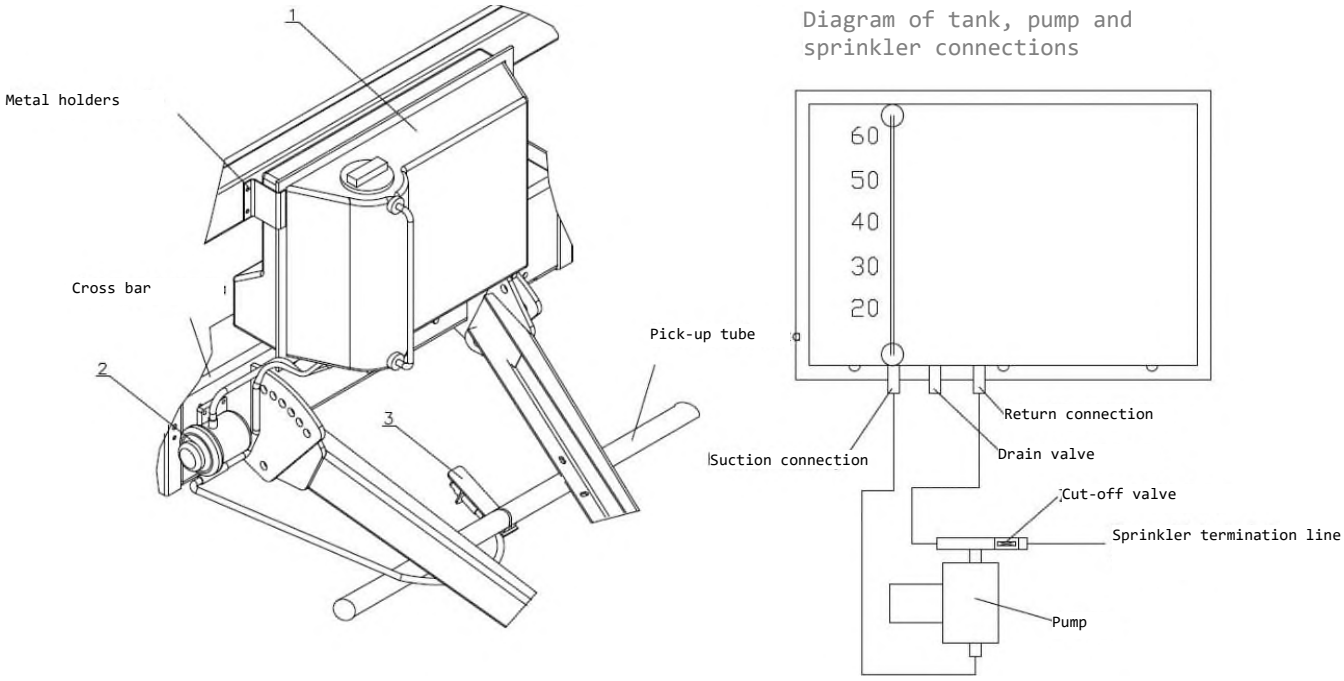

Figure 18. The ensilage applicator

Begin the installation of the applicator by mounting the pump (2) onto the cross bar at the location shown in the diagram (Figure 18).

Then, use the M8x30 bolts and M8 nuts to fit the 60-litre tank (1). Install the sprinkling nozzles (3) on the pick-up tube. This location will facilitate dosing the agent across the whole width of the collected material between the machine pick-up and the rolling chamber. Connect the suction, return and delivery lines, as shown in the diagram.

Plug the supply line of the applicator to the baler's electrical system. The baler is fitted with a dedicated socket for connecting the applicator supply. It is located in front of the front guard, on the right-hand side of the baler. Switching the applicator on and off is done with the On/Off counter switch.

The manufacturer recommends using biologicals or preparations containing effective micro-organisms for ensilaging.

Before you start the pump, fill the tank with the fluid. Prepare the solution according to the manual of the ensilaging agent's manufacturer. Pour the properly prepared preparation through the filter insert located in the tank inlet.

After you fill the whole tank, open the suction connection and use the *"On/Off"* switch of the counter to activate the pump. The pump delivers the fluid to the nozzles. The sprinkling of the crop with the ensilaging preparation starts. Depending on the windrow collected, use nozzles with the appropriate capacities

- Deflector nozzle in a white housing - capacity 1,000 ml/min,
- Deflector nozzle in a red housing - capacity 600 ml/min,
- Deflector nozzle without a housing - capacity 350 ml/min,

WARNING

WARNING!

Do not start the pump when the tank is empty. There is a risk of damaging the pump if operating dry.

After completing the work, rinse the applicator unit and filter insert with clean water. Remove the solid residue of the preparation and all mechanical contamination. Remove the remaining fluid from the tank through the drain valve.

NAME AND ABBREVIATION INDICES

BHP – occupational health and safety

dB (A) - decibel A, sound-pressure unit

kg - kilogram, weight unit

km/h - kilometres per hour, linear-speed unit

kPa – kilopascal, pressure unit

kW - kilowatt, power unit

m - metre, length unit

min - minute, an auxiliary time unit equal to 60 seconds

mm - millimetre, an auxiliary length unit equal to 0.001m

rev - revolution, determining the kind of movement

rpm - revolutions per minute, a rotation-speed unit

Pictogram - an information plate

Rating plate – a manufacturer's plate unambiguously identifying the machine

UV – ultraviolet radiation, invisible electromagnetic, invisible electromagnetic radiation with negative effects on human health, UV radiation has a negative effect on rubber parts

PTOFF - rear Power-Take-Off shaft, part of the agricultural tractor

PTON - Power-Take-On shaft - part of the baler

PTOFF shaft - telescopic joint shaft – a shaft transmitting torque

V - Volt, voltage unit

Hitch, lower-transport hitch – hitch components on a farming tractor (see the tractor's instructions manual)

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