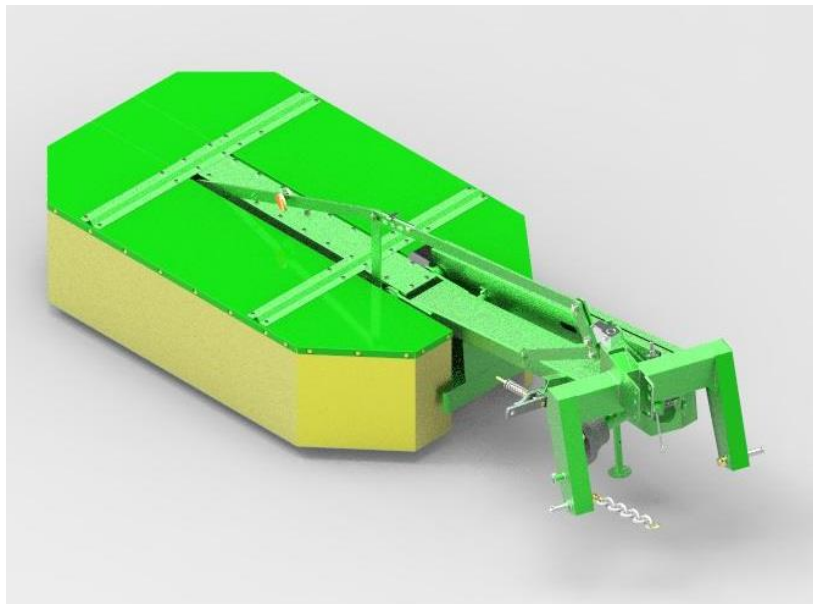




INSTRUCTION MANUAL
CATALOGUE OF SPARE PARTS
WARRANTY



Rotary Drum Mower
1.85m; 1.65m; 1.35m; 1.35mini
and versions with a hydraulic cylinder 1.85m; 1.65m

Edition 05



ATTENTION!

This instruction manual should be read before use and the safety rules contained herein should be followed.

The instruction manual is the basic equipment of the machine!

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

In the event of loss or destruction a new copy must be purchased by ordering it at the point of machine sale or by the manufacturer.

In the event of a sale or granting access to the machine to another user the instruction manual must be attached with a declaration of conformity for the machine.

The manufacturer reserves all rights to the instructions for use.

Copying, processing of the instruction and its parts without permission of the manufacturer is prohibited.

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KOŁASZEWSKI guarantees efficient operation of the machine if used in accordance with the technical and operational conditions described in the INSTRUCTION MANUAL.

Faults discovered during the warranty period shall be removed by the Warranty Service Centre.

The deadline for the completion of repairs is specified in the WARRANTY CARD.

The warranty does not cover parts and machine components subject to wear under normal operating conditions, regardless of the warranty period.

Warranty services apply only to cases such as: mechanical damage not attributable to the User, factory defects of parts, etc.

The group of components includes, for instance, the following parts/sub-assemblies:

- Cutting knives,
- Protective aprons,
- Bearings.

If the damage resulted from:

- Mechanical damage caused by the user or a road accident,
- Improper use, adjustment or maintenance, use of the machine for other than the intended purposes,
- Use of the damaged machine,
- Repairs carried out by unauthorized persons, improper performance of repairs,
- Unauthorised modifications of the machine design,

the provision of warranty services to the User may be rendered null and void.

The User shall immediately report any observed paint defects or corrosion, and order the removal of defects regardless of whether the damage is covered by the warranty or not. For detailed warranty conditions, see the WARRANTY CARD supplied with the newly purchased machine.



ATTENTION!

Request the Vendor to complete the WARRANTY CARD carefully. For instance, no date of sale or stamps of the point of sale, expose the user to non-recognition of any complaints.



ATTENTION!

The tension of V-belts needs to be checked after several hours of the machine operation. If there is too much play, they need to be tightened.

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1. Introduction

Before commencing first activities related to the use of the mower it is essential to read and understand this instruction manual and follow all recommendations contained therein.



ATTENTION!

Read the instruction manual before use.

This instruction manual contains a description of the hazards that can occur in case of non-compliance with safety rules during operation and maintenance of the mower. Precautionary measures to be taken to minimize or avoid risks are listed in the instruction manual.

This manual also contains principles of correct use of the mower and explains what maintenance operations are to be performed at the same time.

If the information contained in the instruction manual is unclear, please ask the manufacturer for explanation directly.



ATTENTION!

The symbol warns about the threat.

This warning symbol indicates important information regarding the threat that was given in the instructions. Please read the given information, follow the instructions and take special care.

2. Identification of the machine

Each rotary mower is equipped with a rating plate, which contains the most important identification data. This rating plate is located on the machine in a position easy to find and read.

Figure 1 Rating plate

	Limited Liability Company
	Limited Partnership
	Rotary mower 1.85 M
	Symbol
	Weight
	Date of manufacture
	Identification No.
	Factory No.
	Quality controller

The rating plate contains:

- Full name of the manufacturer,
- Mower symbol,
- Weight,
- Date of manufacture.
- Mower factory number,
- CE marking,
- Quality control sign,

3. Rules of safe operation

3.1. User safety

The rotary mower can be operated only by adults who are familiar with its operation and the contents of this manual and have appropriate qualifications. Mowers should be operated with all the necessary precautions, in particular:

- Observe, in addition to this instruction manual, also general rules of safety and health at work.
- Observe warning symbols placed on the machine.
- It is prohibited to operate the machine by people who are under the influence of alcohol or other drugs.
- Never allow the vehicle towing the mower to be operated by a person other than its operator, and in any case do not allow other people to remain in the vehicle and by the machine while in operation.
- The mower can be operated by a person with permissions for driving the vehicle to which it is installed, in accordance with the manufacturer's instructions.
- The workstation of the operator during operation of the mower is the cabin of the vehicle, which the machine was attached to.

- It should be noted that there are many areas in the mower that pose the risk of injury (sharp edges, protruding structural elements, etc.). Special caution during the operation must be used when moving in the vicinity of these critical locations and the use of the personal protective equipment, such as listed below, must be strictly followed:
 - Protective clothing,
 - Protective gloves,
 - Safety shoes.
- It is forbidden to carry persons or objects on the machine.
- It is forbidden to use the machine by third parties not familiarised with instructions manual.
- Employee operating the mower should be provided with a first-aid kit, containing measures for first aid, along with instructions for their use.
- When moving the vehicle with a mower mounted but not working, ensure a safe transport height of ~ 0.4m.
- Prior to driving the mower, it must be set in the transport position and raised using the rear three-point linkage. You must leave the machine when it is stationary.
- Take special care during travel on public roads, and adapt to the existing traffic regulations.
- When travelling on public roads, electrical contour lights of the vehicle must absolutely be used. Their efficiency and visibility must be checked while making sure that they are clean. The User must make sure that the machine is visible during transportation: the use of reflective lighting and warning signs - included in the optional equipment. The transport speed must be adopted to the conditions of the road surface, it should not exceed 15km/h.
- Do not leave the vehicle with the mower on slopes or other inclines without securing the vehicle against accidental rolling away. The mower must be lowered to the ground. Put wedges under wheels of the vehicle.
- The mower should be adjusted to work during assembly to the vehicle. During you work correction of settings, which is possible from the cabin, is allowed without leaving the cabin by the vehicle operator.
- Activities related to preparation, assembly, disassembly or adjustment can be performed after switching off the drive, stopping the engine, immobilizing the vehicle and waiting until all moving parts in the machine stop.
- After the first hour of operation, check all disjoint connections, for instance, screw connections.
- Store the mower on a flat, levelled, paved surface out of the reach of unauthorized persons and animals. Use a supporting foot to ensure stable placement of the mower.
- During the assembly and disassembly of the mower be careful, pay special attention to the structural elements responsible for mounting to the vehicle.

- Before use, check the technical condition of the mower and the cooperating vehicle. The assembly, the vehicle and the mower must be in good technical condition. Worn or damaged parts must be replaced immediately.
- The mower must be equipped with all safety guards (anticipated by the manufacturer) before accessing moving parts. Guards must be complete and fully functional.
- Operating the mower without the guards and the apron is prohibited. It is not allowed to work with the machine, if the covers are damaged or the apron is raised.
- Elevating the mower with the drive switched on and rotating drums is prohibited.
- It is not permissible to operate the lever of the hydraulic cylinder from outside the tractor.
- Prior to working with the mower, read the instruction manual and safety precautions at work and recommendations regarding its use and adjustment.
- Weight of the mower suspended on the vehicle may affect the controllability. In this situation, particular caution should be exercised.
- The instruction manual should be placed in the vicinity of the machine. By lending the machine, pass it technically operational with the instruction manual.
- It is forbidden to attach additional transport means to the mower.
- During the first start-up, check the operation of the machine, and make the initial adjustment without load.
- Securing the linkage assembly (three-point linkage) pins of the mower should be made only by means of a conventional collateral in the form of pins. Work with other safeguards is prohibited.
- Due to the natural wear and tear the state and completeness of cutting machine tools should be controlled, using the recommendations described in chapter 7. Operations and maintenance.
- Upon receipt and transport of the mower check whether the machine has not been damaged by checking its technical condition.
- Presence of people under the raised mower is forbidden, they could be crushed by structural elements.
- When adjusting do not put your fingers and limbs between components of the machine.
- Leaving the tractor cab, with the machine drive running and before the rotating components stop, is prohibited.
- During operation and adjustment, the operator operating the mower must make sure that no persons are allowed to approach the machine and **stay away from the working machine at a distance of not less than 50m.**
- Before starting the mower drive, the cutting unit must be lowered to the working position.

- Mowing can be started after reaching the nominal PTO speed of 540rpm. Overloading the shaft and the mower and sudden activation of the clutch is prohibited.
- When turning or reversing, manoeuvring the machine, adequate visibility should be secured or help of suitably trained person should be used.
- **It is forbidden to perform the mowing operation while driving backwards.** When reversing, the machine must be raised.
- When connecting hydraulic hoses, make sure that the hydraulic system is not under pressure.
- The personnel is forbidden to stay between the vehicle and the mower when the engine is running.
- Working on slopes exceeding 10% is unacceptable.
- Take special care when working on slopes.
- When making turns and returns turn off the PTO.
- It is forbidden to operate the machine on the edge of public squares (parks, schools, etc.) or on a rocky terrain, in order to avoid the danger coming from recoil of stones and other items.
- During operation, do not allow the PTO speed to exceed 540 rev/min. and the driving speed must be adapted to the required work.
- Using a damaged or incomplete jointed telescopic shaft is prohibited. In particular, it is prohibited to work without guards of moving parts.
- The telescopic shaft has markings indicating which end should be connected to the tractor. Make sure that the direction of the shaft rotation is correct before starting.
- Never leave the vehicle with the engine running. Before leaving the driver's seat (the cab) lower the machine to the ground, switch off the engine of the vehicle, remove the ignition key, engage the parking brake.
- Do not use unbuttoned, hanging pieces of clothing during the operation, assembly, disassembly, adjustment. Keep them away from components in which they can get caught.
- After work it is recommended to clean and wash the mower in the wash fitted with a sewage treatment plant or settler to neutralize the resulting waste water.
- Storage, warehousing of the machine should be carried out in places protected from outsiders and animals thus eliminating the risk of accidental injury, on a flat, paved surface, under a roof.
- In case of failure, immediately turn off the drive transmitted from the vehicle.
- Hearing protection to minimize exposure to noise should be used when operating the mower. Additionally, closing the door and windows of the vehicle cabin is recommended.



Failure to follow these rules may pose a risk to the operator and bystanders and can damage the mower. The user is responsible for damages resulting from non-compliance with the above rules.

3.2. Residual risk assessment

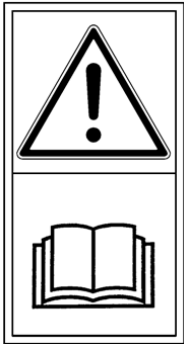
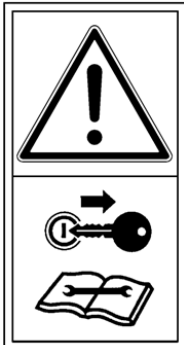

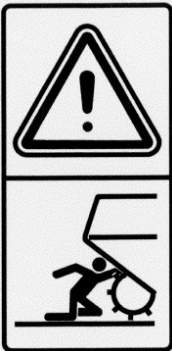



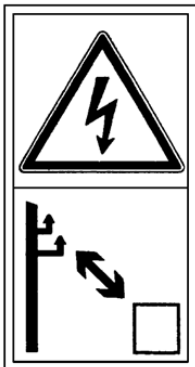

Kołaszewski has made every effort to make sure that the design of the mower and its anticipated use do not pose a threat to people and the environment.

Due to the nature of the mower operation and the absence of, for instance: a possibility for the cutting unit to be completely covered, certain risk can be present.

No.	Hazard	Hazard source (cause)	Protective provisions relating to hazards
1	Overloading the movement system (physical load)	Working in a standing position, inclined-forced, walking, moving	Reading the instruction manual, workplace training taking into account the standards for lifting by performing manual handling, proper techniques for lifting and lifting weights, using the help of another person, devices facilitating movement e.g. jack, winch
2	Falling at the same level (tripping, slipping, etc.)	Uneven ground, mess - objects lying and standing, wires lying on the communication roads, slippery surfaces	Suitable footwear, levelled surface, maintaining caution, maintaining order, reading the instruction manual
3	Hitting protruding parts of the machine	The machine and its surroundings	Proper setting of the machine, safe space for movement, organization of work, maintaining caution, reading the instruction manual
4	Being hit by moving objects	Mowed plants, incidental parts of the turf, stones thrown out by the machine	Maintaining caution, marking the danger zone, ban on movement around the working machine, ban on being at a distance of less than 50m from the working machine, use of personal protective equipment - helmet, safety glasses, reading the instruction manual
5	Dangerous sharp edges	Protruding structure elements of the machine, use of hand tools	Personal protective equipment - gloves, buttoned work clothes, maintaining caution
6	Belt transmissions	Moving pulleys and belts of the transmission, spinning jointed	Ban of moving, approaching and making adjustments on the running machine,

		telescopic shaft, no guards of moving parts	exercising caution, using shields of moving parts, reading the instruction manual
7	Weight of the suspended standing machine	Improper installation, aggregation, incorrect setting of the machine, bad service, leaving suspended machine on the tractor	Maintaining particular care, use of personal protective equipment - safety footwear, protective gloves, safe setting of the machine, using help of a second person, using jacks, davits, reading the instruction manual
8	Micro climate - changing weather conditions	Work carried out in different weather conditions	Appropriate clothing, drinks, sunscreen, relax, reading the instruction manual
9	Noise	Too high revolution of the machine, damaged, loose vibrating parts	Working with the efficient machine, current machine maintenance, relevant revolutions of the machine, reading the instruction manual

3.3. Safety signs on the machine and their meaning

 <p>1.0 - Read the instruction manual before you start using the machine</p>	 <p>1.1 - Switch off the engine and remove the ignition key before beginning maintenance or repair</p>	 <p>1.2 - Keep a safe distance from the machine. Do not allow anyone to be at the distance of less than 50m from the machine</p>
 <p>1.3 – Do not attempt any repairs on the machine in operation</p>	 <p>1.4 - Do not travel on platforms and ladders</p>	 <p>1.5 - Do not stand near the rods of the power lift while the lift is controlled</p>
 <p>1.6 - Do not open and remove protective guards, if the engine is working.</p>	 <p>1.7 - Keep a safe distance from the power lines</p>	 <p>1.8 - Avoid exposure to liquid flowing out under pressure. Read the instruction manual as regards the service activities</p>



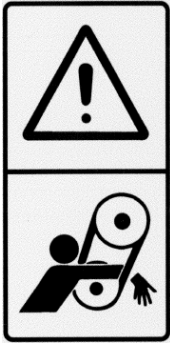









 <p>1.9 – Attention! Tools running at idle speed</p>	 <p>2.0 - Attention! Cutting knives. Stay away from the running mower</p>	 <p>2.1 Attention! V-belts. Stay away</p>
 <p>2.2 – Warning about the pressure present in the hydraulic system</p>	 <p>2.3 – Wear the overall</p>	 <p>2.4 – Wear protective gloves</p>
 <p>2.5 – Wear ear protection muffs</p>	 <p>2.6 – Wear protective goggles</p>	
 <p>2.7 Do not lift the running machine</p>	 <p>2.8 Connecting the mower with the tractor using the shaft</p>	
 <p>2.9 Do not exceed the maximum engine speed</p>	 <p>2.10 Proper placement in a given position</p>	

Table 1 Safety signs on the machine and their meaning

	Be careful! Tools running at idle speed
	DO NOT move the running machine
	Connecting the mower with the tractor using the jointed telescopic shaft
	Tractor - outer tube
	Mower - inner tube
	Operation
	transport

4. Intended Use of the Machine

The rotary mower is designed to work in agriculture for mowing low-stem greens (alfalfa, grass, etc.) in crop fields and meadows with levelled surface.

