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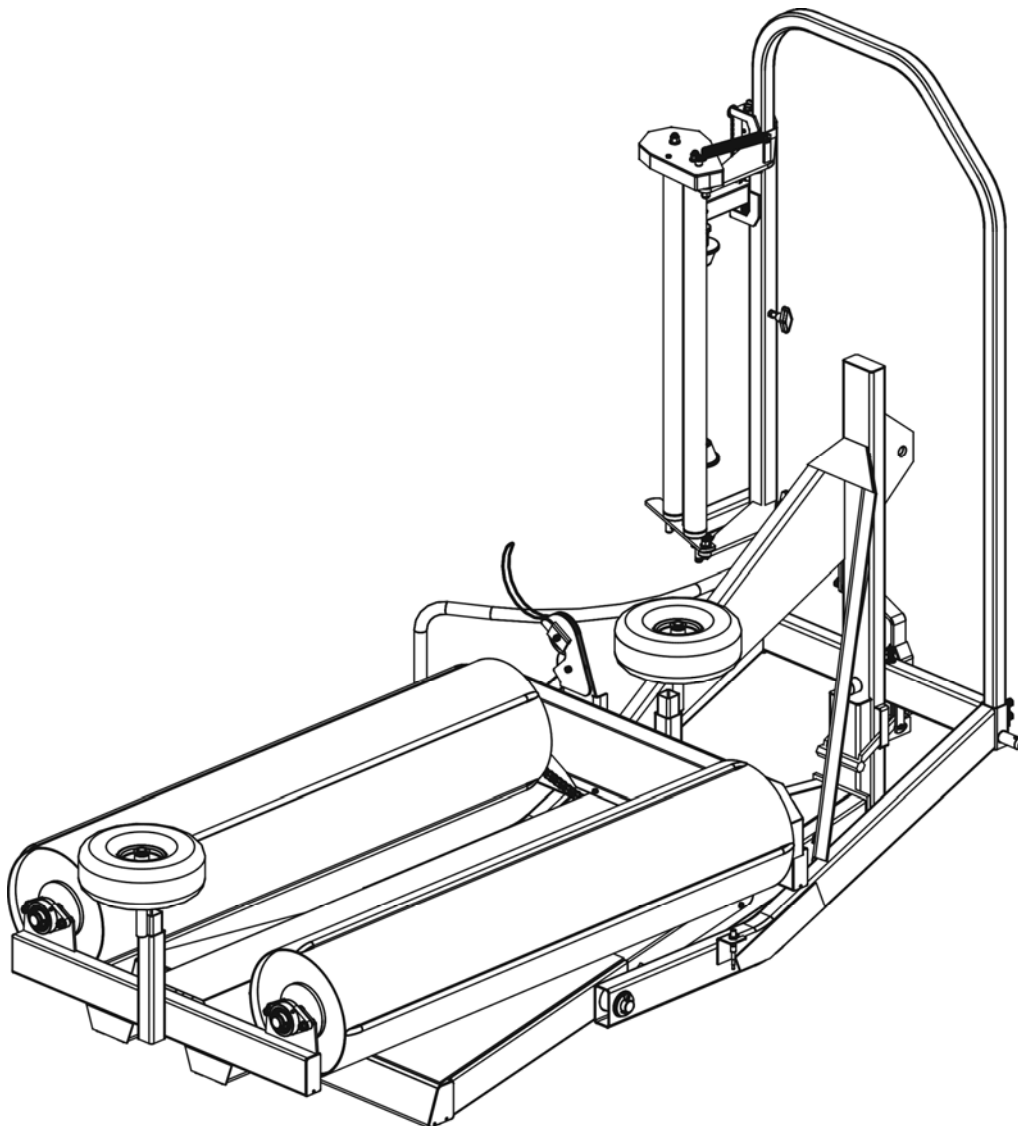
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MOUNTED ROUND BALE WRAPPER

Z235

OPERATION & MAINTENANCE MANUAL



Edition I

Narew 2006



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MOUNTED ROUND BALE WRAPPER

Z235

OPERATION & MAINTENANCE MANUAL

Identification of the machine

Symbol /Type: Z235
KTM number: 0824-949-523-500
Serial:

The serial is stamped on the type plate and on the front cross-bar of lower wrapper's frame. The type plate is riveted to the cross-bar.

In the course of purchase check conformity of the serial stamped on the wrapper with the serial given in the warranty card, in purchase documents and in the operation manual.

The hydraulic system is filled with HL32 hydraulic oil

Quality Inspection Sign.....

The manual is valid together with the Annex No. dated on

The Manufacturer reserves the right to introduce modifications of technical data, operational parameters and design for the purpose of improved quality, operational safety simplified operation.

Remarks and notices about design and operation of the wrapper should be submitted to the manufacturer. This information allows us to evaluate objectively manufactured machines and will be used as hints for further modernisation.

Information about major design alterations will be supplied to users in the form of information leaflets (annexes).

CAUTION!

The operation & maintenance manual is the substantial equipment of the bale wrapper.

The user should read carefully the manual before operation and observe all recommendations given in the manual. This will ensure safe maintenance and failure-free operation of the machine.

The machine has been designed in accordance with generally recognised standards, documents and currently binding legal regulations.

The diagram shows a rectangular type plate with the following content:

- PRONAR logo (stylized 'J' and 'M' characters)
- PRONAR Sp. z o.o.
- 17-210 Narew
- ul. Mickiewicza 101A
- CE mark
- Symbol
- Data prod. KJ
- Numer Masa

FIG. 1.

TYPE PLATE

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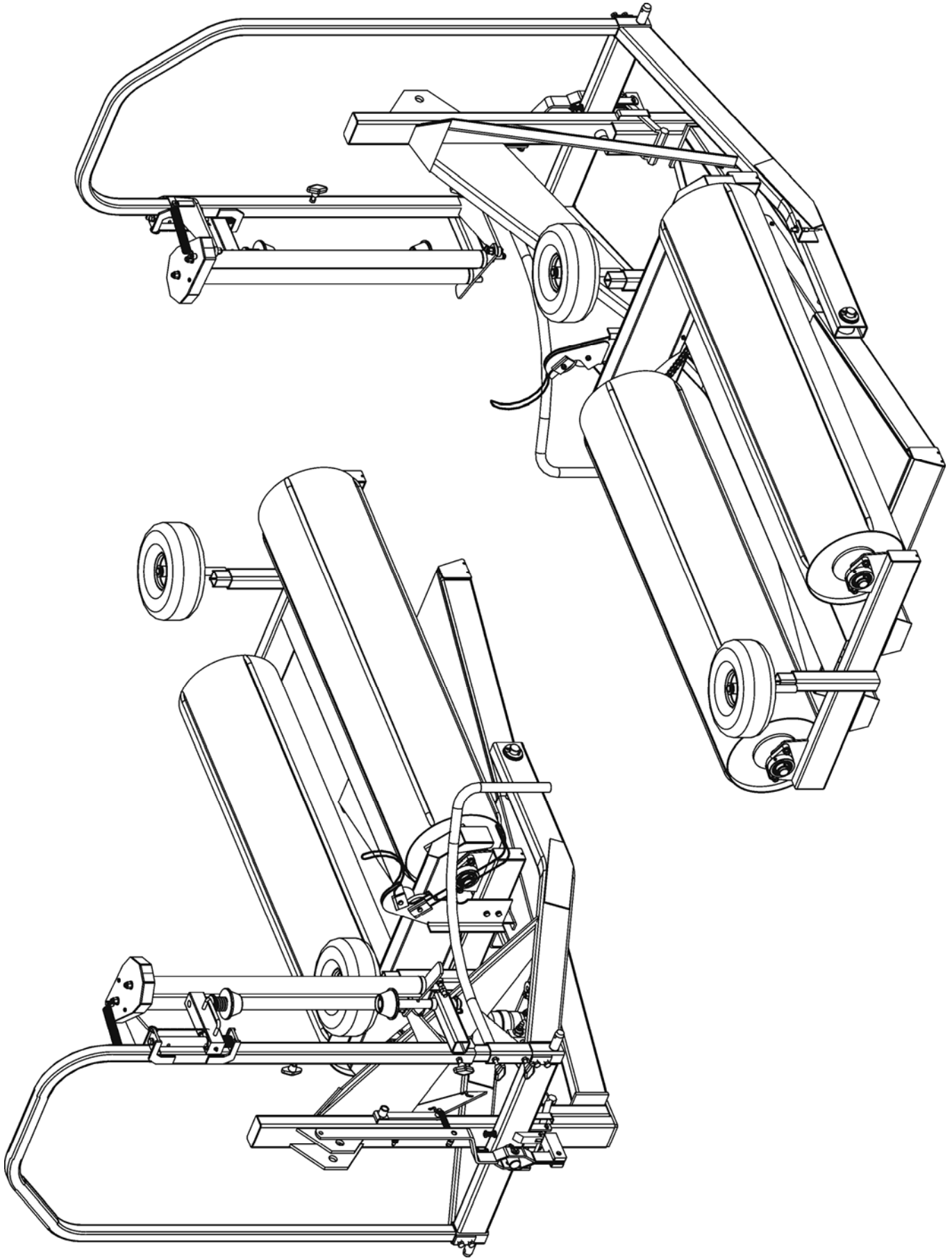


FIG. 2.

SUSPENDABLE BALE WRAPPER Z235

1. INTRODUCTION

1.1 GENERAL INFORMATION

The manual describes basic rules of safe operation & maintenance of the bale wrapper.

If information contained within the manual will be not comprehensible for the user please do not hesitate to contact your dealer or directly the manufacturer.

Especially important are information and recommendation marked in the text by bold characters or preceded by the word "CAUTION".

Information, descriptions of danger and precautions as well as commands and orders concerning safe operations are marked with following sign:



and mentioned in the chapter „Safe operation “.

1.2 APPLICATION OF THE BALE WRAPPER

The bale wrapper is designer for wrapping of bales with adhesive foil of 500 or 750 mm width. Hay bales rolled with help of balers cannot exceed the width of 1400 mm, and their diameter must lie within the range 1000 to 1500 mm. Admissible bale total weight amounts to 1000 kg. The humidity of hay used for hay silage should not be lower than 60%.

The bale wrapper is a stationary machine and requires co-operation of a suitable bale loader. It is recommended to carry out wrapping within the limits of storage place.

The bale wrapper is coupled with a tractor with help of a rear 3-point linkage cat. II.

Wrapping should be carried out with bale wrapper lowered on the ground.

The bale wrapper is fitted with hydraulic drive fed from tractor's external hydraulic system. The hydraulic motor drives gears of turntable and rollers.

CAUTION



The bale wrapper must not be used contrary to its proper application.

Bale wrapping with wrapper In upper position may cause damage of the bale wrapper.

The hydraulic motor is fitted with a valve block protecting the driving system against excessive increase of driving torque. It is prohibited to change factory settings of the valve block.

2. OPERATIONAL SAFETY

2.1 BASIC SAFETY RULES



- Prior to start-up of the bale wrapper the user should read carefully the manual and the manual of the electronic tachometer. During operation observe all recommendations given in the manual.
- Prior to each start-up of the bale wrapper check the machine, if it is ready to operation, and especially with respect to safety.
- If information contained within the manual will be not comprehensible for the user please do not hesitate to contact your dealer, who also provides repair & service or directly the manufacturer.
- Climbing on the machine is allowed only during standstill, with tractor's engine off and ignition key removed. The machine should be lowered and stand stable on level ground.
- It is prohibited to climb onto the machine if raised with help of the rear hitch.
- Careless and improper operation & maintenance of the bale wrapper as well as lack of observation of recommendations given in present manual may endanger human health and life.
- The bale wrapper can be started-up only if all guards and other securing elements are in good order and in right places.
- There is the risk of residual danger, thus application of safe operation rules should be the basic principle of bale wrapper's use.
- Persons unauthorised for driving agricultural tractors including children and drunken persons have no right to use the bale wrapper.
- It is prohibited to use the bale wrapper contrary to its purposes. User, who utilise the bale wrapper in other than prescribed manner, takes all responsibility for all consequences resulting from bale wrapper's use.
- Any unauthorised modification absolves the PRONAR Narew from responsibility for resulting damage or health detriment.
- Prior to each use of bale wrapper check its technical condition, and especially technical condition of fastening elements, hydraulics and protective guards.
- Do not exceed admissible load of the bale wrapper.
- It is prohibited to carry any load during transport drive.
- If any operation failure or damage occurs, stop operation of the bale wrapper and repair the damage.

- **It is prohibited to carry out maintenance & repair works with hydraulic motor drive on. Prior to work switch off tractor's engine, remove the ignition key and lower the bale wrapper so that it stands stable on the ground.**
- During bale wrapper's operation use protection gloves and proper tools.
- All maintenance & repair works should be performed with observation of safety regulations. In the case of wound wash and disinfect wounded place immediately. In the case of serious injuries consult a physician.
- The bale wrapper is marked with information / signalling stickers as described in the table 1 below. The user should take care of legibility and cleanliness of inscriptions & warnings for all time of bale wrapper's operation. In the case of damage or destruction replace missing stickers with new ones – available at manufacturer.
- During transport drives adjust the speed to traffic conditions. Avoid driving on rough terrain and rapid turns, if possible.
- Do not exceed admissible transport speed of the unit tractor + wrapper.

2.2 COUPLING & UNCOUPLING FROM THE TRACTOR

- Take special precautions while coupling the bale wrapper with the tractor.
- While coupling the bale wrapper with the tractor use exclusively proper hitch. Check the safety device.
- In the course of coupling nobody is allowed to stay between the bale wrapper and the tractor.
- The machine disconnected from the tractor should lie stable on dry ground. Protect ends of hydraulic conduits and electric conductors against dirt.

2.3 HYDRAULIC SYSTEM

- The hydraulic system is under high pressure during operation
- While connecting hydraulic conduits to the tractor make sure that tractor's and wrapper's hydraulic systems are unpressurised,
- Check regularly all connections and hydraulic & pneumatic conduits.
- In case of any failure of the hydraulic system stop operation and remove the failure.

2.4 MAINTENANCE

- All maintenance, preservation and cleaning works should be performed only when the tractor's engine is off and with the ignition key removed from the ignition switch and bale wrapper lowered on the ground.
- Check all screwed connections.
- While maintaining the bale wrapper always use protection gloves and proper tools.
- Check technical condition of all protective elements and their fastening.
- During the guarantee period all repairs may be performed only by authorised Manufacturer's service stations.
- If it is necessary to replace an element/part it is recommended to use only original parts or parts recommended by the Manufacturer. Inobservance of these requirements may cause danger to health or life of operators or third persons as well as damage of the machine.

2.5 PRINCIPLES OF USE ON PUBLIC ROADS

- While driving public roads observe traffic regulations.
- Do not exceed the maximum speed. Match the speed to traffic conditions.
- On the console of the rear roller should be installed a triangular plate for slowly moving vehicles (fig. 3).
- In the conditions of poor visibility install red light and red reflector on the extreme edge of the bale wrapper.

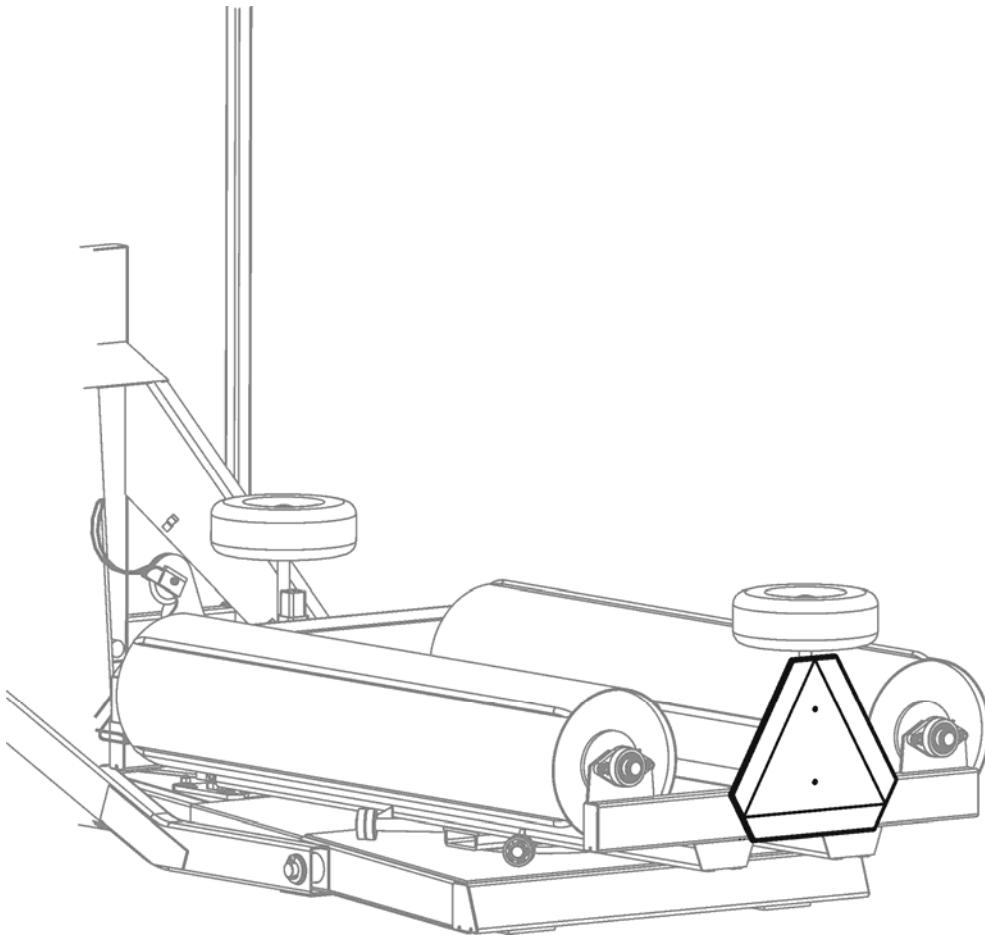


FIG. 3. LOCATION OF THE PLATE FOR SLOWLY MOVING VEHICLES.

2.6 LOADING, UNLOADING, WRAPPING

- It is prohibited to wrap bales of dimensions different from recommended in present manual.
- Prior to wrapping make sure that in the area of the turntable there are no third persons or objects, which could make impossible proper operation of the machine.
- Prior to loading lower the bale wrapper.
- In the course of operation the machine should stand stable on level ground. Operation on slopes is prohibited.
- Adjust the rotational speed of the turntable to dimensions and weights of wrapper bales. It is prohibited to exceed the admissible wrapping speed.
- It is prohibited to exceed the admissible load of the bale wrapper.
- Take special precautions during unloading, for a rolling bale can crush third persons.

2.7 RESIDUAL RISK

The firm Pronar Sp. z o. o. in Narew has made all efforts to eliminate any risk of an accident. However, there is certain residual risk, which may lead to an accident and is connected to actions described below:


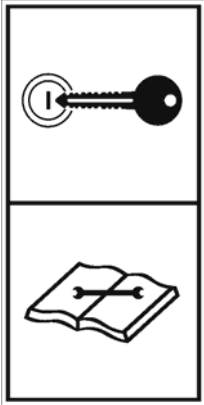

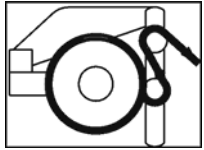
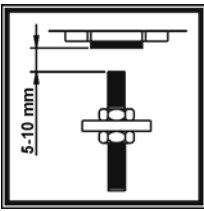
- application of the bale wrapper for other purposes than described in the manual
- stay on the bale wrapper during engine's operation
- operation with removed or inefficient guards
- stay in dangerous zone during operation of the bale wrapper
- stay in dangerous zone during loading/unloading
- operation of the bale wrapper by unauthorised or drunken persons
- cleaning, maintenance and inspection of the bale wrapper
- operation on unstable or sloped ground

The residual risk can be reduced to minimum if following recommendations will be observed:

- judicious and haste-free operation of the bale wrapper
- observation of hints included in the operation manual
- safe distance from dangerous and prohibited zones
- prohibition of stay on the machine during its operation
- execution of maintenance works according to industrial safety rules
- use of protective clothes
- protection of the bale wrapper against access of unauthorised persons, and especially children

2.8 INFORMATION & WARNING STICKERS

Table 1. Information & warning stickers.