It can be used on meadows and fields without stones, on flat or slightly uneven fields with a slope up to 10°.

The mower is a machine to be attached to the three-point linkage of I and II-category tractor. Two spinning disks with knives are the working components. This unit is driven by the PIC through the jointed telescopic shaft, belt transmission and bevel gears. Bevel gears are mounted on driving shafts that transmit power to the disks.

Meeting the requirements for use of the machine relating to the operation and repairs according to the manufacturer's instructions and strict compliance with them is a prerequisite for the proper use of the machine. The machine should be operated, serviced and repaired by people familiar with its specific characteristics and who know the rules of conduct in terms of health and safety at work rules.

The manufacturer offers a wide range of agricultural machinery. The manufacturer offers also professional advice within the scope of proper selection of the equipment for the user's needs.



All the ambiguities concerning the intended use of the equipment should be clarified by contacting the manufacturer. Proper selection of the machine and the knowledge about its intended use increase safety.

Using the machine for any other purposes will be considered as unintended use.

5. Equipment and accessories

5.1. Basic fittings

The standard components of a mower include.

- Instructions manual with a catalogue of parts and the warranty card - 1pc.
- Special spanner - 1pc.
- Set of knives
- - quantity, see table 2.
- A set of spare blades

The standard components of the mower do not include warning signs with lights, triangular plate for low-speed vehicles and jointed telescopic shaft. They may be purchased separately from the manufacturer or at the machine sale centres.

5.2. Technical Characteristics

Figure below presents the general design of the mower.

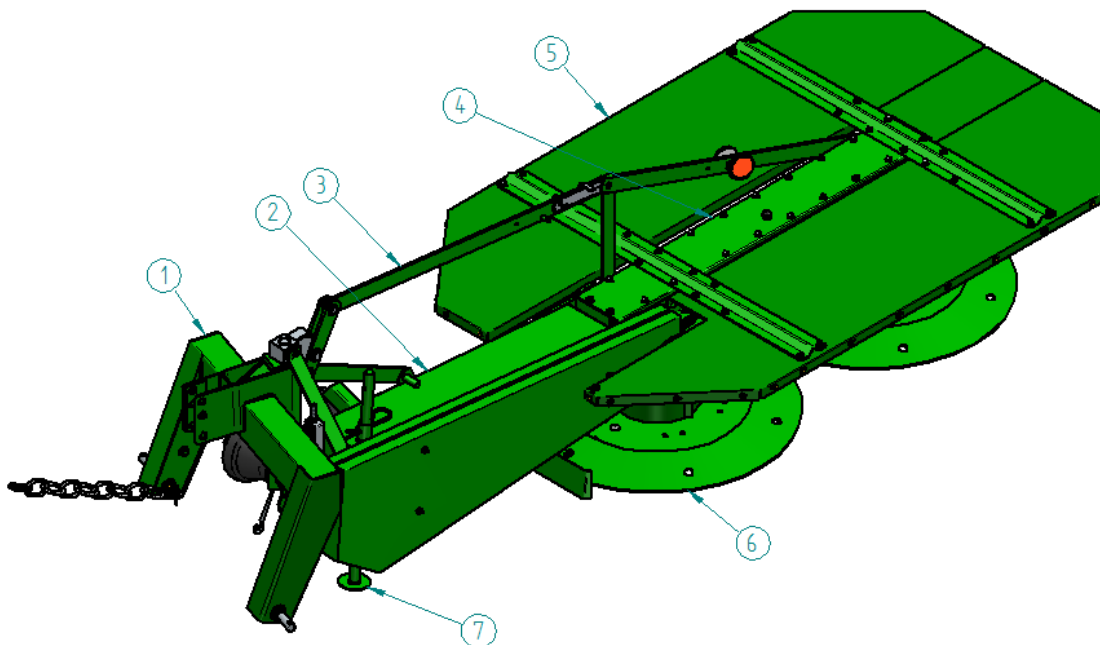


Figure 2 General design of the machine: 1 – suspension frame; 2 – main frame; 3 – rod assembly/cylinder (depending on the version); 4 – cutting unit; 5 – guard assembly; 6 – cutting system operating section; 7 – supporting foot.

The suspension frame is used to connect the mower to the tractor. A complete operating unit with guards is attached to the suspension frame through the middle frame.

The operating assembly consists of two operating rotary drums with knives mounted in the lower part of the drums. The driveline diagram is shown in Fig. 3.

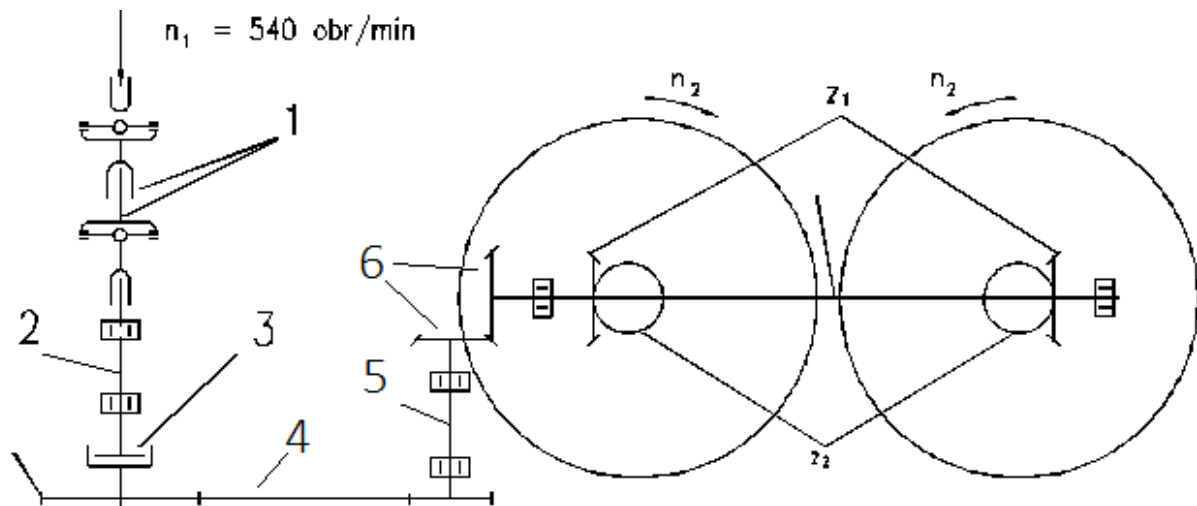


Figure 3 Diagram of the mower drive: 1 – jointed telescopic shaft; 2 – drive head shaft; 3 – uni-directional clutch; 4 – wedge belt transmission; 5 – main frame driving shaft; 6 – bevel transmission; n_1 – tractor PTO speed; n_2 – drum speed (values provided in table 2); z_1 – large gear of the bevel transmission; z_2 – small gear of the bevel transmission.

Operating drums are driven by the tractor PTO. Equipped with knives they rotate in opposite directions to each other, cutting plants and forming green swath fodders. The uni-directional clutch allows free rotation of the operating drums and discs after the engine is turned off and protects the drive components from damage.

Technical and operational mowers are shown in Table 2.

		Measurement unit	Mower type			
			1.85m	1.65m	1.35m	1.35mini
No.	Symbol		Z-042/2	Z-042/1	Z-042	Z-080
1	Mower type	-	Rotary, suspended			
2	Cutting width	[m]	1.85	1.65	1.35	1.35
3	Power consumption:	[kW]	30	22	18	
4	Number of cutting drums	[pc.]	2			
5	Number of blades	[pc.]	6		4	
6	Cutting height, standard	[mm]	40	40	36	36
7	Cutting height Low	[mm]	32	36	32	32
8	Rotational speed of the working drums	[rpm]	1790	2020	2300	
9	Tractor PTO rotational speed	[rpm]	540			
10	Recommended PTO	[cat.]	IV		II	
		[Nm]	460		270	
11	Output capacity	[ha/h]	~ 2.0	~ 1.4	~ 1	~ 0.8
12	Working speed	[km/h]	8			
13	Transport speed	[km/h]	15			
14	Transport clearance	[m]	0.4			
Overall dimensions in the transport position (with a guard assembly, set vertically)						
			1.85m/hydr	1.65m/hydr.		
15	Length	[mm]	3450/2450	3180/2200	2760	2280
16	Width	[mm]	1350	1220	1220	1010
17	Height	[mm]	1830/2800	1830/2250	1730	1350
Overall dimensions in the operating position (with a guard assembly)						
18	Length	mm	1350	1220	1200	1010
19	Width	mm	3600	3200	2800	2300
20	Height	mm	1430	1430	1430	1050
21	Weight	kg	410	349	310	282
22	Nominal pressure in the hydraulic system / for the version with the hydraulic cylinder	MPa	16	16	N.A.	

*the provided overall dimensions may be different in case of aggregation with a particular tractor

Table 2 Technical and operational data of the mowers

6. Use of the machine

The manufacturer guarantees that the machine is fully operational. It has been checked according to quality control procedures and approved for use. However, the User is still responsible for checking the machine after delivery.



Before each use, the technical condition of the mower must be checked, in particular, the status of the cutting unit, the drive system, the hydraulic system, and the guards.

6.1. Installation of the mower

The manufacturer delivers a complete mower with an unmounted cover of the cutting unit. The installation of the cutting unit guard is to be performed by the Purchaser of the mower at one's own discretion.



Working with the mower without the assembled cover of the cutting unit or with a damaged cover or the raised apron poses a threat to the operators and the environment - not permitted, prohibited.

There are two options to install the guard:

- I) A fully twisted guard (mounting is shown in section "13.2.7 Guard assembly" must be placed on the cutting unit cover after prior removal of the screws (Fig. 4 item 1) and the rod assembly (Fig. 4 item 2).
- II) Attach the guard to the machine in order after the removal of screws (Fig. 4 item 1):
 - a. Bent reinforcement,
 - b. Left, right, rear guard, reinforcing angle bar,
 - c. Protective apron.

The above parts are described in section "13.2.7 Guard assembly" using the indicated screw elements (the assembly method is presented in section "13.2.7 Guard assembly.")

In addition, the front guard must be screwed to main frame (the assembly method is shown in section "13.2.4 Main frame".)

All removed screws must be tightened and the tightening of the other screws must be checked.

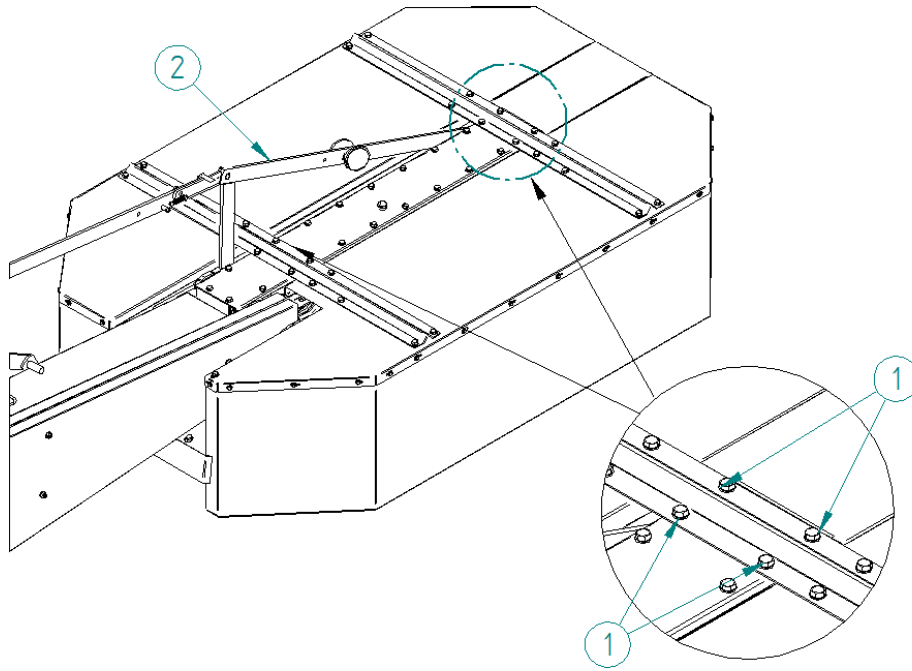


Figure 4 Metal guard assembly

6.2. Connecting the mower to the tractor



Make sure that the mounting of elements of the vehicle and the machine are match properly so as to guarantee safe installation and operation. In case of any doubts, contact the manufacturer of the vehicle or the machine.

The mower should be connected to the tractor via three-point linkage (TPL). The mower should be set in the transport position.

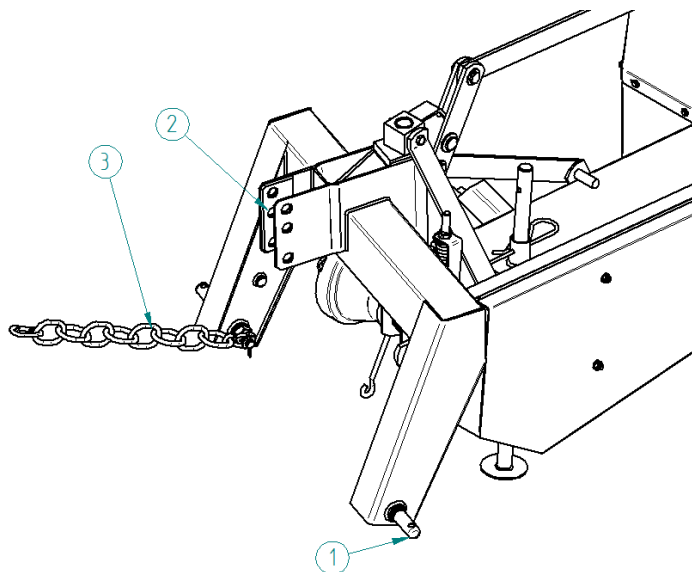


Figure 5 Aggregation – mower assembly

In order to connect the mower to the tractor:

1. Place lower rods of the tractor (first the left, and then the right one) on the pins (Fig. 5 item 1) of the suspension frame and secure with cotters.
2. Place the end of the top link between the yoke plate using the holes (Fig. 5 item 2), and then connect with the pin and secure with a cotter.
3. Raise the mower in order to offload the supporting foot.
4. Raise the support and secure with a cotter.
5. Connect the chain with the transport hitch or its bracket.

Adjust the length of the jointed telescopic shaft with the cooperating tractor according to the instructions of the shaft.

6.3. *Transport position*

The mower must be set in the transport position for the transport drive.

The jointed telescopic shaft must be disconnected from the tractor and the mower.

For versions with rods, the following steps must be followed:

1. Place the tractor with the mower on a level surface.
2. Remove the safety device from the top pivot of the suspension frame.
3. The interlock must be set in the transport position (Fig. 6A).
4. Raise the mower with a hydraulic lift of the tractor so that the sliding plates do not rest on the ground.
5. Raise the supporting foot to the upper position and secure it with a cotter.
6. Move the mower into the transport position manually (Fig. 7) so that the interlock pin is inserted into the yoke opening (the cord must be loose) (Fig. 8A).
For the 1.35m, the transport beam must be placed on the upper pin of the support frame and secure it with a cotter.