Sticker	Explanation	Sticker	Explanation
	<p>Read the operation manual</p>		<p>Prior to maintenance & repair stop the engine and remove the ignition key</p>
	<p>Do not reach into the zone of working knives</p>		<p>Arrangement of foil on stretching rollers</p>
	<p>Fastening of rotational speed sensor</p>		

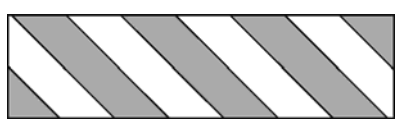
Sticker	Explanation
---------	-------------



Keep safe distance during operation of the bale wrapper



Direction of rotation of the turntable



Identification plate



Identification plate

3. ADDITIONAL INFORMATION

3.1 EQUIPMENT

The equipment of the bale wrapper consists of:

- operation & maintenance manual and spare parts list
- warranty card
- electronic counter
- roller chain – 70 links
- roller chain – 77 links

For customer's order the Manufacturer can supply the plate for slowly moving vehicles.

3.2 WARRANTY CONDITIONS

"PRONAR" Sp. z o.o. in Narew guarantees efficient operation of the bale wrapper if utilised according to technical & operation conditions described in the manual.

Failures detected within warranty period will be removed by the Warranty Service within no longer than 14 working days from the date of delivery to a repair station or within any other agreed period.

Normally wearing parts (drive chains) as well as mechanical damage, damage resulted from improper use, adjustment or maintenance are not subject of warranty.

Detailed warranty conditions are mentioned in the warranty card supplied together with the newly bought bale wrapper.

CAUTION



Demand your dealer to fill the warranty card and complaint coupons exactly and completely. Lack of e.g. sale date or dealer's stamp may render your possible complaint void.

3.3 DELIVERY

The bale wrapper is delivered for sale fully assembled and requires no package. Packed are only: the operation manual, the connection cable and – if ordered – the warning triangle.

The bale wrapper is supplied to the user with a truck or the user can take it by himself with his own tractor.

CAUTION



If the user takes the bale wrapper by himself he should read present manual and observe all recommendations given in the manual. In the case of transportation with a truck the bale wrapper is fastened on the load crate according to generally recognised safety rules. The truck driver should take special precautions while transporting the bale wrapper, because the gravity centre of the loaded truck is shifted upwards.

4. OPERATIONAL DATA

4.1 TECHNICAL DATA

Table 2. Basic technical data

Item	Unit	Z235
Length	mm	2700
Width		
- working	mm	2100
- transport	mm	1160
Height		
- working	mm	2000
- transport	mm	1200
Weight	kg	470
Bale diameter	mm	1000 – 1500
Max bale width	mm	1400
Admissible bale weight	kg	1000
Foil roll length	mm/mm	500/750

4.2 STRUCTURE AND OPERATIONAL PRINCIPLE

Main assemblies of the bale wrapper are shown on figs. (4) and (5). The lower frame is a structure welded of steel profiles and is the main carrying element of the entire machine. To the frame welded are bolts (15), (16) and the eye (14) for fastening of the bale wrapper on a 3-point linkage (hitch) (TUZ) of the tractor. In the front part of the frame installed is the feeder frame (9), and the foil feeder (6). On the vertical column of the lower frame installed is the locking unit (5). On the right side of the frame screwed is the revolution counter (12), connected with the electronic counter installed in tractor's cabin.

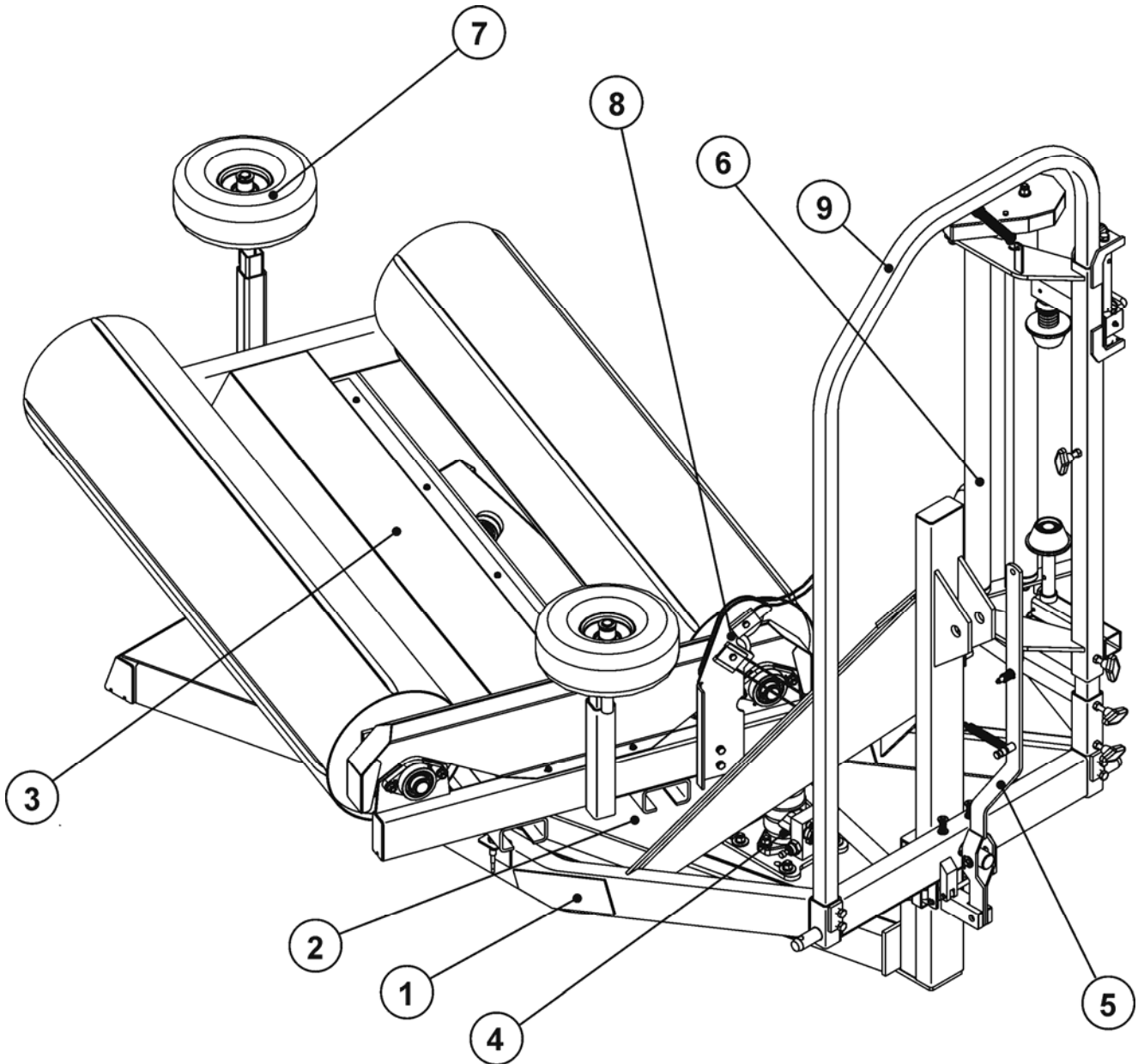


FIG. 4. STRUCTURE OF THE BALE WRAPPER

1 – LOWER FRAME, 2 – TILT FRAME, 3 – TURNTABLE, 4 – DRIVE UNIT, 5 – FRAME LOCK, 6 – FOIL FEEDER, 7 – REAR ROLLER, 8 – CUTTING UNIT, 9 – FEEDER FRAME

The tilt frame (2) is fastened with help of tilt bolts (13) to the lower frame. In the front part of the tilt frame installed is the hydraulic motor driven from tractor's external hydraulic system. The hydraulic motor drives via chain transmission (co??).

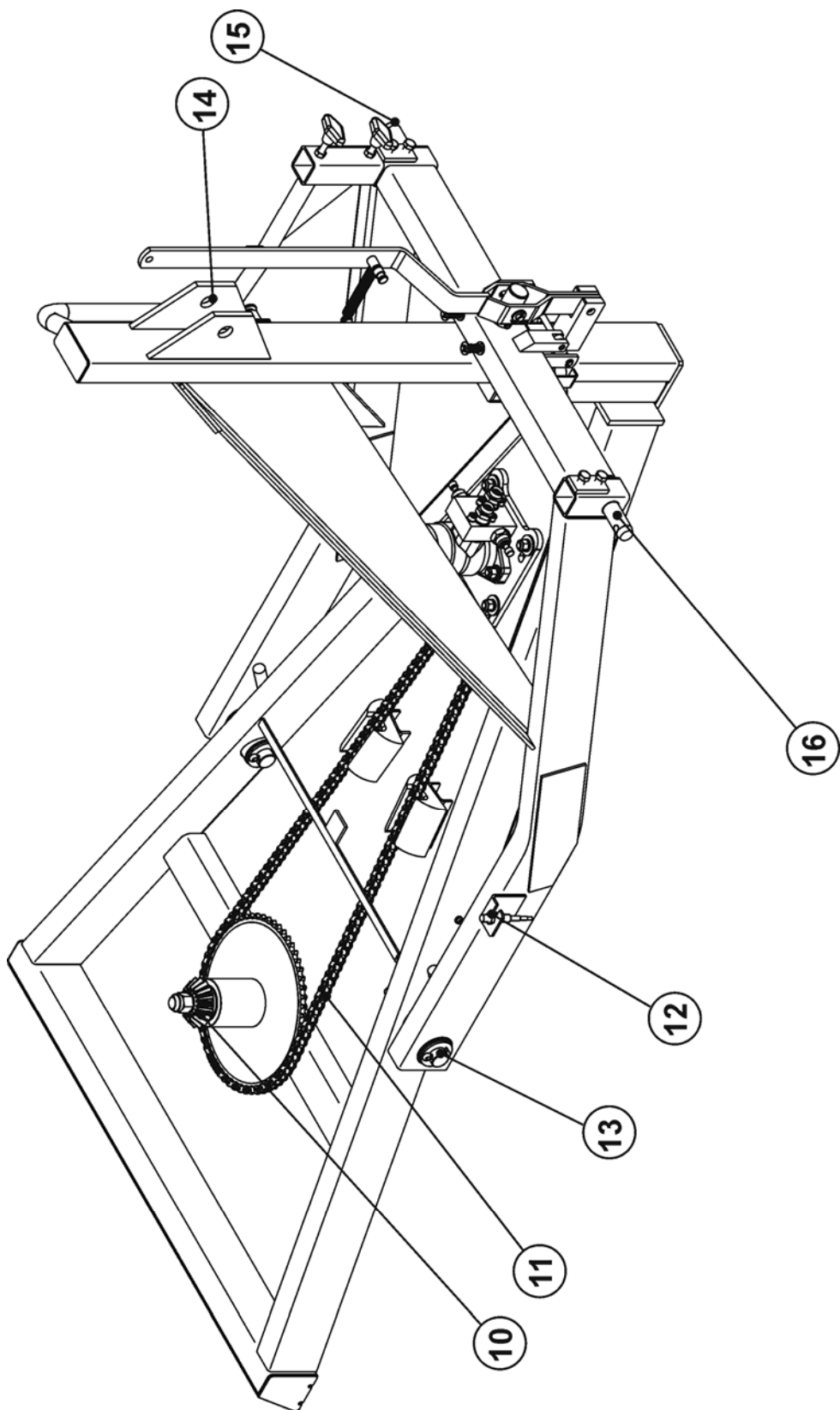


FIG. 5. STRUCTURE OF THE BALE WRAPPER

10 – BEVEL GEAR OF THE TRANSMISSION OF TURNTABLE ROLLERS DRIVE, 11 – DRIVE CHAIN, 12 – TURNTABLE REVOLUTION SENSOR, 13 – TILT BOLTS, 14, 15, 16 – FASTENING POINTS TO THE TRACTOR