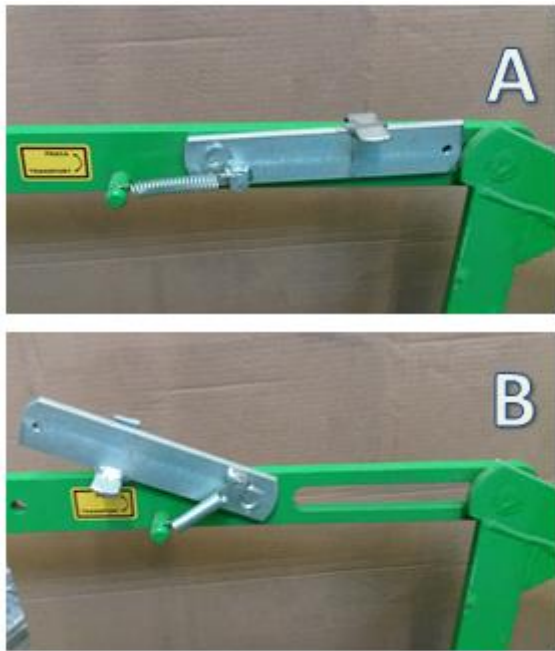


Figure 6 Interlock: operational/transport position

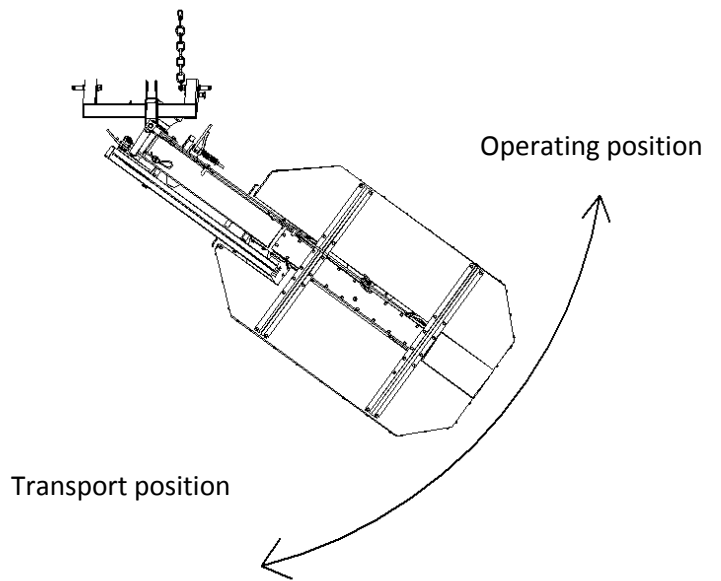


Figure 7 Transport/operational

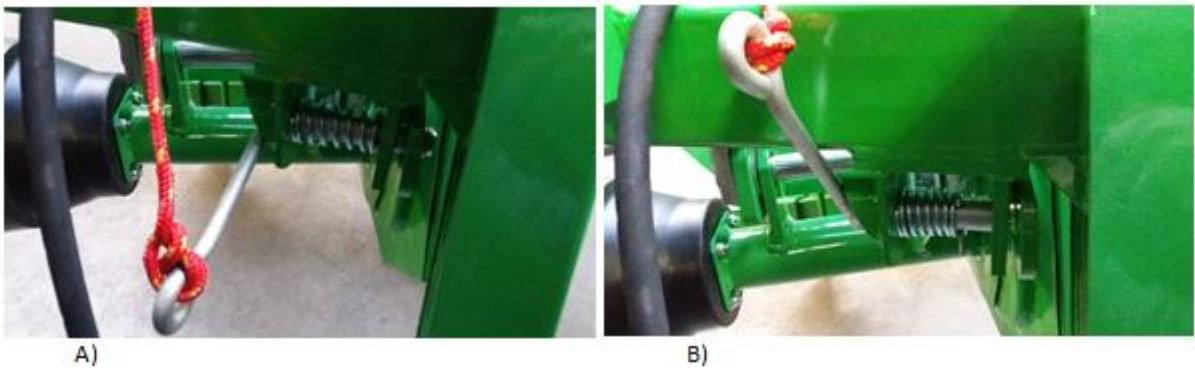


Figure 8 Interlock pin of the suspension frame: A) in the stirrup opening B) removed from the stirrup opening
For a version with a hydraulic cylinder of the 1.85m and 1.65m mower

1. Place the tractor with the mower on a straight, level surface.
2. Remove the safety device from the top pivot of the suspension frame,
3. Raise the mower with a hydraulic lift of the tractor so that the sliding plates do not rest on the ground,

4. Raise the supporting foot to the upper position and secure it with a cotter,
5. Move the mower into the transport position manually so that the interlock pin is inserted into the yoke opening (the cord must be loose) (Fig. 8A),
6. The cylinder must be brought to the transport position until the cylinder closing is activated (Fig. 10A). The transport position is presented in Fig. 9.



Figure 9 Proper transport position for 1.85m and 1.65m mowers in the hydraulic cylinder version

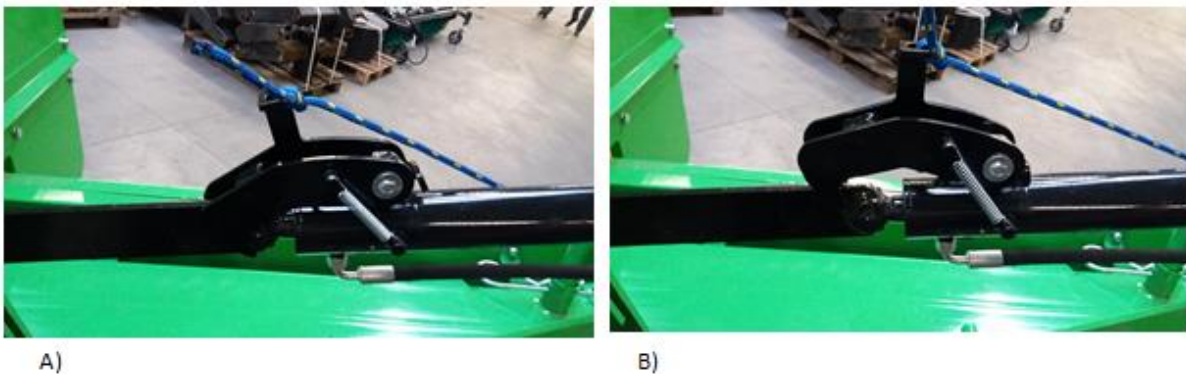


Figure 10 Cylinder closure: A) closed, B) open

Do not transport the 1.85m and 1.65m mower in the hydraulic cylinder version as presented below:

A)



Figure 11 Incorrect transport position for 1.85m and 1.65m mowers in the hydraulic cylinder version

B)



Figure 12 Incorrect transport position for 1.85m and 1.65m mowers in the hydraulic cylinder version (the transport width above the permissible value.)

6.4. Proper installation of the hydraulic cylinder in the rod assembly

Proper installation of the hydraulic cylinder in the rod assembly is presented below.



A)

B)

Figure 13 Proper installation of the hydraulic cylinder in the rod assembly: A) 1.85m mower with a hydraulic cylinder; B) 1.65m mower with a hydraulic cylinder.

6.5. Operating position

To move the mower from the transport position, the following steps must be performed:

1. Place the tractor with the mower on a level surface.
2. In a mower with a hydraulic cylinder, pull the cord releasing the cylinder closure (Fig. 10B), and then set the mower in the horizontal position. Maintain extreme caution when lowering the mower in the horizontal position.
3. In the version with rods, set the interlock in the operational position (Fig. 6B).
4. Lower the mower slightly above the ground.
5. Standing at the back of the machine, pull the cord thus removing the pin interlock from the yoke (Fig. 8B), then turn the mower into the operating position (Fig. 7).

In the 1.35m version, remove the transport beam from the upper pivot of the suspension frame, then turn the mower into the operating position. Place the free end of the transport beam transport in the suspension frame bracket (a drawing of the transport beam is shown in section 13.2.4.1 Central frame — 1.35 mower on page. 51).

6. Place the safety device on the upper pin of the suspension frame and secure it with a cotter.

6.6. Mower adjustment

After setting the mower in operating position, the sliding plates should be parallel to the ground.

In the recommended position, the pin of the rod assembly (Fig. 14 item 1) should be at the centre of the groove in the rod assembly (Fig. 14 item 2).

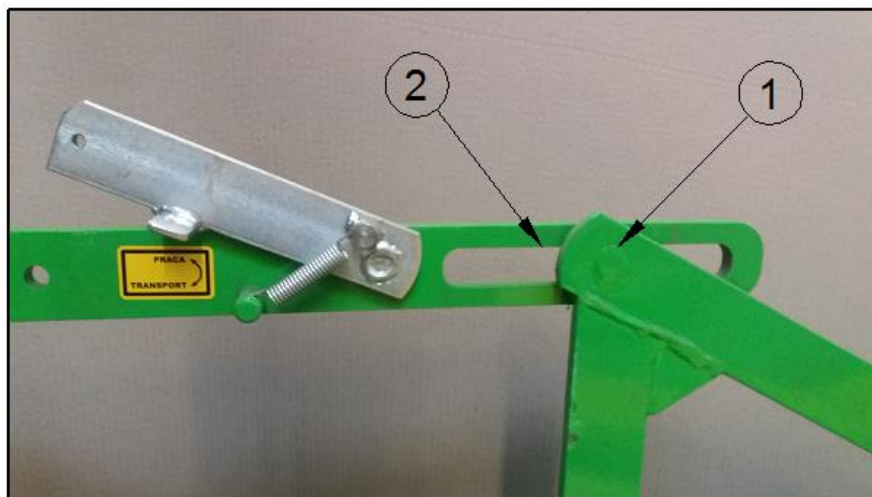


Figure 14 Correct setting of the mower

To change the cutting height:

- 1) Set the mower for transport and lift to the upper position, immobilize the tractor, switch off the engine.
- 2) Secure the mower against falling, additionally support one of the plates with a bracket,

- 3) Remove the screws (Fig. 15 item 1) and remove the sliding plate (Fig. 15 item 5),
- 4) Remove the screws (Fig. 15 item 3) holding the sliding plate (Fig. 15 item 2) and remove it,
- 5) Adjust the cutting height (Fig. 15 item 4 – spacer rings),
- 6) Mount in the reverse order.

Follow the same steps with the other part of the operating section of the cutting unit.

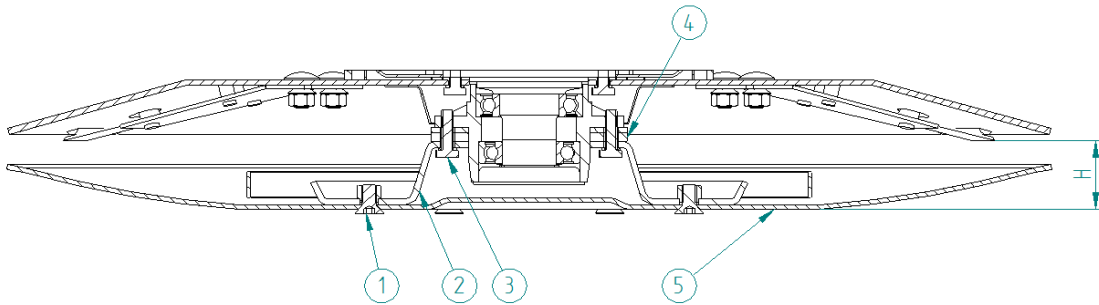


Figure 15 Cutting height adjustment: H) cutting height

6.7. Mower operation

The mower is equipped with an overload safety device, which allows the mower to be tilted when it encounters an obstacle or too high mowing resistance. Slight reverse movement of the tractor engages the safety device again. Improper tension of the spring can cause improper operation of the machine and even its damage.

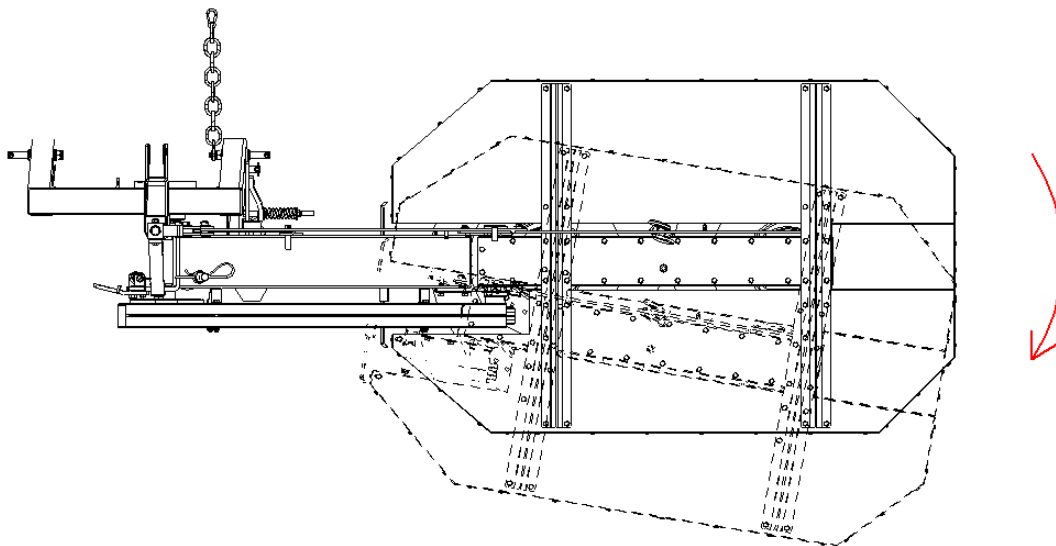


Figure 16 Mower tilting when activating the safety device

The initial length of the tense safety device spring with a safety device spring saddles is $L = 160\text{mm}$ (shown in Fig. 17). The structure of the safety device is presented in chapter "13.2.4.4 Safety device." The length of a tense spring should be adjusted, if necessary.

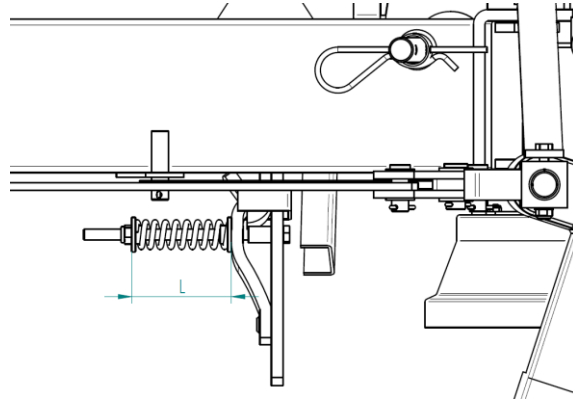


Figure 17 Safety device - initial tension of the spring

7. Operations and maintenance

All operations related to the handling of the machine can be performed by the operator of the vehicle to which the machine is installed, provided that the operator is authorized to operate this vehicle.



After disconnecting from the vehicle, the machine should be stored under a roof on a flat and hard surface and on a supporting foot.

Prior to connecting the machine to the tractor, the machine operator must always check the condition of the machine and prepare it for the test run. To do this, you need to:

- Read this instruction manual and follow the recommendations contained therein,
- Get to know the structure and understand the principles of operation of the machine,
- Inspect all machine components for mechanical damage,
- Lubricate the machine as recommended,
- Check the technical condition of the hitch system pins and safety plugs.
- Check the oil level in the gearbox,
- Check the tension of V-belts,
- Check the condition of bolted connections,
- Check the condition of the cutting knives.



Only the use of original manufacturer parts is a guarantee of safe and reliable operation. The use of non-original parts or repair of damaged parts voids the warranty.

If all the above steps have been performed and the technical condition of the machine is satisfactory, it can be connected to the tractor.

Aggregating the machine with tractor is described in section 6.2 Aggregating - mower assembly.

7.1. Adjustment of the tension of V-belts

The mower is equipped with a spring belt tensioner. Proper belt tension can be checked through the inspection opening (Fig. 19). Properly stretched belts should be slightly bent under the pressure of the operator's hands.

In case of damage or extension of even one belt, the entire set of belts must be replaced (with the same dimensional designation and company marking).

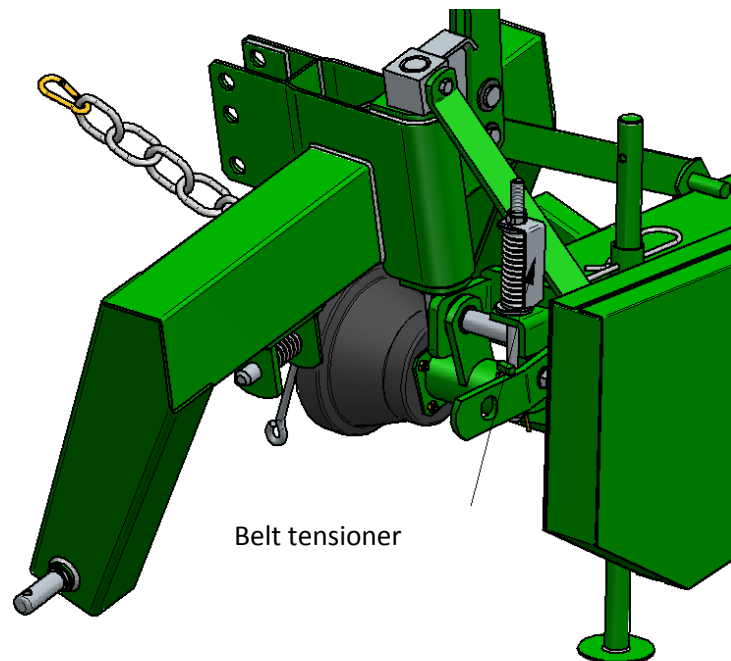


Figure 18 Adjustment of the tension of V-belts

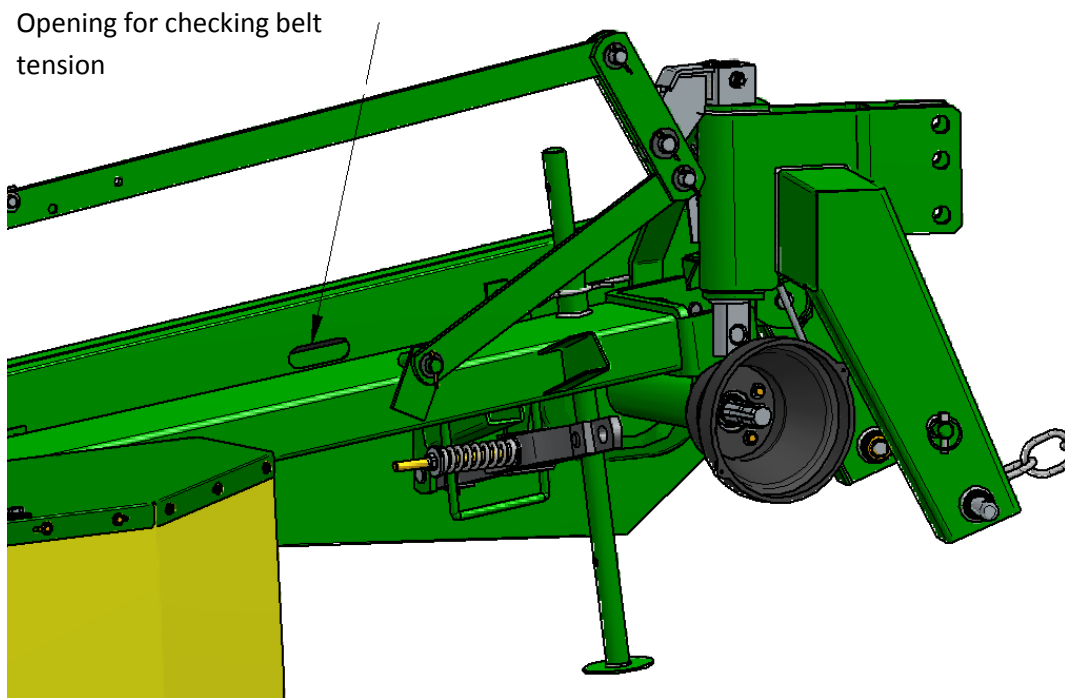


Figure 19 Checking the proper tension of V-belts

7.2. Replacement of the knives

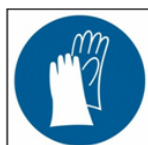
Cutting knives should be replaced while following exceptional safety rules:

1. Only genuine and effective part of the cutting unit can be used.
2. Each replacement involves a set. It is important to keep in mind the even distribution of the rotating masses and the uniform wear of knives.
3. Check the condition of interacting elements: the holder, the knife. Replace if you notice any damage.
4. When tightening screw connections, follow the information in Table 3 and select the appropriate tightening torques of nuts and bolts.



Replace worn or damaged parts for new ones.

Working with the damaged components of the operating plate: the holder of the knife, is prohibited.



Knife inspection should be carried out each time before starting work and after each collision with an obstacle, e.g. stone, wood, metal. Use protective gloves



Figure 20 Knife replacement

Knife replacement or rotation should be performed using a special spanner as shown in Fig. 20. The spanner is to be placed between the operating plate and the holder so that the round protrusion of the spanner is placed over the knife holder.

Spread the holder until there is sufficient slack to allow the removal of the knife.

After inspecting the knives and holders, proceed to mount the knives by installing them in the same place or on an adjacent plate (in the opposite direction of rotation), provided that they are not damaged or replacing them with new ones by releasing the pressure of the spanner on the holder. When replacing holders and knives, pay attention to their proper setting on individual plates - shown in the figure below.

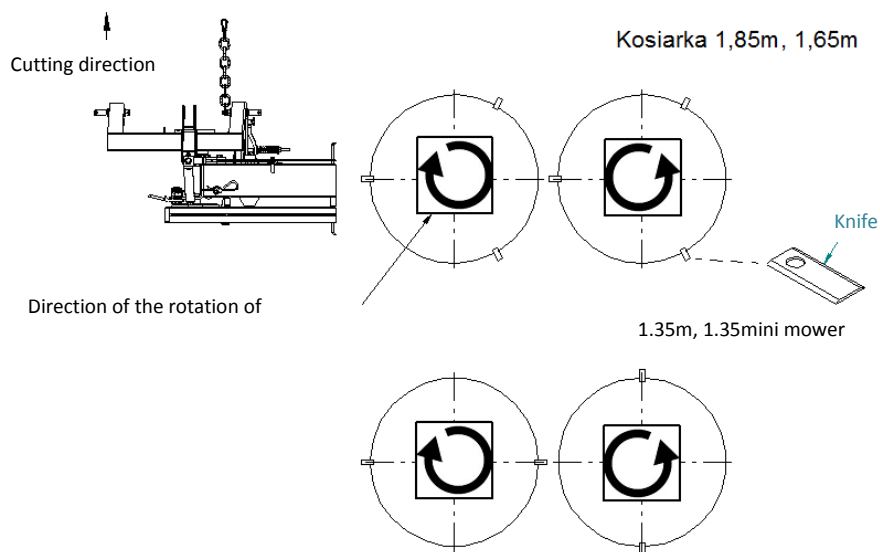


Figure 21 Diagram of the proper installation of holders, knives on operating plates

7.3. Handling after operation

Each time the operation of the machine is completed, **wash the lower part of the operating assembly under pressure (holders, knives, resistance plate regions)** and place it on a flat, hard surface. Inspect the part and assembly connections.

Damaged and worn parts must be replaced. Check all screw connections and tighten the loose ones in accordance with Table 3.

Attention:

Kołoszewski, the machine manufacturer, provides availability of all parts.

Average	6.8	8.8	10.9	12.9
Metric thread	Tightening torque (Nm)			
M5	4.5	5.9	8.7	10
M6	7.6	10	15	18
M8	18	25	36	43
M10	37	49	72	84
M12	64	85	125	145
M14	100	135	200	235
M16	160	210	310	365
M18	220	300	430	500
M20	310	425	610	710
M22	425	580	820	960
M24	535	730	1050	1220

Table 3 Tightening torque values of nuts and bolts.

It is also necessary to check the tension of V-belts, and replace the damaged belts with new ones (always replace a set of belts.) The entire set is to be adjusted in accordance with the instruction manual - 7.1 Adjusting the belt tension.

Lubricate the mower according to the instruction manual - 7.4 Lubrication.

All safety signs on the machine must be kept clean.

7.4. Lubrication



All maintenance and service works are to be performed when the engine of the vehicle is not running, the pressure and rotation are stopped, with the vehicle and the machine secured.



Avoid contact with oil!

Use personal protective equipment in the form of: clothing, footwear, gloves and glasses.



The jointed telescopic shaft should be operated and lubricated following the operating instructions provided by the manufacturer of the shaft strictly.

To ensure correct operation, the following is to be performed in relation to the gearbox:

- I) Every 10 hours, check the oil level using a clean rod slid in the vent hole. The oil level should be: min. 20 to max. 30mm.
- II) Replace the oil after each operating season.

The required amount of oil in the gearbox:

- A. 1.85m ~ 5L
- B. 1.65m ~ 4L
- C. 1.35m ~ 3.5L
- D. 1.35min ~ 3.5L

The following oil is recommended by the manufacturer: SP460 (based on 80W90) + and admixture of the ŁT43 lubricant.

In the event of lowering the level of oil, remove the cause of the leak, and then refill it to the required level.

7.5. Post-season maintenance

It includes all the steps listed in section: 7.3 Handling after operation. In addition, the machine should be stored under a roof on a flat and hard surface and on a supporting foot. Pay attention to the tightness of the paint coating. In case of the formation of gaps, clean the place and fill gaps by applying a fresh coating of protective paint.

V-belt tension in the off-season should be reduced (V-belts should be loose). They should be stretched again prior to use.



In the case of leakage from the hydraulic system, the defective parts and assemblies of the system must be replaced to prevent environmental contamination.

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

7.6. Possible faults and how to remove them

Signs of a fault	The cause of occurrence	Remedy
Increased vibration of the mower	Unevenly worn or damaged components of the cutting unit	Replace worn parts with new in sets
Bad cutting and clogging of the cutting unit	Dull or damaged blades	Dull or damaged blades must be replaced with new ones in sets Mount the unilaterally dull parts on the disc with the opposite direction of rotation
Belt slip	Belts inadequately stretched Wet belts Worn belts Belts of uneven length	Check and adjust belt tension Do not cut during rain Replace belts to new ones in sets Use belts from the same manufacturer and with the same dimensional designation
During normal operation, the cutting unit is leans backwards due to the safety device operation	Poorly stretched or damaged safety device spring	Check and adjust the spring tension; replace in case of damage
	Local terrain irregularities, e.g .: crusted with molehills	Reduce speed, tilt the cutting unit in the reverse direction

Table 4 Possible faults and how to remove them

8. Dismantling, scrapping and environmental protection



Protect hands (body) against injury and harmful effects of lubricants, oils.

Use protective gloves and tools in good technical condition.

Machine parts, which can move or rotate during disassembly, should be properly protected.

Worn or damaged parts obtained during the repair (scrapping) should be stored in a separate area with limited access of people and animals. Worn parts must be delivered to the scrap metal collection point. Worn plastic parts must be sent to a storage (disposal) point of chemicals waste.

During replenishment or replacement of oil do not allow the spill. Waste oils should be stored in sealed containers and periodically delivered to points of their purchase (disposal).



Left parts or machine components, spilled oil may pose a risk of injury and cause environmental pollution and violate applicable regulations.

9. Warranty

WARRANTY CARD

Serial number	type
Year of built	KJ

As part of the warranty the manufacturer undertakes the obligation to free of charge repair physical defects revealed during the warranty period, which is valid 12 months from the date of sale.

The manufacturer is exempt from liability under the warranty in case of:

- Mechanical damage to the machine after its transfer to the user;
- Improper operation, maintenance, storage of the machine, in particular, contrary to the instructions;
- Making repairs by unauthorized persons without consent of the manufacturer to carry them out;
- Introducing design changes without consulting with the manufacturer.

Warranty card is valid, if it has seller's signature and date of sale certified with company stamp. It can not contain deletions and amendments by unauthorized persons.

Duplicate of the warranty card may be issued upon written request after presentation by the user of the proof of purchase.

In the case of unjustified service call to warranty repair, the related costs shall be borne by the user. The user reports complaints immediately after the occurrence of the damage directly to the seller or manufacturer.

The manufacturer provides a warranty service within 14 days from the date of filing to the date of repair. The guarantee is extended by the repair time from the date of notification to the time of the service performance if the defect has prevented the use of the machine.

The warranty does not cover normal wear and tear of parts such as bearings, tarpaulins, fasteners, etc.

Date of sale: _____

(Day, month, year)

(signature and stamp of the point of sale)

10. List of warranty repairs

Filled in by the manufacturer

Date of submitting the complaint:

Scope of repairs and replaced parts: _____

Date of complaint processing: _____

Guarantee extended until: _____

(signature and stamp of the service)

Date of submitting the complaint:

Scope of repairs and replaced parts: _____

Date of complaint processing:

Guarantee extended until: _____

(signature and stamp of the service)

Date of submitting the complaint:

Scope of repairs and replaced parts: _____

Date of complaint processing: _____

Guarantee extended until: _____

(signature and stamp of

Date of submitting the complaint:

Scope of repairs and replaced parts: _____

Date of complaint processing:

Guarantee extended until: _____

(signature and stamp of the

the service)

service)

11. Warranty form

COMPLAINT FORM NO

Full name :

Address

.....

Postal code

.....

Town :

Telephone no

.....

Electronic mail address :

Complaint submission mode :

Name of product subject to complaint:

.....

Point of Sale name :

Proof of purchase - VAT invoice no dated20..... .

Defect / damage

description:

.....

.....

Agreed complaint procedure final date :

Outcome and date of the complaint settlement

.....

.....

.....

Date on which the defect occurred / was revealed:20....

.....

Date, full name

12. Declaration of Conformity

EC DECLARATION OF CONFORMITY

Producer
Firma Kołaszewski
Ul. Lęborska 22
77-100 Bytów

We hereby declare that the machine:
Name of machine: **ROTARY MOWER**
Type of machine: **Z-042/2, Z-042/1, Z-042, and Z-080**

to which this declaration relates complies with the requirements of the *Regulation of the Minister of Economy of 20 December 2005 on essential requirements for machines and safety elements (Journal of Laws 259 item 2170)*, and the *European Union Directive 98/37 EC*.

The following standards have been included in the case of the machine due to the requirements of safety and health contained in the Directive:

PN-EN ISO 12100-1:2005, PN-EN ISO 12100-2:2005, EN 294:1994, PN-EN ISO 4251-1, PN-EN 745:2002

This declaration of conformity shall be null and void if the machine is rebuilt without the approval of Firma Kołaszewski [Limited Partnership].

Date and location

Prioprietor

Bytów, 31.01.2007

13. Spare parts catalogue

13.1. Ordering parts

Always provide the following information in each order:

- Order's address,
- accurate delivery address (parking place or mode of delivery of the machine),
- terms of payment,
- mower serial number and the year of production (acc. to the plate on the machine),
- spare part number
- name of the part number
- number of pieces of parts being ordered.



Spare parts should be ordered at points of sale of the machines or from the manufacturer.

Only the use of original manufacturer parts is a guarantee of safe and reliable operation. The use of non-original parts or repair of damaged parts voids the warranty.

The manufacturer reserves the right to change the design of the parts placed on individual assembly drawings of the catalogue of parts. These changes cannot always be introduced to the instruction manual and parts catalogue on a current basis. Individual drawings of parts may differ from the actual state.