4.2.1 Foil feeder

The foil feeder is installed on the frame of the bale wrapper's feeder. The unit is adapted for unwinding of foil of 500 and 750 mm height. The foil is fastened between conical supporting rollers (3) and (4). The foil strip passes through vertical knurled stretching rollers (1) and (2). In the upper part of the feeder installed is the transmission gear, which adjusts the rotational speed of the roller (1), what causes that the wrapped foil is stretched properly. The pressure nut (5) is used also for stretching of the foil. The screws (9) are used for adjustment of feeder height in relation to the frame.

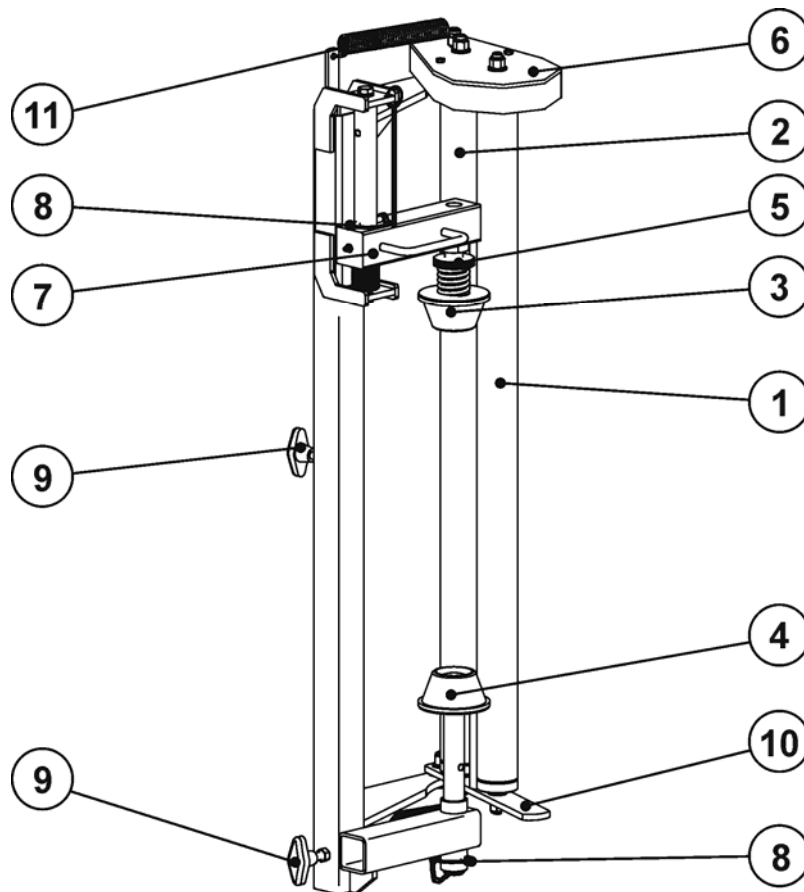


FIG. 6. FOIL FEEDER

1 – ROLLER I, 2 – ROLER II, 3 – UPPER SUPPORTING ROLLER, 4 – LOWER SUPPORTING ROLLER, 5 - NUT, 6 – TRANSMISSION GEAR HOUSING, 7 – FOIL CLAMP, 8 – PIN, 9 – SCREW, 10 – FRAME LEVER, 11 – STRETCHING SPRING

4.2.2 Turntable

The structure of the turntable is shown on fig. (7). The table frame (3) is permanently connected with the wheel (5) of the chain transmission. If the table rotates, rotates also the shaft (4), which drives rollers (1) and (2) via two chain transmissions. Each roller has two sprockets, which enable adjustment of transmission ratio of both transmission gears, depending on used wrapping foil.

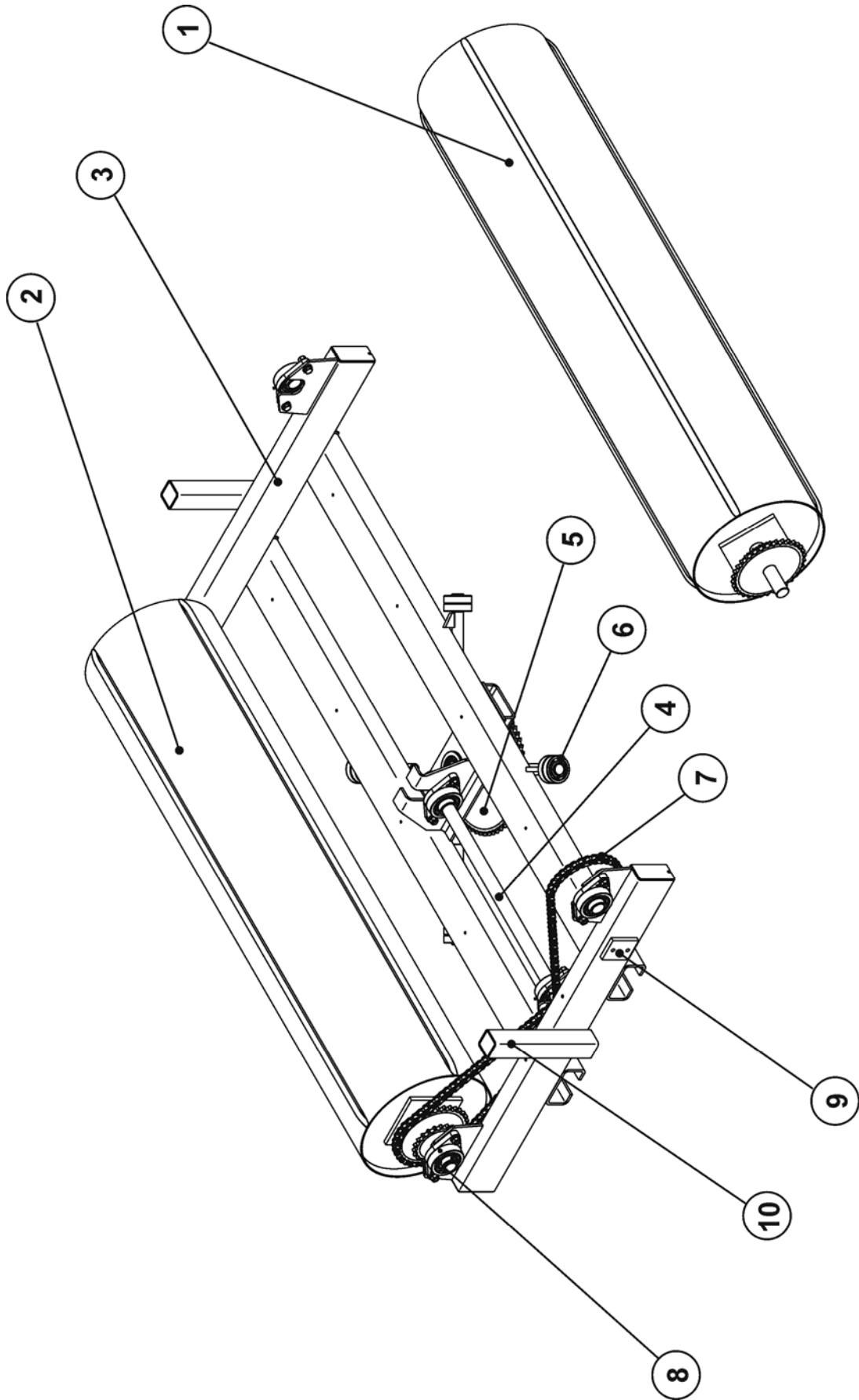


FIG. 7. TURNTABLE

1 – WHITE ROLLER, 2 – GREEN ROLLER, 3 – TABLE FRAME, 4 – DRIVE SHAFT, 5 – SPROCKET, 6 – BEARINGS, 7 – CHAIN, 8 – BEARING UNIT, 9 – SEAT FOR FASTENING OF THE CUTTING UNIT, 10 – SEAT FOR FASTENING OF THE REAR ROLLER

4.2.3 Tilt frame lock

The tilt frame lock is a device designed for immobilisation of the tilt frame during wrapper's operation. Main components of the unit are shown on the fig. (8). In the course of wrapping the tilt frame becomes locked with protruding lock bolt (2). Prior to raising of the wrapper for unloading release the lock with the lever (1) in direction marked with the arrow. When the bolt slips entirely into the frame, it becomes locked until the tilt frame becomes fully lowered.