Firma KOŁASZEWSKI

ul. Lęborska 22

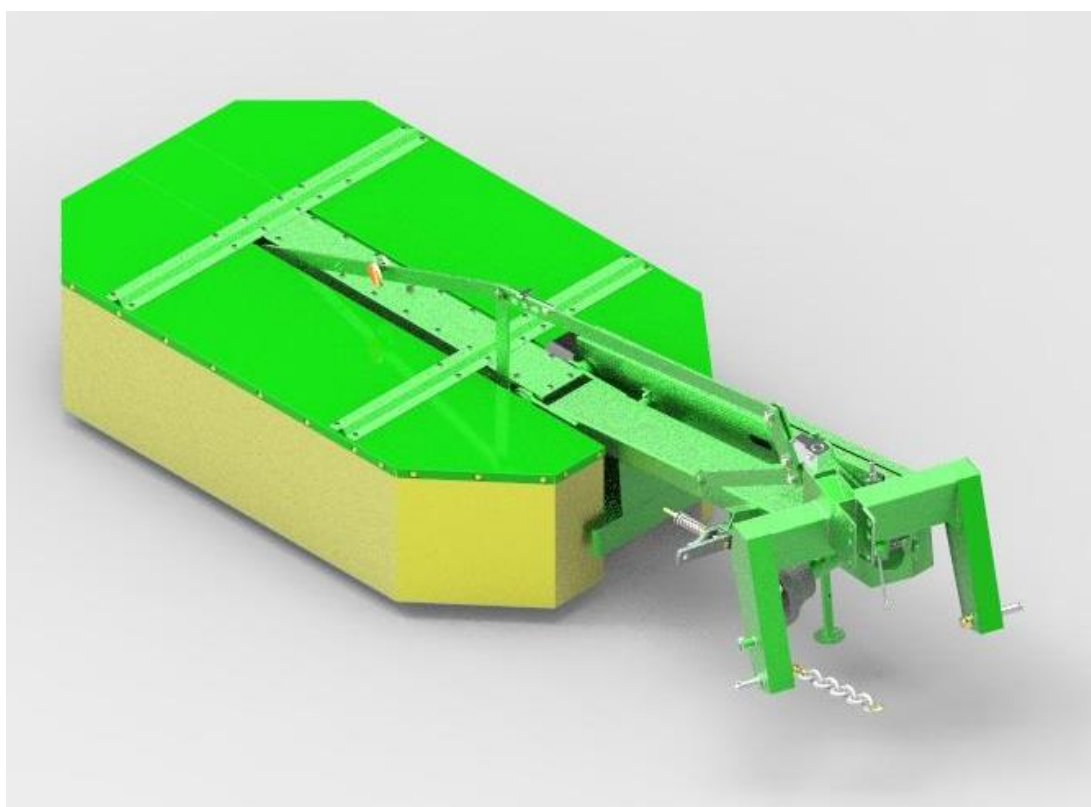
77-100 Bytów

Phone: (059) 822 34 88

www.kolaszewski.com

e-mail.: kolaszewski@kolaszewski.pl

Catalogue of Spare Parts

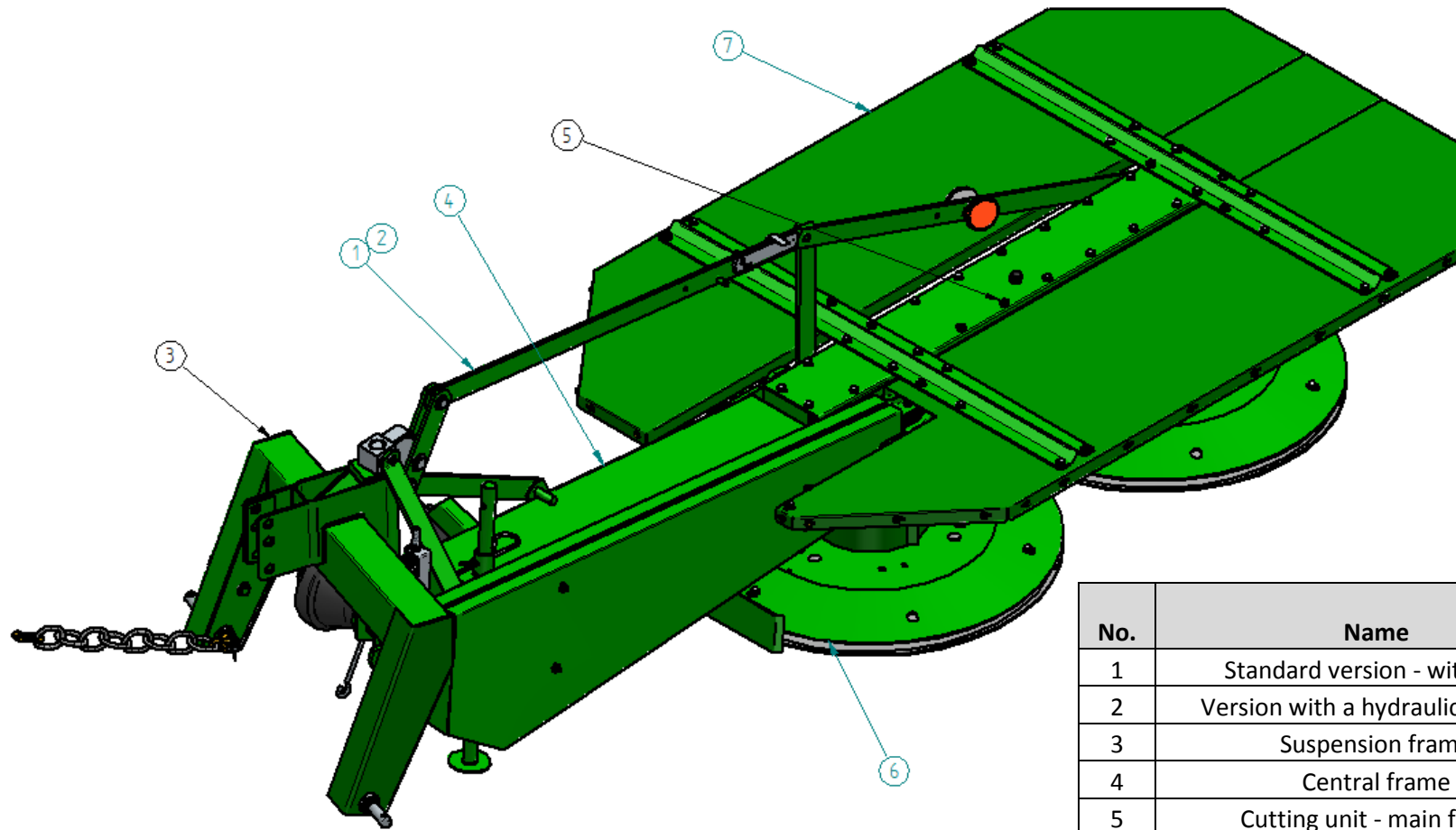


Rotary mower

1.85m; 1.65m; 1.35m; 1.35mini

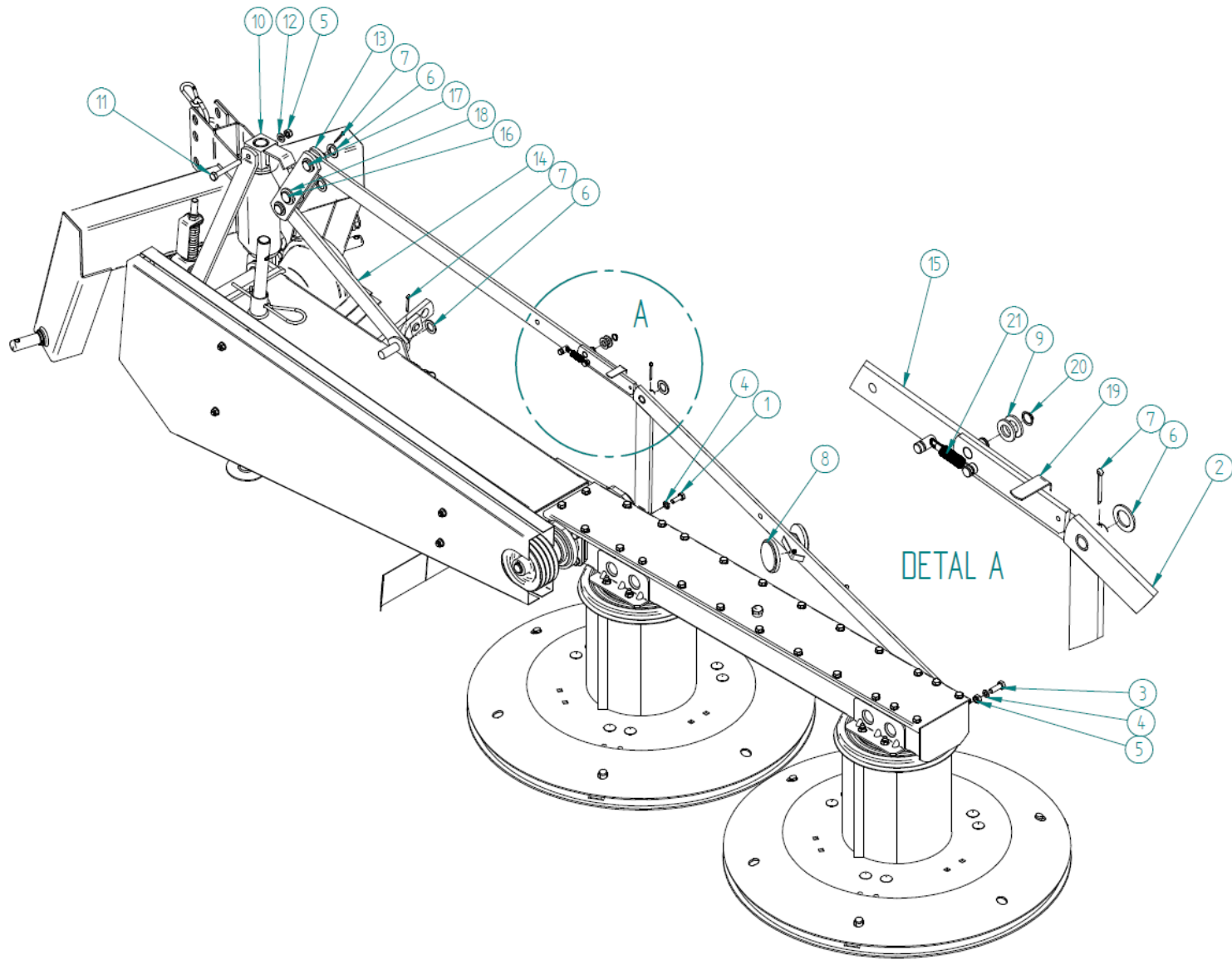
and versions with a hydraulic cylinder 1.85m; 1.65m

13.2. General design



13.2.1. Standard version - with rods

No.	Name	Sub-assembly No.
1	Standard version - with rods	13.2.1
2	Version with a hydraulic cylinder	13.2.2
3	Suspension frame	13.2.3
4	Central frame	13.2.4
5	Cutting unit - main frame	13.2.5
6	Cutting unit - operating section	13.2.6
7	Guard assembly	13.2.7

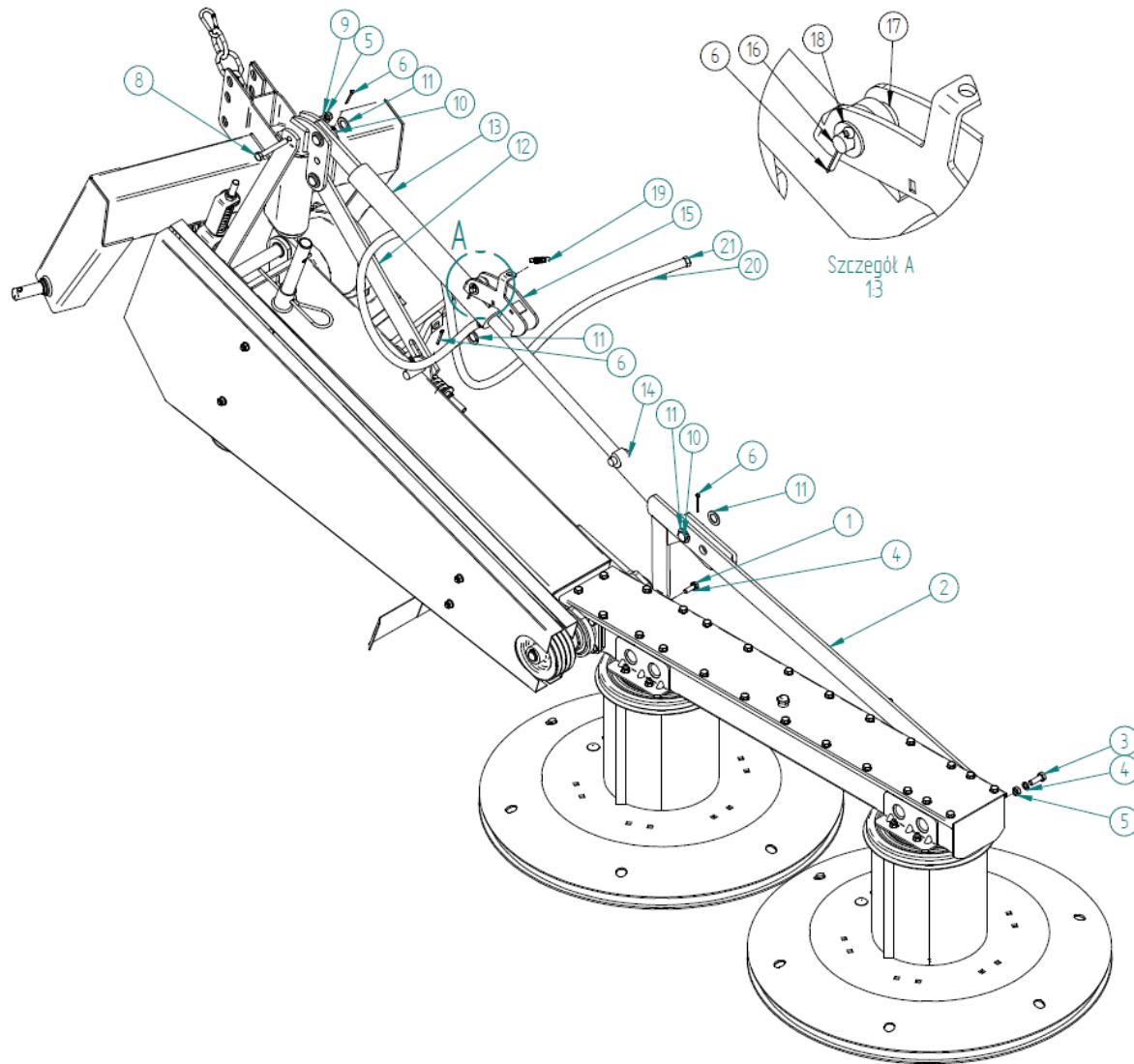


No.	Name	Part no.	Quantity/Mower type
			1.85m/1.65m/1.35m/1.35mini
1	M10*30 - 8.8 galvanized screw	11-0026	1
2	5042/01-011/0 rod system	15-0303	1/0/0/0
	Rod set 1.65 5042/01-023/5	15-0006	0/1/1/1
3	M12*35 - 8.8 galvanized screw	11-0096	1
4	12 galvanized spring washer	11-0054	2
5	M 12 self-locking nut	11-0044	2
6	22 galvanized regular washer	11-0093	6
7	5*40 galvanized cotter pin	11-0104/A	5
8	orange reflective device 75UW-P	05-0031	2
9	16 galvanized regular washer	11-0149	2
10	5042/02-008/3 forged head	15-0058	1
11	M12*90 - 8.8 galvanized screw, with incomplete thread	11-0012/A	1
12	12 galvanized regular washer	11-0125/A	1
13	5042/02-010/3 rod connector	15-0060	2
14	5042/02-009/6 simple yoke	15-0064	1
15	5042/02-007/0 front milled rod	15-0304	1/0/0/0
	5042/02-007/0 milled rod	15-0057	0/1/1/1
16	25*55 galvanized mower pin	15-0073	1
17	22*55 galvanized mower pin	15-0074	2
18	25 galvanized regular washer	11-0094	2
19	Interlock set 5042/02-022/0	15-0063	1
20	16z Seeger ring	08-0113	1
21	5042/02-052/0 galvanized interlock spring	15-0065/A	1

*galvanized coating

Table 5 Standard version - with rods

13.2.2. Version with a hydraulic cylinder

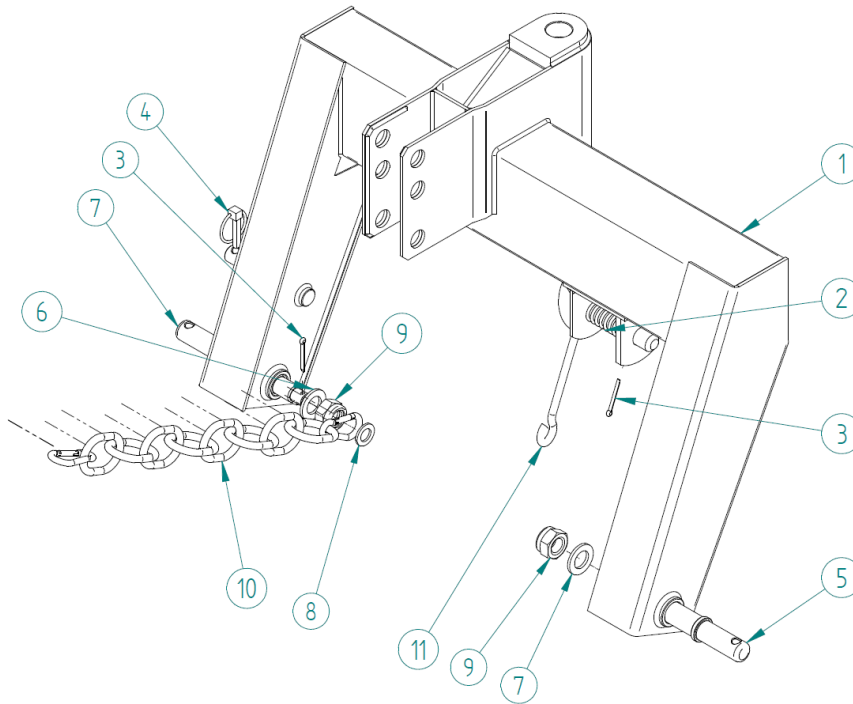


No.	Name	Part no.	Quantity/Mower type
			1.85 hydr./ 1.65 hydr.
1	M10*30 - 8.8 galvanized screw	11-0026	1
2	Rod assembly – hydraulic 1.85m	15-0303/A	1/0
	Rod assembly – hydraulic 1.65m	15-0303/A	0/1
3	M12*35 - 8.8 galvanized screw	11-0096	1
4	12 galvanized spring washer	11-0054	2
5	M 12 self-locking nut	11-0044	2
6	5*40 galvanized cotter pin	11-0104/A	5
7	Hydraulic head	15-0315	1
8	M12*90 - 8.8 galvanized screw, with incomplete thread	11-0012/A	1
9	12 galvanized regular washer	11-0125/A	1
10	22*55 galvanized mower pin	15-0074	3
11	22 galvanized regular washer	11-0093	7
12	Diagonal arm - a bean	15-0318	1
13	Hydraulic cylinder	15-0330	1, present as one part
14	Threaded lengthening pipe	15-0316/A	
15	Cylinder closure	17-0054	1
16	Ø14 pin	15-0072/A	1
17	Cylinder bush		1
18	14 galvanized regular washer	11-0171	1
19	5042/02-052/0 galvanized interlock spring	15-0065/A	1
20	P51/P52 M18x1,5/M16x1,5 2 SC L- 2500 cable	15-0331	1
21	Plug hydraulic valve Euro M18*1.5	13-0126	1

*galvanized coating

Table 6 Version with a hydraulic cylinder

13.2.3. Suspension frame

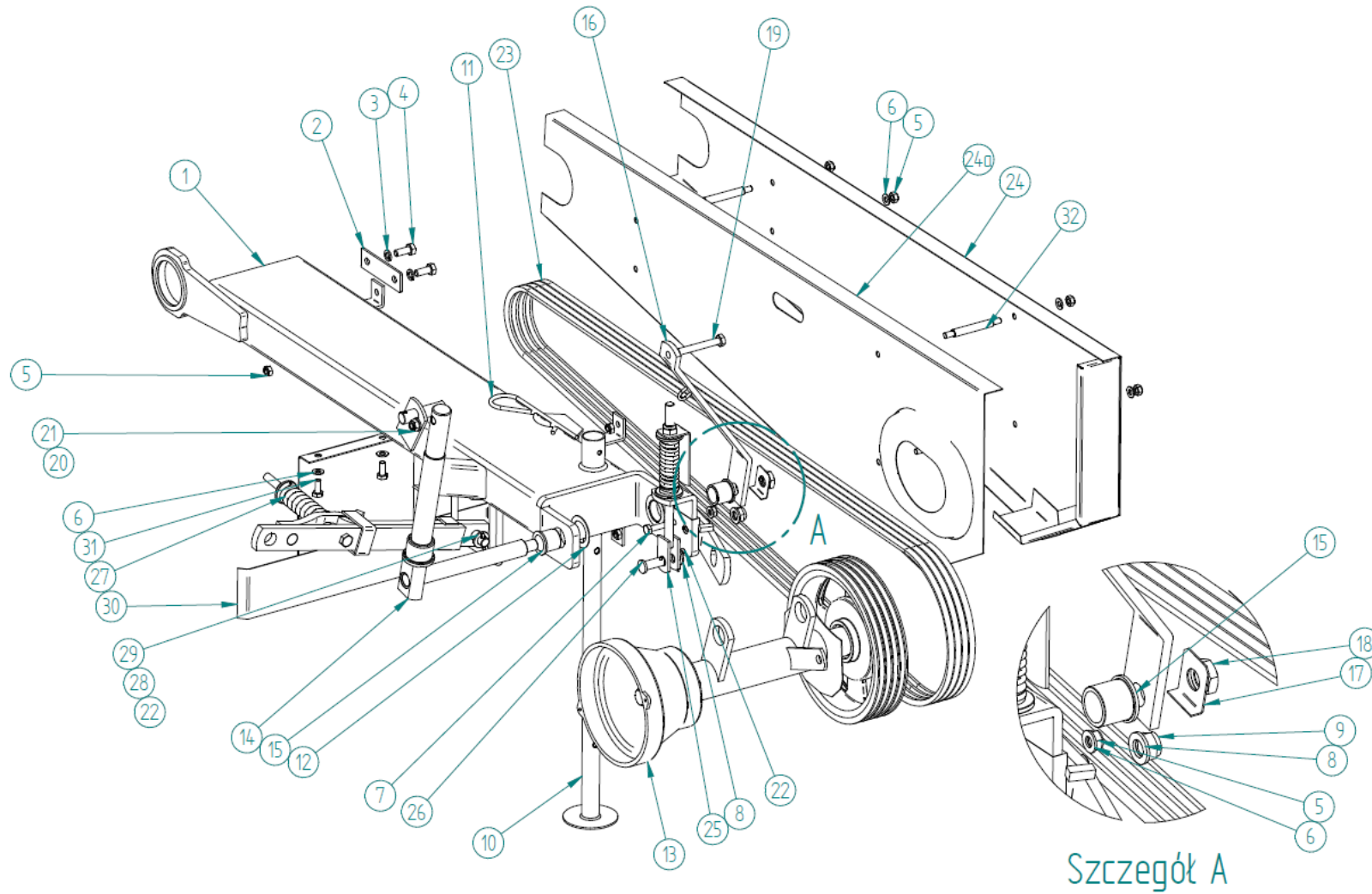


No.	Name	Part no.	Quantity/Mower type
			1.85m/1.65m/1.35m/1.35mini
1	1.85m 5042/02-089/2 suspension frame	15-0310	1/0/0/0
	1.65m 5042/02-065/6 suspension frame	15-0061	0/1/0/0
	1.35 suspension frame	15-0061/B	0/0/1/0
	1.35 5042/02-065/6 suspension frame	15-0061/A	0/0/0/1
2	50/51-105/0 galvanized corner closure spring	01-0224	1/1/0/1
3	5*40 galvanized cotter pin	11-0104/A	2/2/1/2
4	42/37-038/1 (0054280433) universal plug	01-0686	1
5	1.85 set, short L-211 suspension pin	22/0080/1	1/0/0/0
	1.35m/1.65 set suspension pin	22/0081/1	0/1/1/1
6	24 galvanized regular washer	11-0094	2
7	1.85 set suspension pin L-230, long	22/0080/2	1/0/0/0
	1.35m/1.65 set suspension pin	22/0081/1	0/1/1/1
8	18 galvanized regular washer	11-0091	1/0/0/0
9	M24 self-locking nut	11-0169/A	2/0/0/0
	M24x1.5 nut	11-0169/A	0/2/2/2
10	Chain assy. 5042/02-027	17-0003	1
11	Suspension frame closure pin		1

*galvanized coating

Table 7 Suspension frame

13.2.4. Central frame



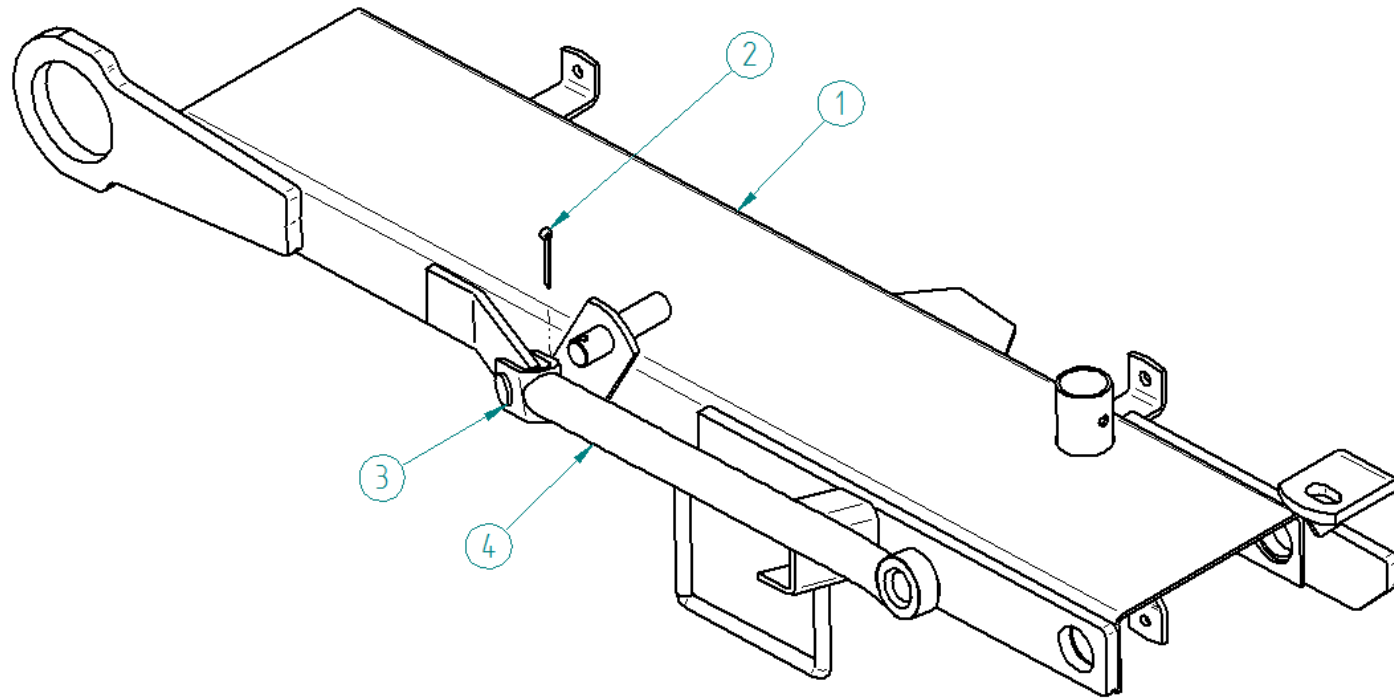
No.	Name	Part no.	Quantity/Mower type
			1.85m/1.65m/1.35m/1.35mini
1	1.85m 5042/02-017/5 central beam	15-0305	1/0/0/0
	1.65m 5042/02-023/3 central beam	15-0013	0/1/0/0
	1.35m 5042/02-023/3 central beam	15-0013/A	0/0/1/0
	1.35mini central beam	15-0013/B	0/0/0/1
2	Rear plate cover	15-0205	1
3	12 galvanized spring washer	11-0054	2
4	M12*30 - 8.8 galvanized screw	11-0077	2
5	M10 self-locking nut	11-0127/A	5/4/4/5
6	10 galvanized regular washer	11-0055/A	3/2/2/3
7	M10*40 - 8.8 galvanized screw	11-0074/B	1/0/0/0
8	16 galvanized regular washer	11-0149	2/1/1/2
9	M16 self-locking nut	11-0143/1	1/0/0/1
10	5042/02-076/0 leg	15-0075	1
11	5042/02-028/9 Beta cotter pin	15-0069	1
12	KD_SB 17.03 spacer washer		2 or 3, as required
13	Head pipe	Fig. 13.2.4.2	1
14	5042/02-013/1 joint axle	15-0062	1
15	5042/02-038/9 (30-054) joint bushing	15-0066	2
16	Yoke - Z-shaped	15-0059/A	1
17	M20 special washer, bendable		1
18	M20*1.5 low nut, galvanized	11-0034/A	1
19	M12*90 - 8.8 galvanized screw, with an incomplete thread	11-0012/A	1
20	12 galvanized regular washer	11-0125/A	1
21	M12 self-locking nut	11-0128/B	1
22	5*40 galvanized cotter pin	11-0104/A	2
23	SPA 3185 V-belt	07-0119	4/0/0/0
	ROVEN SPA 2932 V-belt	07-0082	0/4/0/0
	ROVEN SPA 2832 V-belt	07-0128	0/0/3/0
	HA 2100 V-belt	07-0200/A	0/0/0/4
24	External 1.85m V-belt guard	15-0312	1/0/0/0
24a	Internal 1.85m V-belt guard		
24	External 1.65m V-belt guard	15-0092	0/1/0/0
24a	Internal 1.65m V-belt guard		
24	External 1.35m V-belt guard	15-0092/B	0/0/1/0
24a	Internal 1.35m V-belt guard		
24	1.35mini external V-belt guard	15-0092/B	0/0/0/1
24a	1.35mini internal V-belt guard		
25	V-belt tensioner	Fig. 13.2.4.3	1
26	16 galvanized mower pin	15-0072	1
27	Safety device	Fig. 13.2.4.4	1
28	18*65 galvanized mower pin	15-0071	1
29	18 galvanized regular washer	11-0091	1
30	Front cover	15-0104	1
No.	Name	Part no.	Quantity/Mower type
			1.85m/1.65m/1.35m/1.35mini
31	M10*25 - 8.8 galvanized screw	11-0075	2

32	M10x14x120GW bolt stud (cover pin)	15-0051	4
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*galvanized coating

Table 8 Main frame

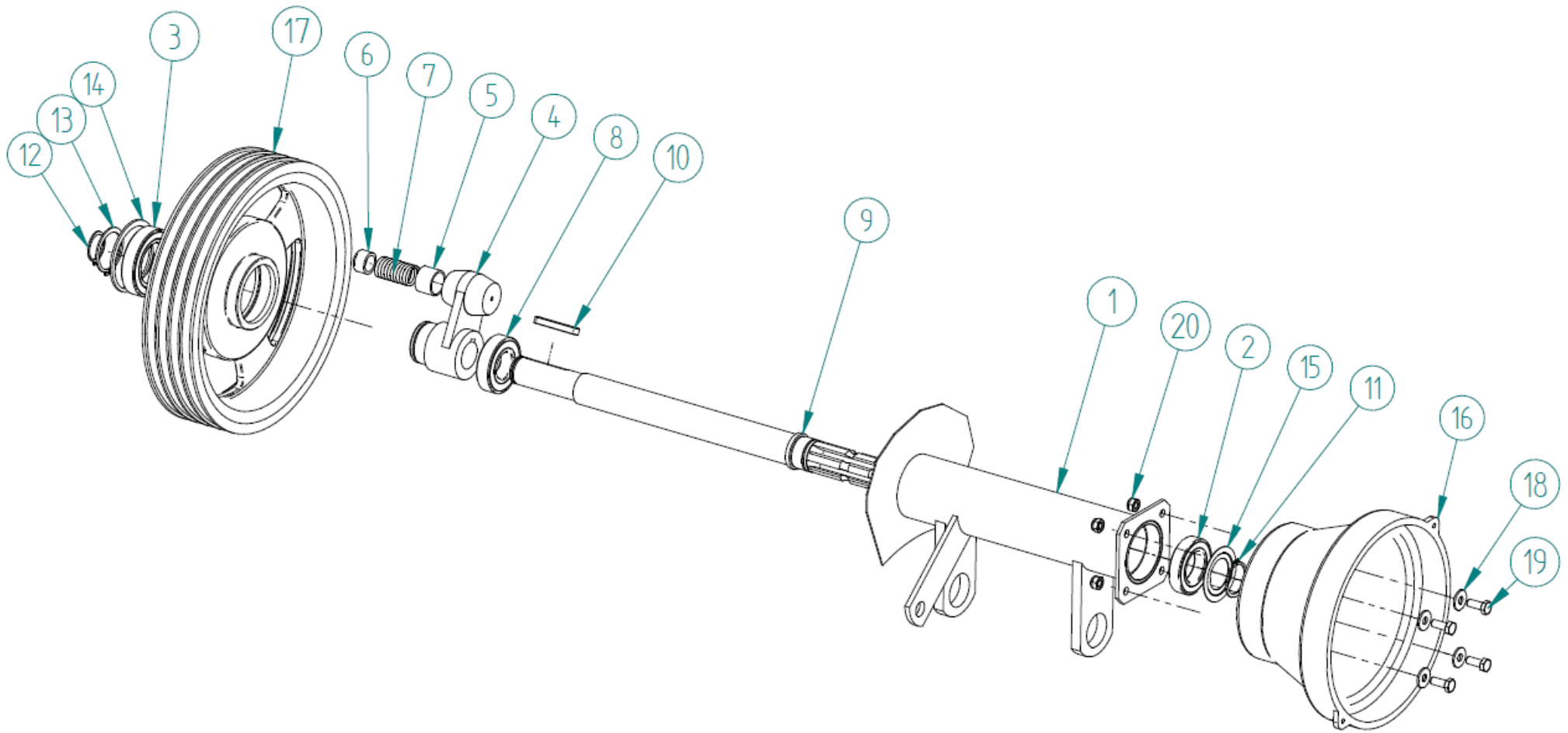
13.2.4.1. Central frame – 1.35m mower



No.	File name	Part no.	Quantity/Mower type
			1.35m
1	1.35mini central beam	15-0013/B	1
2	5*40 galvanized cotter pin	11-0104/A	1
3	18*65 galvanized mower pin	15-0071	1
4	5042/02-036/3 transport beam	15-0049	1