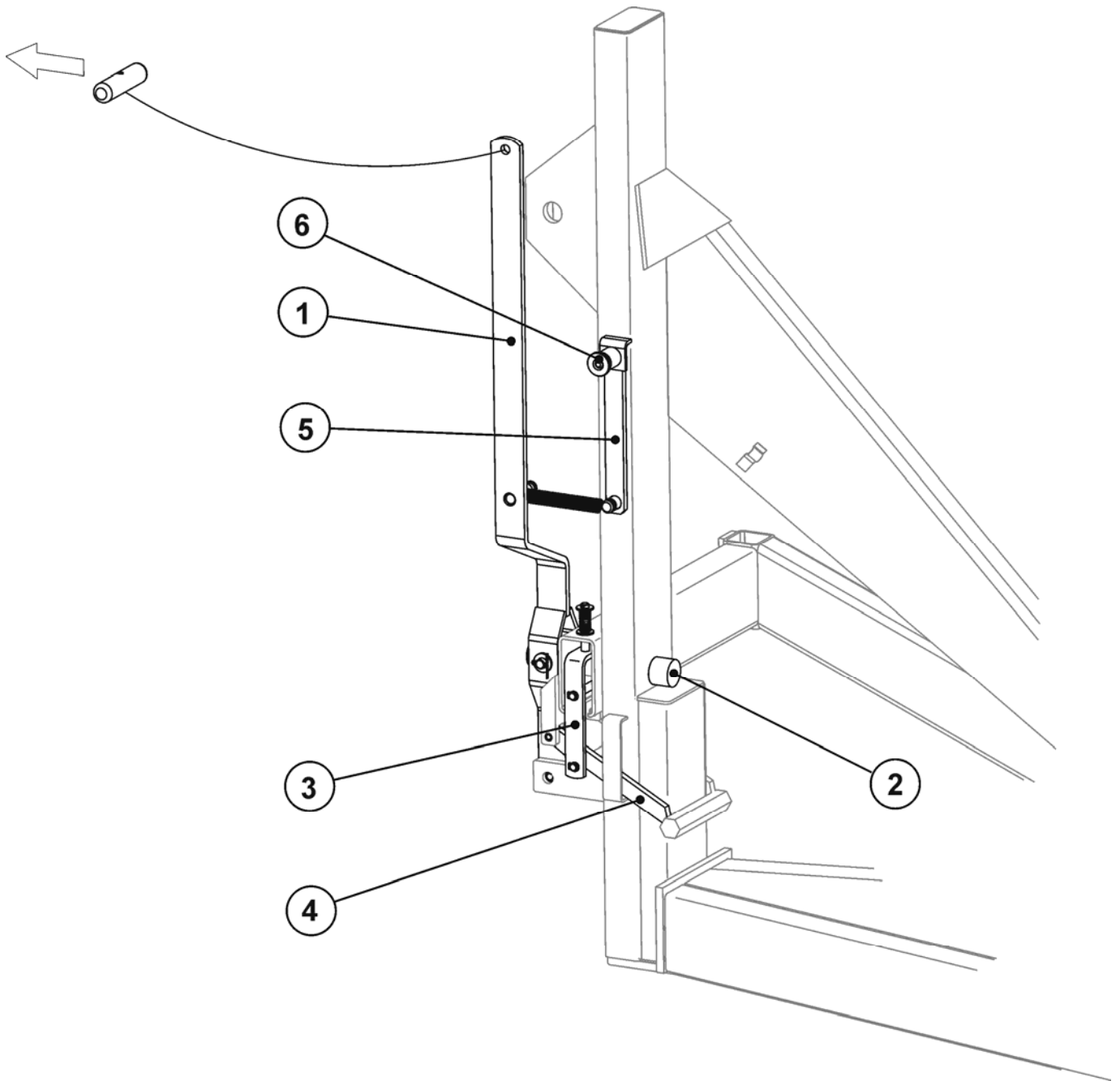


FIG. 8. TILT FRAME LOCK

1 – LOCK LEVER, 2 – LOCK BOLT, 3 – LOCKING PROFILE, 4 – LOCK LATCH, 5 – LEVER LOCK, 6 - BOLT

5. OPERATION PRINCIPLES

5.1 PREPARATION FOR WORK

In the course of preparation for work check:

- condition of bolts and eye for coupling with a tractor
- condition and correctness of fastening of protective guards and shields
- technical condition of hydraulic system
- operation of the tilt frame lock

5.2 COUPLING WITH THE TRACTOR

Prior to coupling with the tractor make sure that the bale wrapper stands on stable level ground. To couple the bale wrapper with the tractor perform following actions:

- drive back the tractor and connect two pull rods of the rear hitch with bolts of the bale wrapper.
- connect upper linkage of the rear hitch with suitable seat of the bale wrapper.
- secure connections with pins and check the securing device
- connect conduits of hydraulic system to the tractor
- relocate the release cable of the tilt frame lock to the cabin
- install wrap counter in the visible place in the cabin
- connect the electric conductor with the wrap counter.

CAUTION



In the course of coupling nobody is allowed to stay between the bale wrapper and the tractor.

While uncoupling the wrapper from the tractor perform the same actions as above, but in reverse order. Uncoupled bale wrapper should stand on dry level ground. Protect hydraulic conduits and electric cables against dirt.

5.3 PREPARATION FOR WORK

The bale wrapper should be transported to the location, where wrapped bales will be stored. Operation in the bales storage place eliminates risk of foil tear.

The bale wrapper coupled to the tractor should stand on stable level ground. Prior to work check operation of the tilt frame lock, hydraulic system and counter. For this purpose start the hydraulic motor drive. The turntable should rotate smooth and without jerks in clockwise direction. In the course of turntable operation check the wrap counter.

CAUTION



Detailed information about operation and maintenance of the counter are given in the counter manual.

The tilt frame lock should be tested with stopped hydraulic motor. For this purpose pull and hold the lock cable and raise the machine. The tilt frame should lean with its rear edge on the ground and deflect to the position, which enables unloading. When the bale wrapper is lowered (the lock cable is loose) the tilt frame lock will engage automatically.

5.4 INSTALLATION OF THE FOIL ROLL

The foil feeder is adapted for unwinding of foil of 500 or 750 mm height. The fig. (9) pos. (A) shows the foil feeder for 500 mm roll.

To install the roll tilt the tilt frame of the feeder with the lever (7). Next, unlock the upper cotter pin (8), shift the clamp (4) upwards. Lay the foil on the lower pressure roller (1) and lower the clamp (4). Install the cotter pin (8) and tighten the nut (3). Lower the tilt frame. Finally, unwind a piece of foil and pass it through the rollers of the tilt frame as shown on the fig. (9), pos. (C).

If necessary, the entire feeder unit can be adjusted in relation to the feeder frame (6). For this purpose unscrew the screws (5) and adjust the position of the feeder so that the centre of the foil roll and the centre of the wrapped bale are approximately at the same height.

Prior to installation of a 750 mm high roll shift the clamp arm together with the upper pressure roller and the lower pressure roller to the position (II). The position (I) is used for installation of a roll of 500 mm height.

CAUTION



Prior to installation of a foil roll stop tractor's engine and remove the ignition key. The bale wrapper must be in lowered position. Having installed the foil roll check fastening of the roll, tightening of screwed connections and correctness of installation of securing cotter pins.

In the course of bale wrapping the foil is always stretched, if properly installed. If not, tighten the nut (3) so as to increase the pressure of rollers (1) and (2) onto the foil roll.

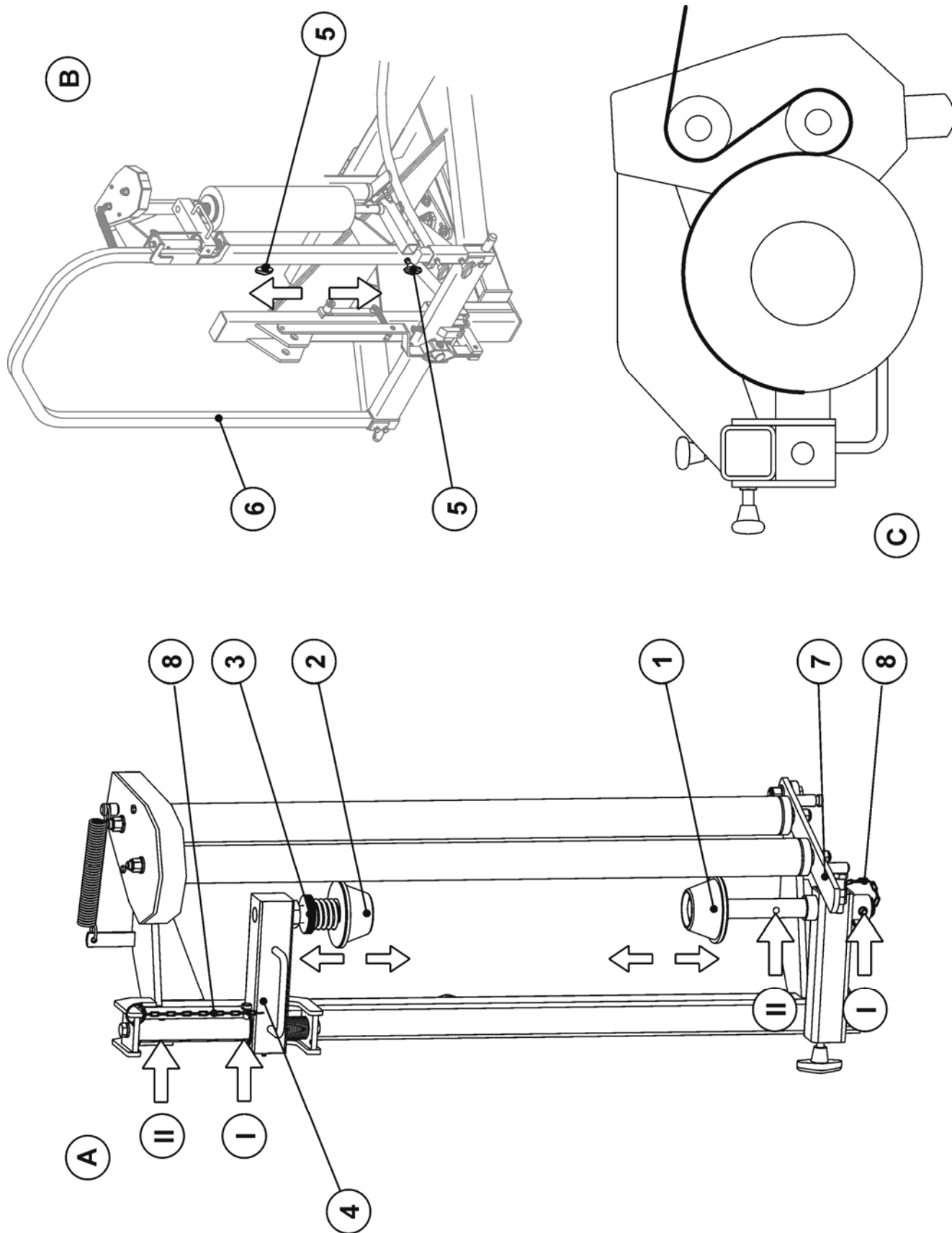


FIG. 9. INSTALLATION OF THE FOIL ROLL

1 – LOWER PRESSURE ROLLER, 2 – UPPER PRESSURE ROLLER, 3 – NUT, 4 – CLAMP, 5 – SCREW, 6 – FEEDER FRAME, 7 – TILT FRAME LEVER, 8 – SECURING COTTER PINS

5.5 LOADING, UNLOADING, WRAPPING

Prior to loading of bales make sure that the bale wrapper is properly coupled with the tractor. Loading can be carried out only when the bale wrapper stands on stable and level ground. The best arrangement of the turntable for loading of bales is shown on the fig. (10). For loading of bales use suitable loader or conveyor. The wrapped bale should be placed in the centre of rollers of the turntable.