Table 9 Main frame - 1.35m mower

13.2.4.2. Head pipe

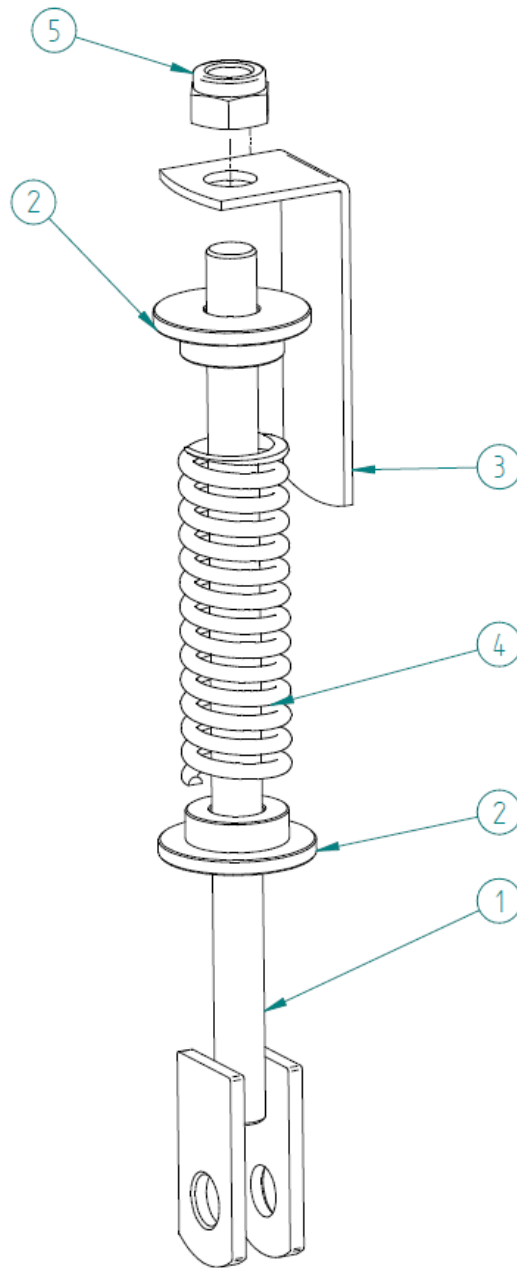


No.	Name	Part no.	Quantity/Mower type
			1.85m/1.65m/1.35m/1.35mini
1	5042/02-068/4 head pipe	15-0080	1
2	6007 ZZ bearing	06-0222/A	1
3	6009 ZZ bearing	06-0221/A	1
4	5042/02-017/2 driver	15-0040	1
5	5042/02-020/5 driver bush	15-0068	1
6	5042/02-019/8 driver pin	15-0042	1
7	5042/02-021/8 black clutch spring	15-0043	1
8	6206 ZZ bearing	06-0224/A	1
9	5042/02-060/2 head shaft	15-0053	1
10	8*7*56 5042/02-061 parallel key	15-0054	1
11	35z Seeger ring	08-0119	1
12	30z Seeger ring	08-0118	1
13	45z Seeger ring	08-0120	1
14	75W Seeger ring	08-0130	1
15	Head ring	15-0096	1
16	5042/02-071/0 (30-062) PTO KR guard	15-0107	1
17	5042/02-018/5 large pulley	15-0041	1/1/0/0
	1.35m 5070/02-019 large pulley	15-0041/A	0/0/1/1
18	M8 enlarged washer	11-0053	4
19	M8*20 - 8.8 galvanized screw	11-0187/A	4
20	M8 self-locking nut	11-0126/1	4

*galvanized coating

Table 10 Head pipe

13.2.4.3. V-belt tensioner

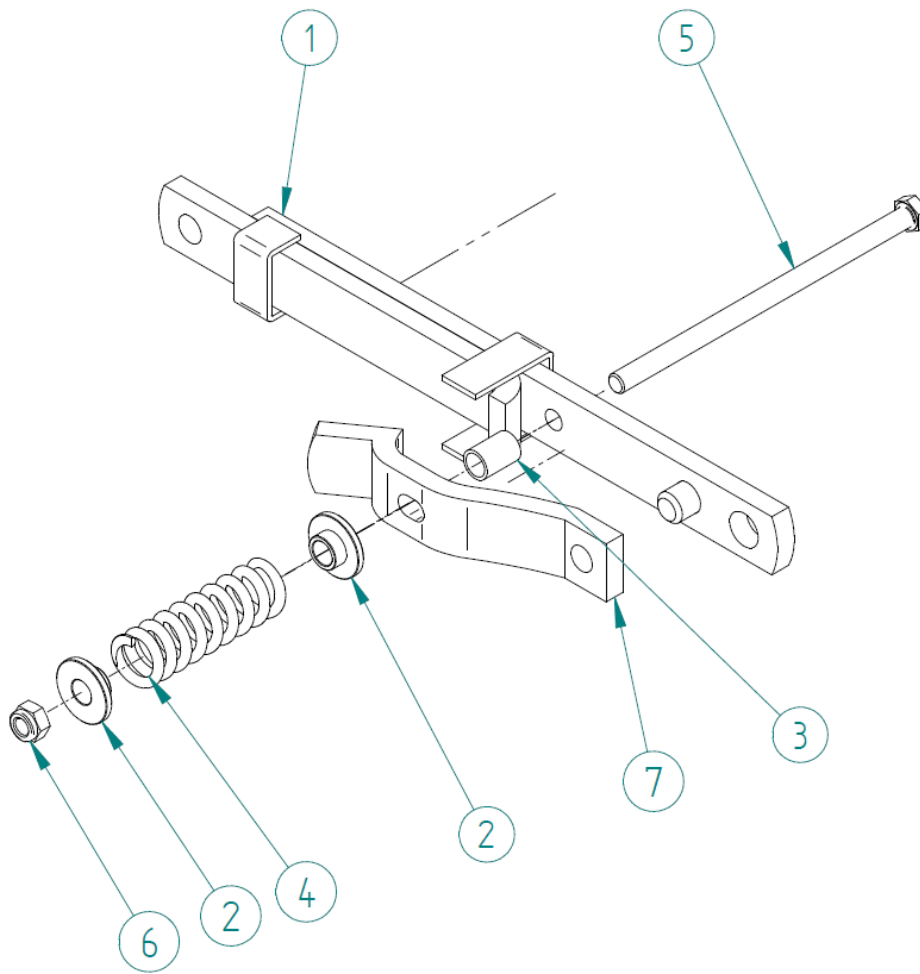


No.	Name	Part no.	Quantity/Mower type
			1.85m/1.65m/1.35m/1.35mini
1	5042/02-024/6 tensioner rod	15-0044	1
2	45/17*15 KD_Ga 33.01 tensioner spring saddle	28-0040	2
3	5042/02-040/9 angle bar	22/1235	1
4	5042/02-050/0 galvanized tensioner spring	15-0048	1
5	M16 self-locking nut	11-0143/1	1

*galvanized coating

Table 11 V-belt tensioner

13.2.4.4. Safety device

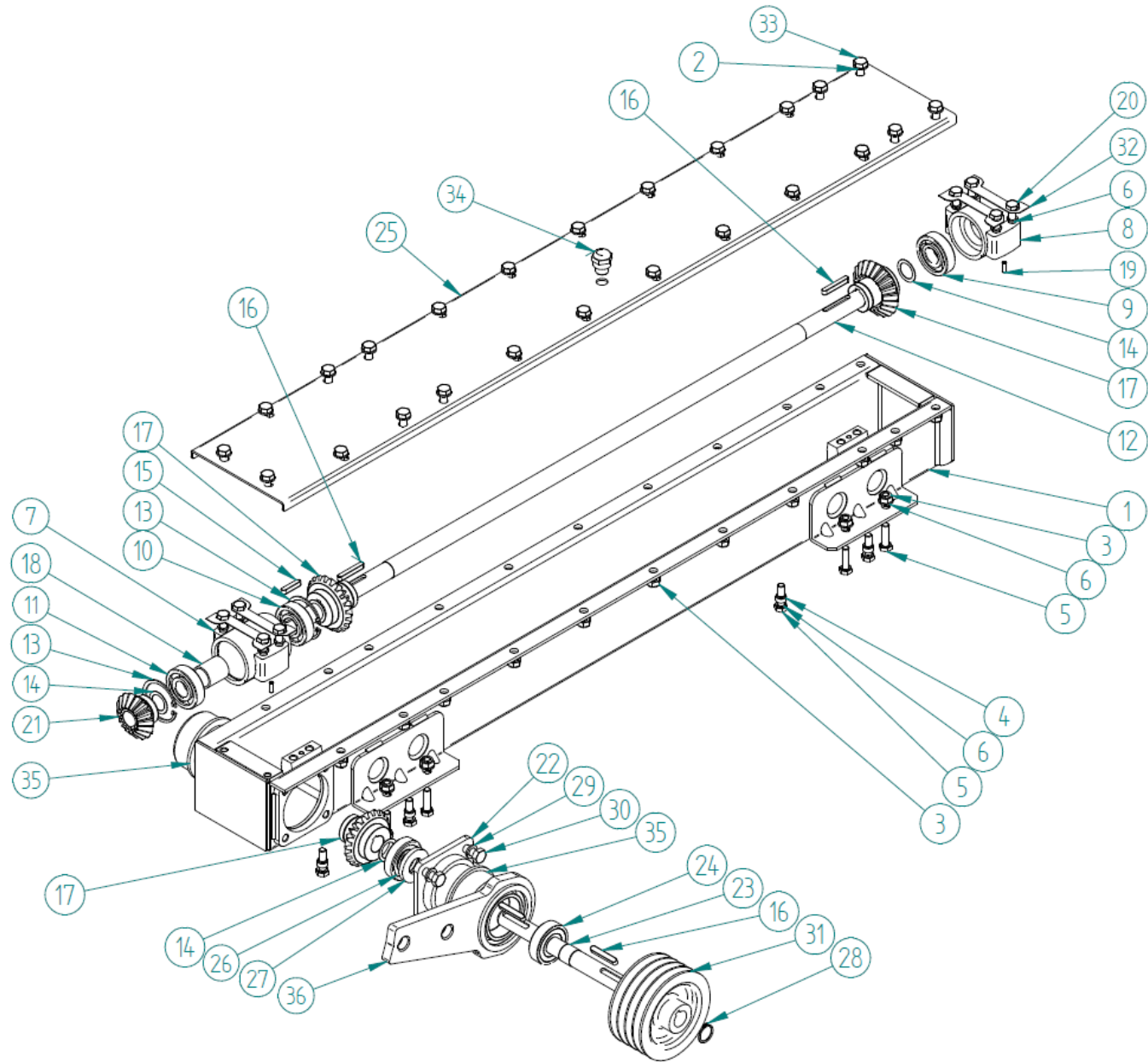


No.	Name	Part no.	Quantity/Mower type
			1.85m/1.65m/1.35m/1.35mini
1	Welded lock	15-0045	1
2	Safety spring saddle 45/17*15 KD_Bk 23.14	28-0040/A	2
3	Lock bushing	22/0015	1
4	Safety device spring 5036/02-035.0 galvanized MAZ.5011	15-0052	1
5	Screw 14*260 galvanized 5042/02-034/8	15-0047	1
6	M14 self-locking nut	11-0186/B	1
7	Safety latch 5042/02-032/2	15-0046	1

*galvanized coating

Table 12 Safety device

13.2.5. Cutting unit - main frame



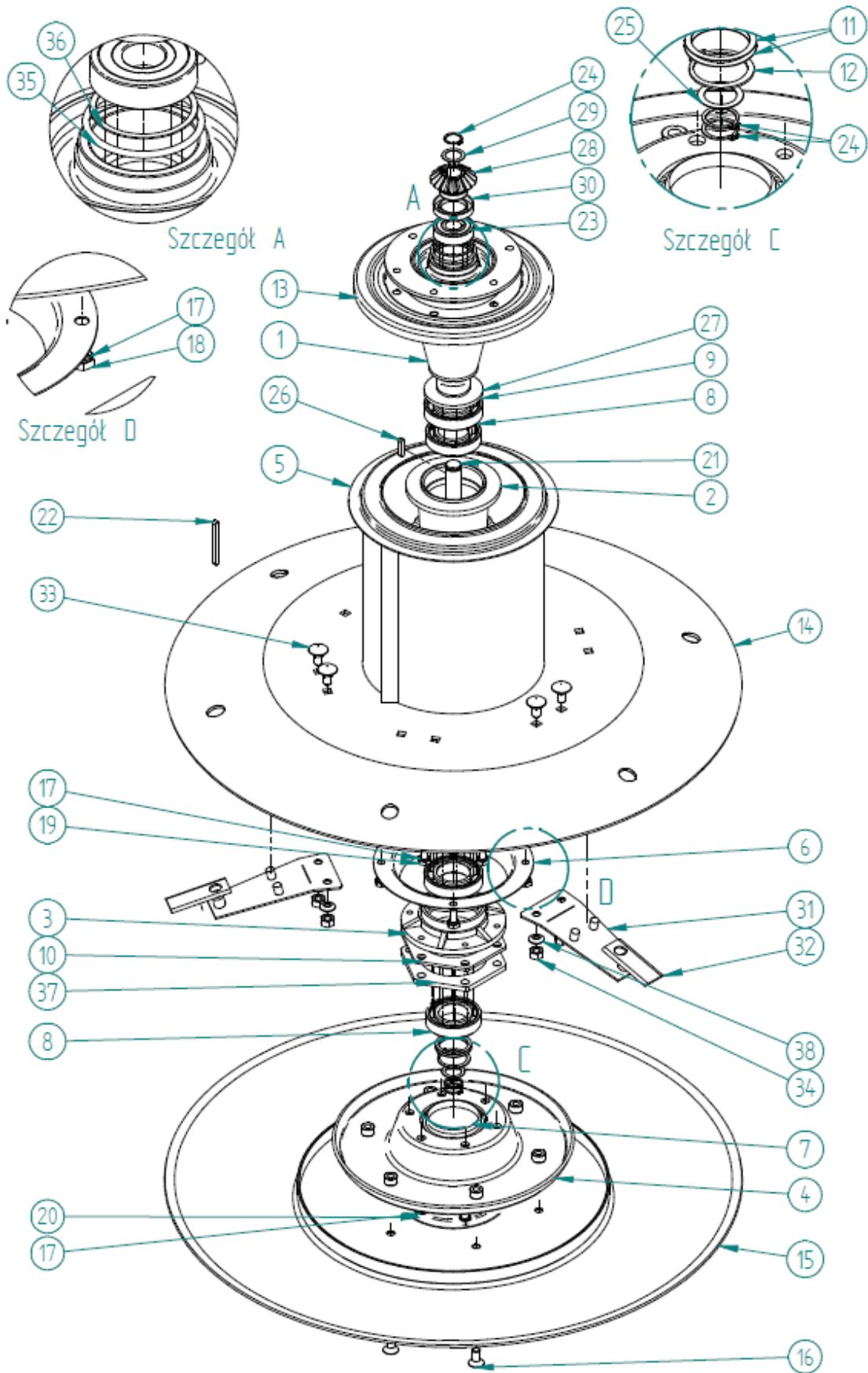
No.	Name	Part no.	Quantity/Mower type
			1.85m/1.65m/1.35m/1.35mini
1	Main frame 1.85 5042/02-019/2	15-0005/A	1/0/0/0
	Main frame 5042/01-064/5 1.65m	15-0005	0/1/0/0
	Main frame 5042/01-064/5 1.35m	15-0005/B	0/0/1/1
2	10 galvanized regular washer	11-0055/A	24/24/20/20
3	M10 self-locking nut	11-0127/A	30/26/22/22
4	Sealing bush 5042/01-033/7 (30-058)	15-0012	4/8/8/8
5	M10*35 - 8.8 galvanize screw	11-0096	12
6	10 galvanized spring washer	11-0090	20/16/16/16
7	Large bearing housing 1.85m 5042/01-005/0	15-0309	1/0/0/0
	L. bearing housing 5042/01-018/1 1.65 m	15-0001	0/1/1/1
8	Small bearing housing 1.85m 5042/01-007/0	15-0308	1/0/0/0
	Sm. bearing housing 5042/01-019/1 1.65m	15-0002	0/1/1/1
9	6305 bearing	06-0220/A	1/0/0/0
	6205 bearing	06-0225/A	0/1/1/1
10	6305 bearing	06-0220/A	1
11			1/0/0/0
12	1.85m 5042/01-004/7 frame shaft	15-0307	1/0/0/0
	1.65m 5042/01-035/2 frame shaft	15-0016	0/1/0/0
	Frame shaft 1.35m 5036/01-035	15-0016/A	0/0/1/1
13	62W Seeger ring	08-0129	2
14	25 shim	15-0086	4, 0.3;0.5 or 1mm, as required
15	Parallel key 8x7x36	15-0019	1
16	Parallel key 8*7*50 5042/01-060/0	15-0081	4
17	Large gear Z-21 5042/2-010-019 1.85m	15-0301	3/0/0/0
	Large gear Z-21 5042/01-067/3 1.65m	15-0018	0/3/3/3
18	Spacer sleeve of the frame shaft	17-0062	1/0/0/0
19	Spring-type pin 6*16	15-0110	4
20	Screw M10*60 - 8.8 galvanized, incomplete thread	11-0035/1	8/4/4/4
21	Z-17 5042/2-010-019 1.85 m small gear wheel	15-0300	1/0/0/0
	Z-16 5042/01-066/0 1.65m small gear wheel	15-0017	0/1/1/1
22	Attachment hub 5042/01-027/6	15-0009	1
23	Attachment shaft 5042/01-026/3	15-0008	1
24	6305 zz bearing	06-0220	1
25	1.85m 5042/01-013/6 cover	15-0302	1/0/0/0
	1.65m 5042/01-065/8 cover	15-0003	0/1/0/0
	Cover 1.35	15-0003/1	0/0/1/1
26	Bearing 30305A	06-0223/A	1
27	Seal 25x52x10	08-0018	1
28	25z Seeger ring	08-0117	1
29	12 galvanized spring washer	11-0054	4
No.	Name	Part no.	Quantity/Mower type
			1.85m/1.65m/1.35m/1.35mini
30	M12*30 - 8.8 galvanized screw	11-0077	4