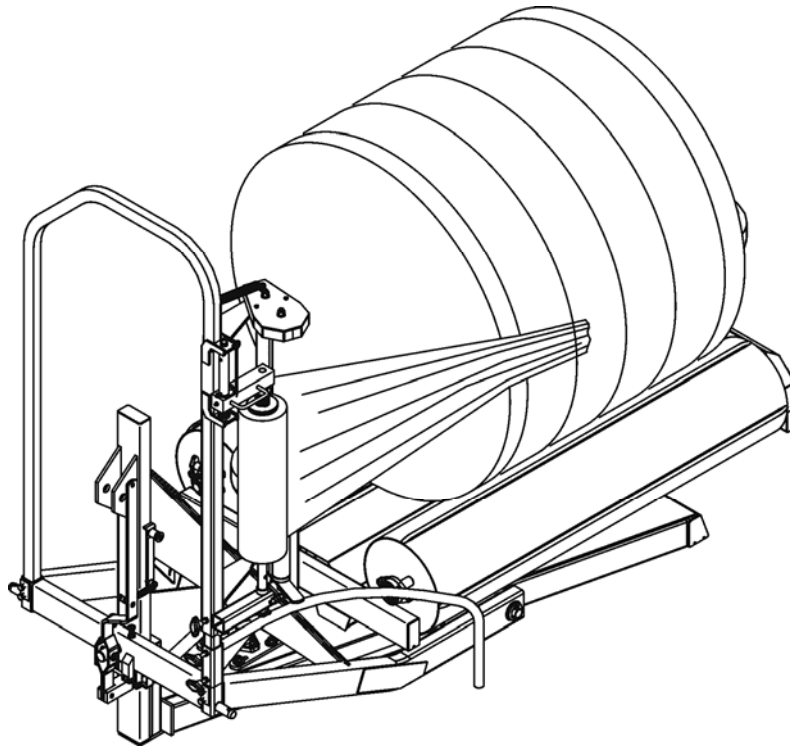


FIG. 10. LOADING OF THE BALE

Having loaded the bale, unwind manually a piece of foil and pass it through the bale cord. Prior to start of the hydraulic motor activate the wrap counter.

In the course of bale wrapping keep constant rotational speed of the turntable. Depending on applied foil the number of wraps should amount to:

- 16 for foil of 750 mm width
- 24 for foil of 500 mm width

Such number of wraps causes that the bale is wrapped twice. If the foil manufacturer recommends another number of wraps, apply the recommended number. Having wrapped the bale with recommended number of wraps stop the bale wrapper in position shown on the fig. (11 a). The white roller of the turntable should be in the wrapper's rear.

CAUTION



It is prohibited to wrap bales of diameter different than given in the manual.

Prior to loading lower the bale wrapper.

Do not exceed the admissible load of the wrapper.

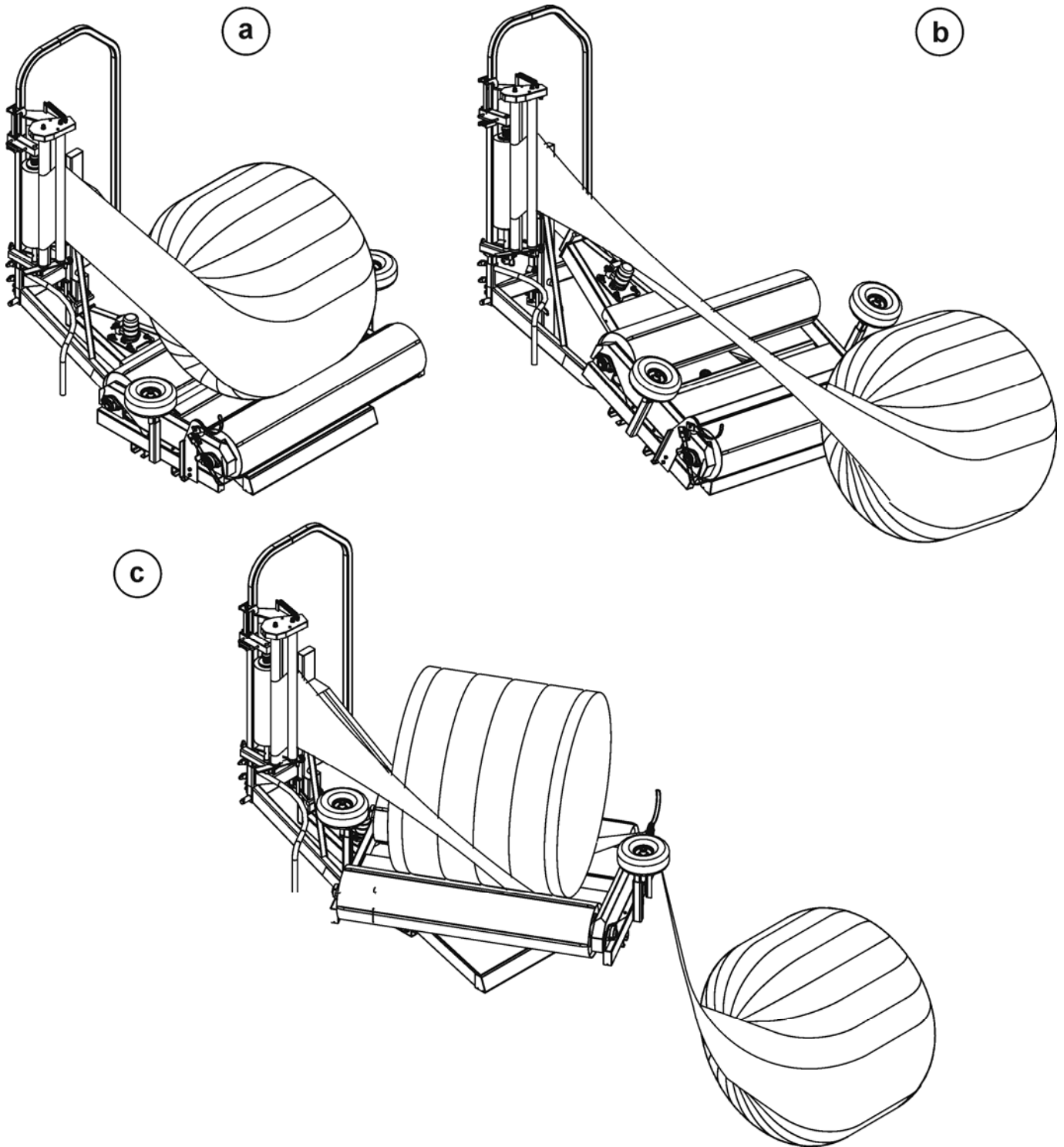


FIG. 11. UNLOADING OF BALES

CAUTION



Prior to wrapping make sure that in the turntable operation zone there are no third persons or objects, which could make impossible proper work of the machine.

During operation, the bale wrapper should stand on stable level ground. Operation of the machine on slopes is inadmissible.

Match the rotational speed of the turntable to weight and dimension of wrapped bales. Do not exceed the admissible wrapping speed.

Do not use foils not suitable for co-operation with the machine.

Unloading of wrapped bales can be carried out only if there are no third persons in the unloading zone. The rolling out bale can cause an accident.

Release the tilt frame lock and raise the bale wrapper with the rear hitch until the bale rolls on the ground. The wrapping foil should be stretched above rollers (fig. 11b). Next, lower the machine. The tilt frame locks automatically, under condition that the release cable is loose and the lock string is not secured with the latch.

Having turned the turntable by 90° the white roller is on the right side of the machine (fig. 10). In such wrapper's position load the next bale squashing the stretched foil. After next start of the bale wrapper the foil becomes automatically cut with help of the cutting unit. In the case of accidental break of the foil carry out the wrapping in the same way as for the first bale i.e. pass the foil through the bale cord.

6. MAINTENANCE

6.1 ADJUSTMENT OF DRIVE CHAIN TENSION

To inspect and/or adjust the tension of the drive chain, connect the hydraulic conduits to the tractor. The turntable should be positioned as shown on the fig. (12 a). Next, disconnect hydraulic conduits and remove the guard (1) of the drive unit.

CAUTION



Chain adjustment can be carried out only if the bale wrapper stands on the ground and the hydraulic conduits are disconnected.

The chain backlash should be checked in the distance of 180 mm from the guide edge (A), fig. (12b). If deflection of the chain pressed with thumb is greater than 10 mm, it is necessary to adjust it. For this purpose loosen four nuts (4) fastening the hydraulic motor, and the counter-nut (3) of the stretching screw (2). The tension of the chain should be adjusted with the screw (2). The hydraulic motor should be shifted in direction (B) shown on the drawing. Having obtained required chain tension tighten the counter-nut (3) and nuts (4). Install the guard (1).

In newly purchased bale wrappers adjust the chain after first 15 – 20 bales, and later every 150 wrapped bales. Inspection and/or adjustment of the chain tension should be carried out if the chain transmission works too loud. The loud work is the symptom of excessive chain backlash, which increases together with time passage. Chain elongation being the reason of such behaviour is the normal symptom. If chain adjustment is impossible, replace the chain with a new one.

6.2 ADJUSTMENT OF ROLLERS DRIVE CHAIN TENSION

Inspection of tension of the chain driving the turntable rollers should be carried out in the same time as the inspection of drive chain. For this purpose remove the chain guard and check the chain tension by pressing it with thumb in the half of its length, fig. (13). If the deflection exceeds 15 mm, the chain should be adjusted.

To adjust the chain properly, loosen the fastening nuts of bearing units on the chain side (front part of the turntable), and on the opposite side of the same roller (rear part of the turntable). Shift the roller symmetrically together with bearing units. Having obtained required chain backlash screw the front bearing unit, check position of the roller once again and screw the rear bearing unit.

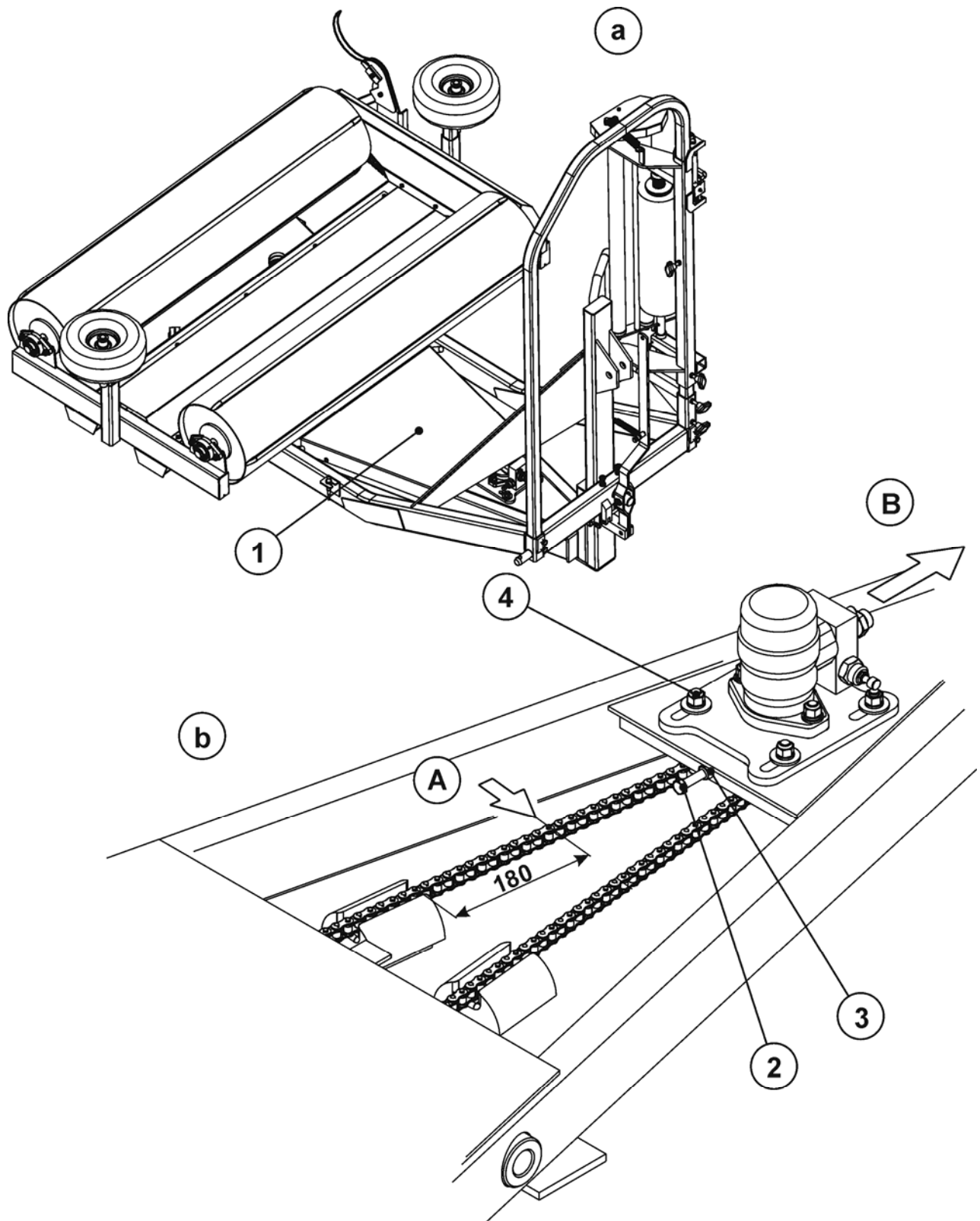


FIG. 12. ADJUSTMENT OF DRIVE CHAIN

1 – DRIVE GUARD, 2 – STRETCHING SCREW, 3 – COUNTER-NUT, 4 – NUT FASTENING THE HYDRAULIC MOTOR,
 A – PLACE OF INSPECTION OF CHAIN TENSION, B – DIRECTION OF MOTOR SHIFT DURING ADJUSTMENT

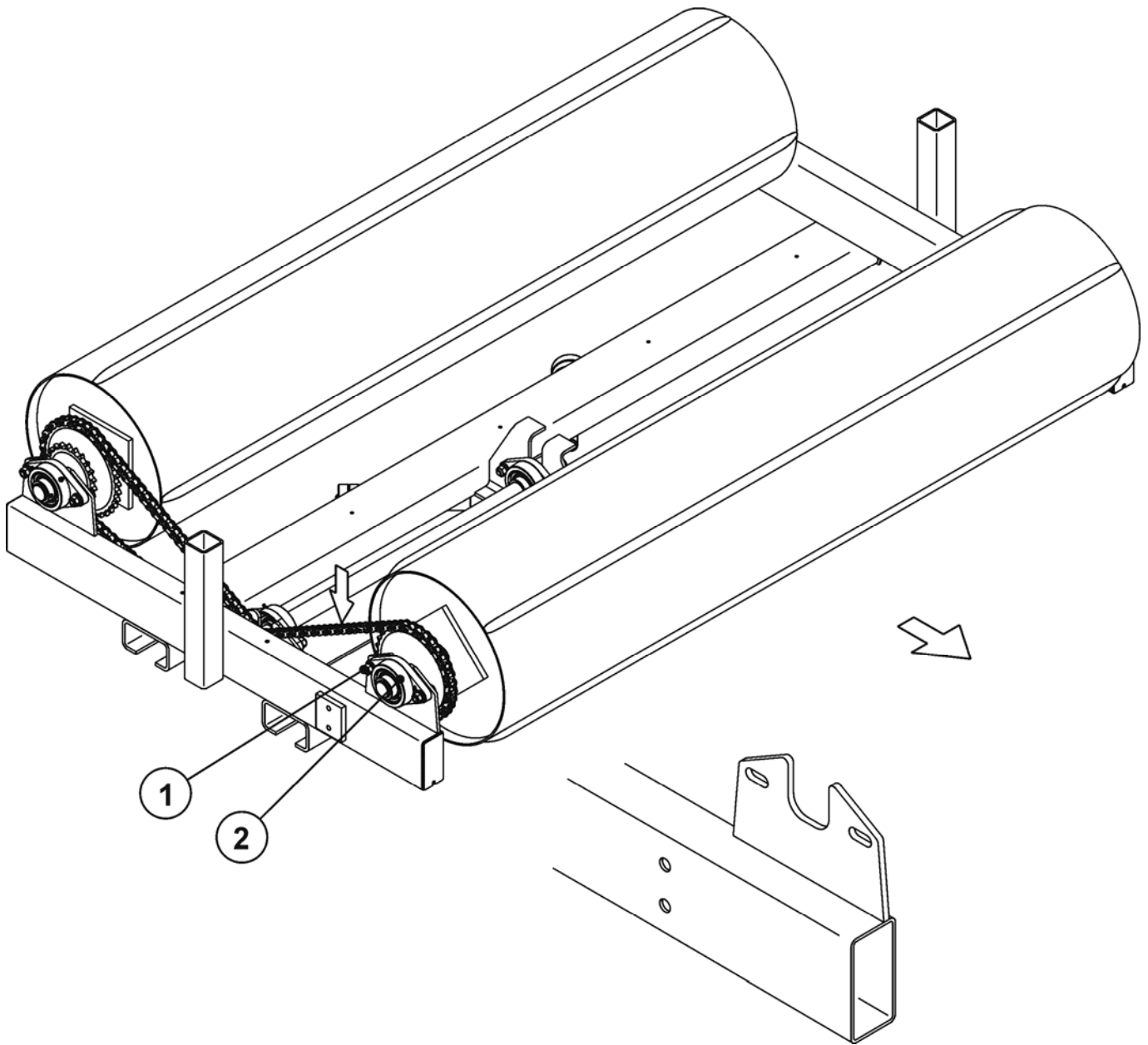


FIG. 13. ADJUSTMENT OF ROLLERS DRIVE CHAIN

1 – SCREWED CONNECTION, 2 – BEARING UNIT

6.3 REPLACEMENT OF DRIVE CHAINS, CHANGE OF TRANSMISSION RATIO

All chains installed in the bale wrapper should be replaced if it is impossible to adjust them properly. In this case the chain transmission starts to work loudly and the wear of sprockets increases.

To replace the chain, remove the connecting link and remove the chain. Depending on transmission, where the chain works, loosen fastening of the hydraulic motor or bearing units of turntable rollers. Install the new chain and check protection of the connecting link. Adjust the chain tension and perform the test start-up of the bale wrapper.

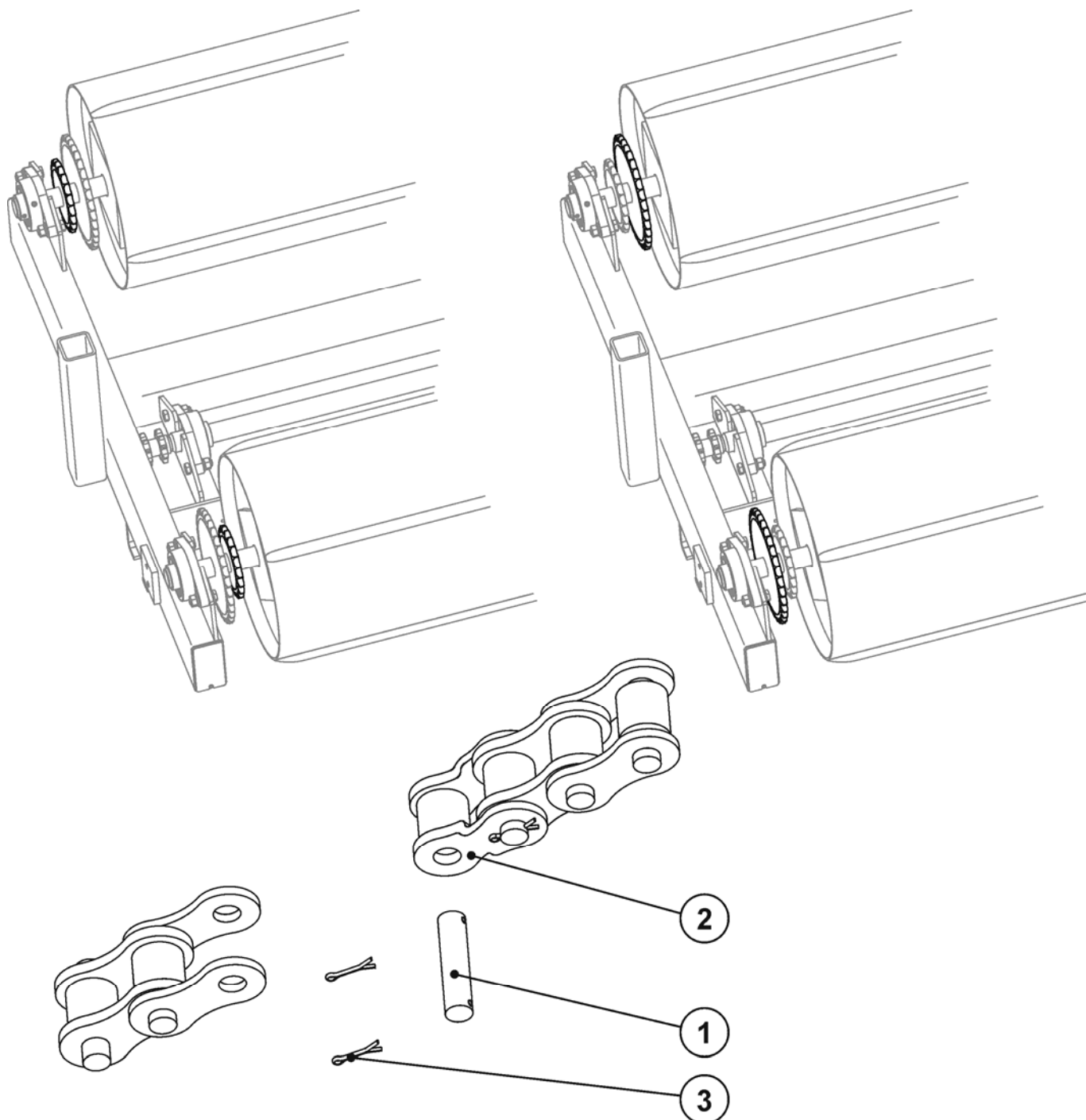


FIG. 14. INSTALLATION / REMOVAL OF THE ROLLER DRIVE CHAIN

1 – CHAIN BOLT, 2 – CONNECTING LINK, 3 – PROTECTIVE COTTER PIN

Depending on applied foil install suitable drive chains of turntable rollers. Improperly selected transmission ratio may cause improper wrapping of the bale.

Table 3. Chain length

Foil width [mm]	Chain length [number of links]
500	70
750	77

6.4 MAINTENANCE OF HYDRAULIC SYSTEM

It is necessary to take as the principle that the oil in the bale wrapper hydraulic system and the oil in the external tractor hydraulic system is of the same type. Application of different oil types is prohibited. **New bale wrappers are filled with HL32 hydraulic oil.** Interchangeable oil types are given in the table (4).

The hydraulic system of the trailer should be absolutely tight. Test of tightens consists in coupling of the bale wrapper with the tractor and performing of the test start-up. If oil leaks at connections of hydraulic conduits, screw the connection tightly; if leakage persists – replace the conduit or the connector with a new one. If oil leaks between connections (leaky conduit), replace the damaged conduit. Each mechanical damage also requires replacement of damaged element.

CAUTION



Operation of the bale wrapper leaky hydraulic system is prohibited. Condition of the hydraulic system should be inspected currently during operation of the trailer.

If the hydraulic systems is used very intensively replace hydraulic conduits every 4 years.

Table 4. Interchangeable oil types

NO.	MANUFACTURER	OIL TYPE
1	LOTOS	L-HL 32
2	AGIP	OSO 32
3	ARAL	VITAM GM 2
4	BP	ENERGOL HLP 32
5	CASTROL	HYSPIN AWS 32
6	ELF	ELFOLNA 32
7	ESSO	NUTO H 32
8	Fina	HYDRAN 32
9	MOBIL	Mobil DTE 24
10	Russia	IGP 8
11	SHELL	TELLUS OIL 32
12	TEXACO	RANDO HD A 32
13	VALVOLINE	ULTRAMAX AW 32
14	Hungary	HIDROKOMOL P 32
15	SUN	SUVIS 832 WR
16	INA	HIDRAOL 32 HD
17	DEA	ASTRON HLP 32

Viscosity class acc. to ISO 3448 VG 32

Average kinematic viscosity at 40°C 32

Quality class H ISO 6743/99

Quality class H DIN 51502

6.5 LUBRICATION

The bale wrapper should be lubricated in points shown on the fig. 15, and described in the table 5.

Table 5. Lubrication points

No. On the fig. 15	Lubrication point	Number of points	Lubricant	Frequency
1	Transmission gear of foil feeder	1	solid	every 10 working days
2	Foil clamp guide	1	solid	every 10 working days
3	Support roller bolt	2	solid	every 10 working days
4	Tilt frame bolts	2	solid	every 10 working days
5	Bearing unit	6	solid	every 10 working days
6	Roller drive chains	2	solid graphite	every 10 working days
7	Turntable drive chain	1	solid graphite	every 10 working days
8	Bevel gear	1	solid	every 10 working days
9	Tilt frame lock bolt	1	solid	every 10 working days

CAUTION



- Once a year carry out thorough technical inspection of the bale wrapper, and before all: technical condition of coupling elements, hydraulic system and tilt frame lock, and also lubricate all elements mentioned in the table 5.
 - If any operation failure or damage occurs, stop operation of the bale wrapper and repair the damage/ remove the failure
 - It is prohibited to maintain or repair the bale wrapper when operating.
 - All maintenance & repair works should be performed with observation of safety regulations. In the case of wound wash and disinfect wounded place immediately. In the case of serious injuries seek medical assistance
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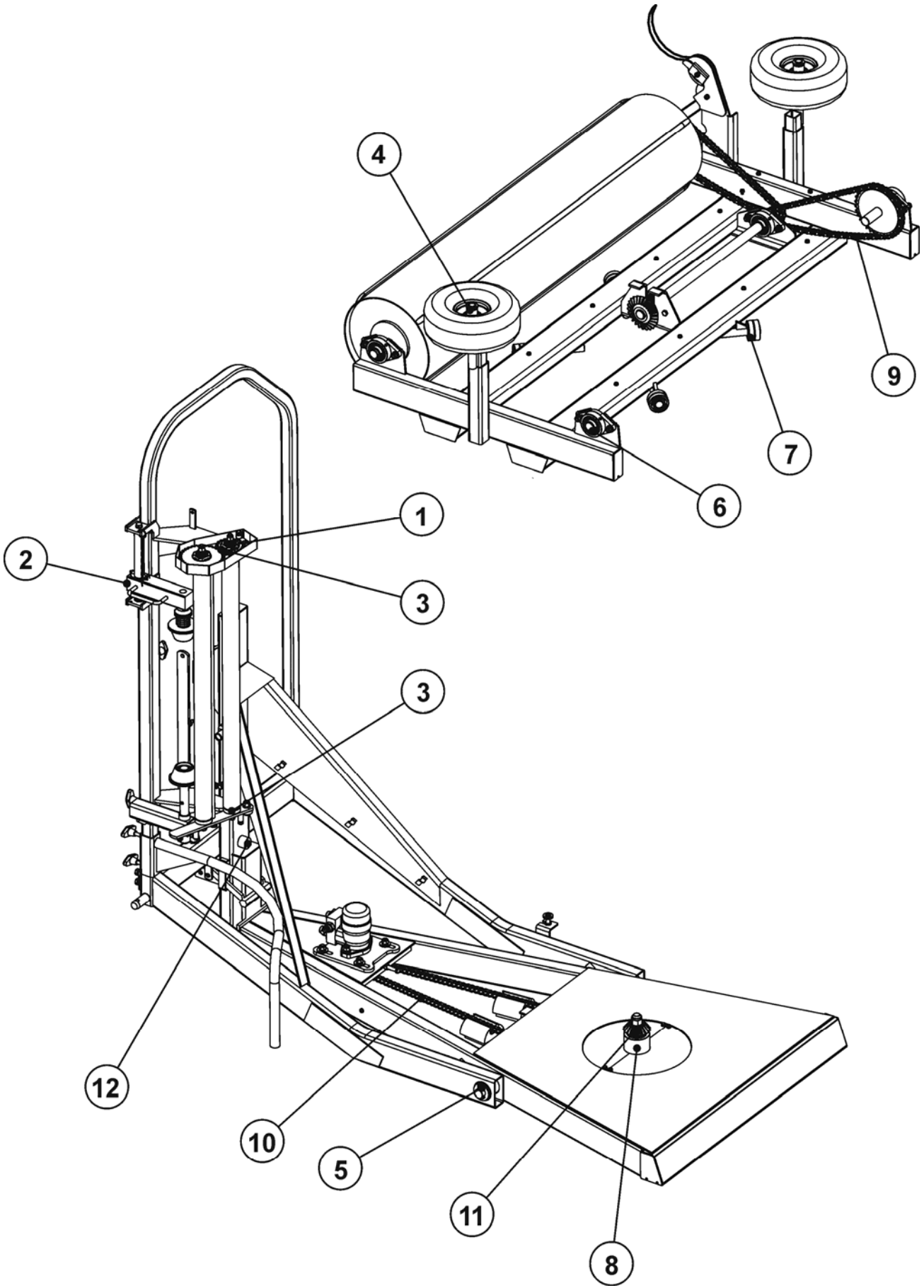


FIG. 15. LUBRICATION POINTS