31	Small pulley 5042/01-025/0	15-0007	1/1/0/0
	Small pulley 1.35m 5070/01-008	15-0007/A	0/0/1/1
32	Tab washer 5042/01-062	15-0095	4/2/2/2
33	M10*25 - 8.8 galvanized screw	11-0075	24/24/20/20
34	The valve set 5042/01-044/1	15-0098	1
35	Support bush 5042/01-029/1 (30-053)	15-0011	2
36	End Plate	15-0010	1

*galvanized coating

Table 13 Cutting unit – groove

13.2.6.Cutting unit - operating section



No.	Name	Part no.	Quantity/Mower type
			1.85/1.65/1.35/1.35mini
1	Drum hub 5042/01-074/7	15-0021	2
2	Operating disc hub 5042/01-079/0	15-0036	2
3	Sliding disc hub 5042/01-077/5	15-0026	2
4	Thrust disc 5042/01-034/0	15-0027	2
5	Drum guard 5042/01-072/1	15-0039	2
6	Lower hub guard 5042/01-043/1	15-0032	2
7	Guard - cap 5042/01-041/3 (30-056)	15-0031	2
8	Bearing 6209 RS	06-0219/B	4
9	Bearing 6210 RS	06-0218/B	4
10	Thin spacer ring	15-0023/A	2
11	Shim 45*55	15 -0087	4, 0.3;0.5 or 1mm, as required
12	45z Seeger ring	08-0120	2
13	Upper drum guard 5042/01-036/5	15-0028	2
14	1.85m 5042/02-02/1 working plate	15-0037/A	2/0/0/0
	1.65m 5042/01-037/8 working plate	15-0037	0/2/0/0
	Operating disc 1.35m	15-0037/B	0/0/2/2
15	1.85m 5042/02-018/2 sliding plate	15-0085/A	2/0/0/0
	1.65m 5042/01-052/8 sliding plate	15-0085	0/2/0/0
	1.35m 5042/01-058/8 sliding plate	15-0085/B	0/0/2/2
16	M12x25 set of 10.9 lock screw	15-0079/B	12
17	10 galvanized spring washer	11-0090	28
18	M10*25 - 8.8 galvanized screw	11-0075	8/8/4/4
	M10*35 - 8.8 galvanize screw	11-0096	0/0/4/4
19	M10*30 - 8.8 galvanized screw	11-0026	8
20	M10*35 - 8.8 galvanize screw	11-0096	12/0/0/0
	M10*25 - 8.8 galvanized screw	11-0075	0/12/12/12
21	5042/01-061/7 bearing shaft	15-0024	2
22	Parallel key 8*7*80 5042/01-058/4	15-0034	2
23	6305 zz bearing	06-0220	2
24	25z Seeger ring	08-0117	6
25	25 shim	15-0086	2, 0.3;0.5 or 1mm, as required
26	Parallel key 8*7*32 5042/01-015/6	15-0025	2
27	5042/01-003/1 (30-057) bearing guard	15-0022	2
28	Z-17 5042/2-010-019 1.85 m small gear wheel	15-0300	2/0/0/0
	Z-16 5042/01-066/0 1.65m small gear wheel	15-0017	0/2/2/2
29	25 shim	15-0086	2, 0.3;0.5 or 1mm, as required
No.	Name	Part no.	Quantity/Mower type
			1.85/1.65/1.35/1.35mini
30	40*62*10 sealer	08-0030	2
31	1.65/1.85 5042/01-030/9 knife holder	15-0038	6/6/0/0

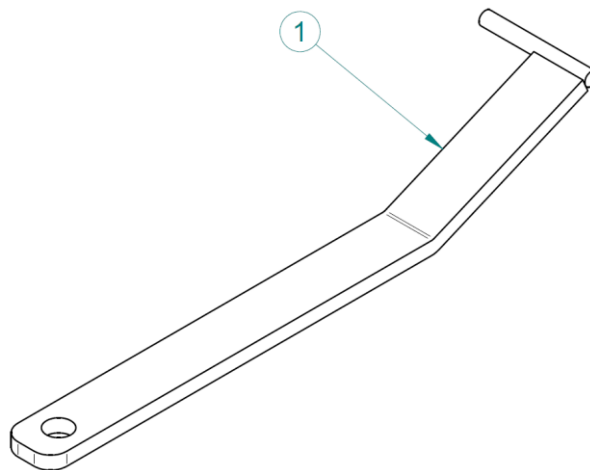
	1.35 5070/01-010/9 knife holder	15-0038/A	0/0/4/4
32	5042/01-045/4 BR 94 rotary mower knife	15-0084	6/6/4/4
33	(406) 12*25 10.9 galvanized lock screw, low seated	15-0079/B	12/12/0/0
34	M12 galvanized nut	11-0044	12/12/0/0
35	fi70x4 sealing ring	08-0105	2
36	55x62 shim	15-0088	2, 0.3;0.5 or 1mm, as required
37	Thick spacer ring	15-0023	2/0/0/0
38	Conical ring	15-0030/A	12/12/0/0

*galvanized coating

*The quantities are provided for the quantity included in the machine set – 2x operating section

Table 14 Cutting unit - operating section

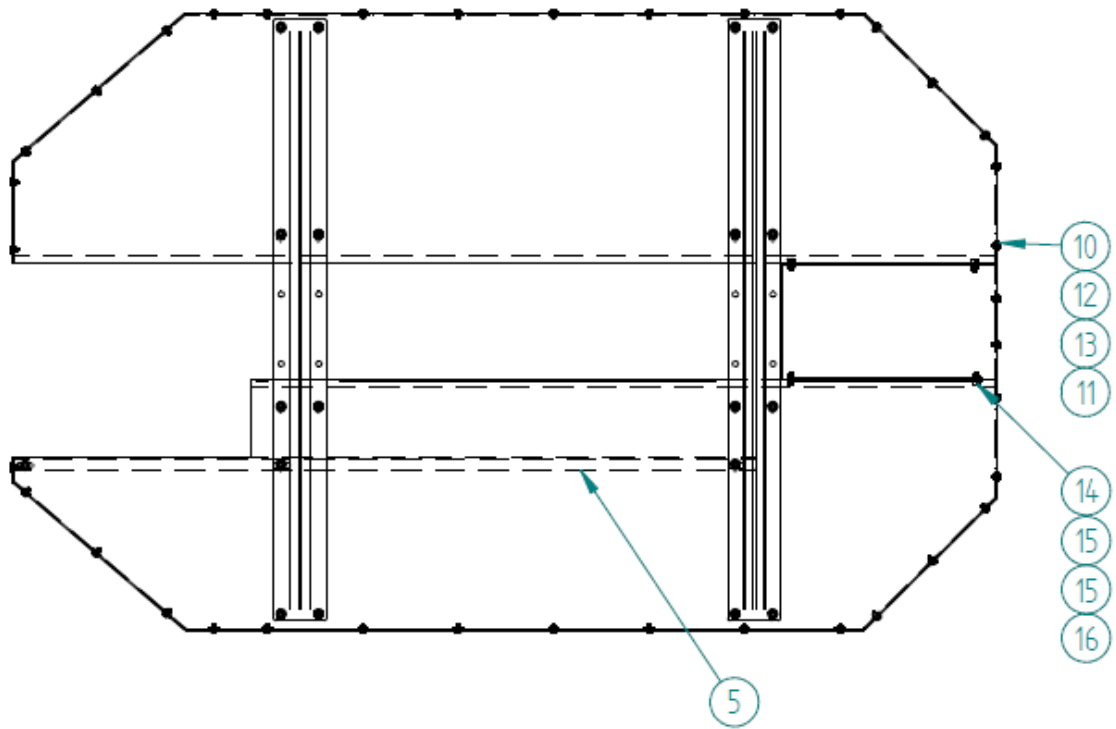
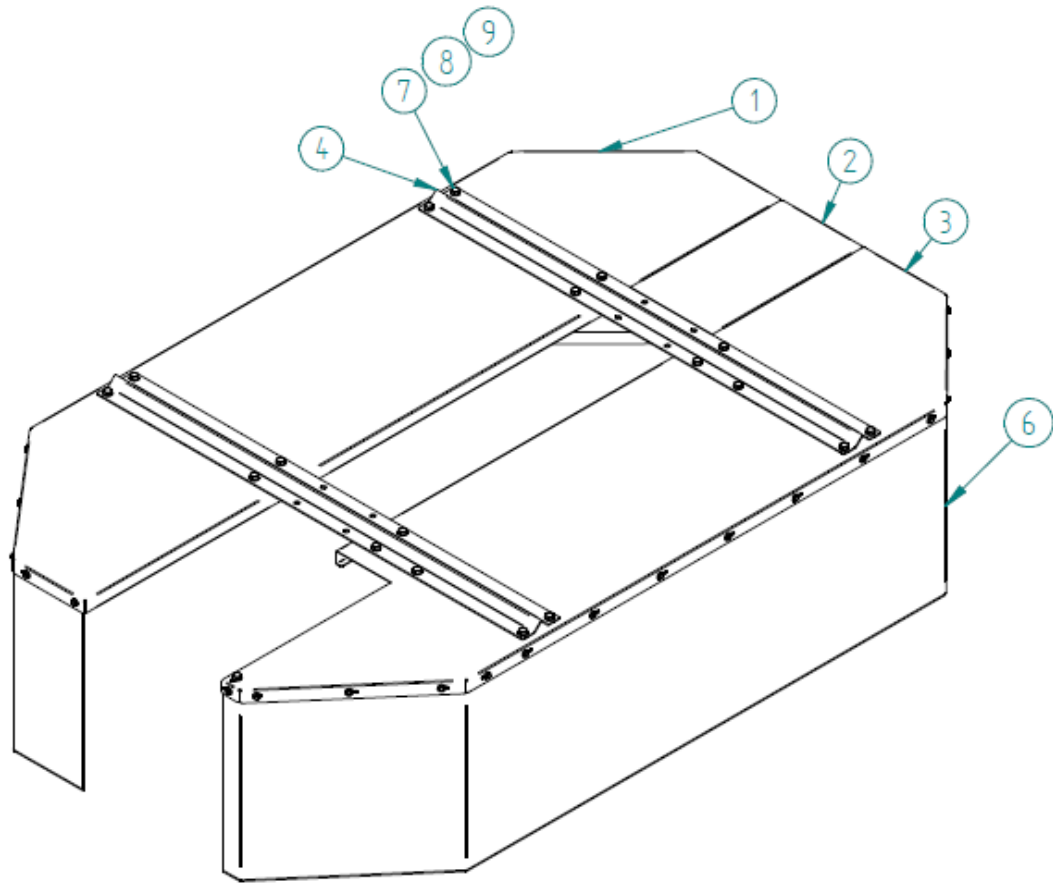
13.2.6.1. Knife replacement spanner



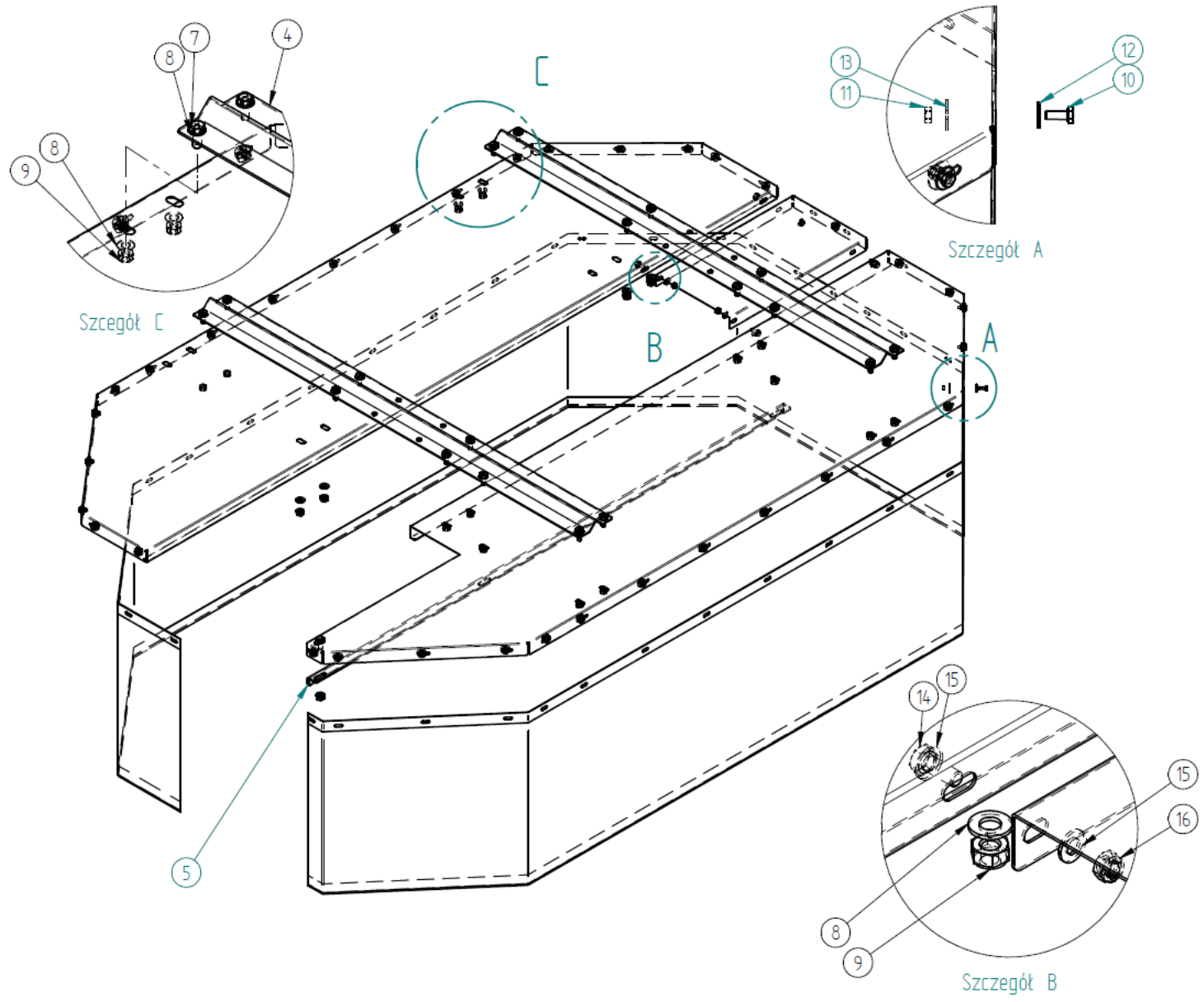
No.	Name	Part no.	Quantity/Mower type
			1.85m/1.65m/1.35m/1.35mini
1	5042/00-005/9 knife replacement spanner	15-0102	1

Table 15 Knife replacement spanner

13.2.7.Guard assembly



Guard assembly, continued



No.	Name	Part no.	Mower type [quantity]	
			Quantity: 1.85/1.65/1.35/1.35mini	
	1.85m metal guard set 5042/03-001/0	15-0314	1/0/0/0	
	1.65m 5042/03-020/3 metal guard	15-0091	0/1/0/0	
	1.35m metal guard made of "1.5" sheet	15-0091/B	0/0/1/0	
	1.35mini metal guard made of "1.5" sheet	15-0091/B	0/0/1/0	
1	Right guard		1/set	
2	Rear shield		1/set	
3	Left guard		1/set	
4	Bent reinforcement		1/set	
5	Reinforcing angle bar		1/set	
6	Reinforced apron 1.85m EX 5042/03-014/5	15-0313	1/0/0/0	
	Reinforced apron EX 1.65m EX. 5042/03-019/6	15-0067/A	0/1/0/0	
	1.35m EX protective apron	15-0067/B	0/0/1/0	
	1.35m ex. protective apron 5042/03-019/6	15-0067/M	0/0/0/1	
	1.65/1.85 set of guard screws	11-0262	1/1/0/0	
	1.35 set of guard screws	11-0262/A	0/0/1/1	
7	M10*25 - 8.8 galvanized screw	11-0075	19/19/19/21	
8	M10 regular washer	11-0055/A	38/38/38/42	
9	M10 self-locking nut	11-0127/A	19/19/19/21	
10	M6*16 - 8.8 galvanized screw	11-0188/A	37/37/33/29	
11	M10 regular nut	11-0043/A	37/37/33/29	
12	M6 enlarged washer	11-0082/A	37/37/33/29	
13	M6 enlarged washer	11-0082/A	37/37/33/29	
14	M8*20 - 8.8 galvanized screw	11-0187/A	4	
15	M8 regular washer	11-0049	8	
16	M8 regular nut	11-0040	4	

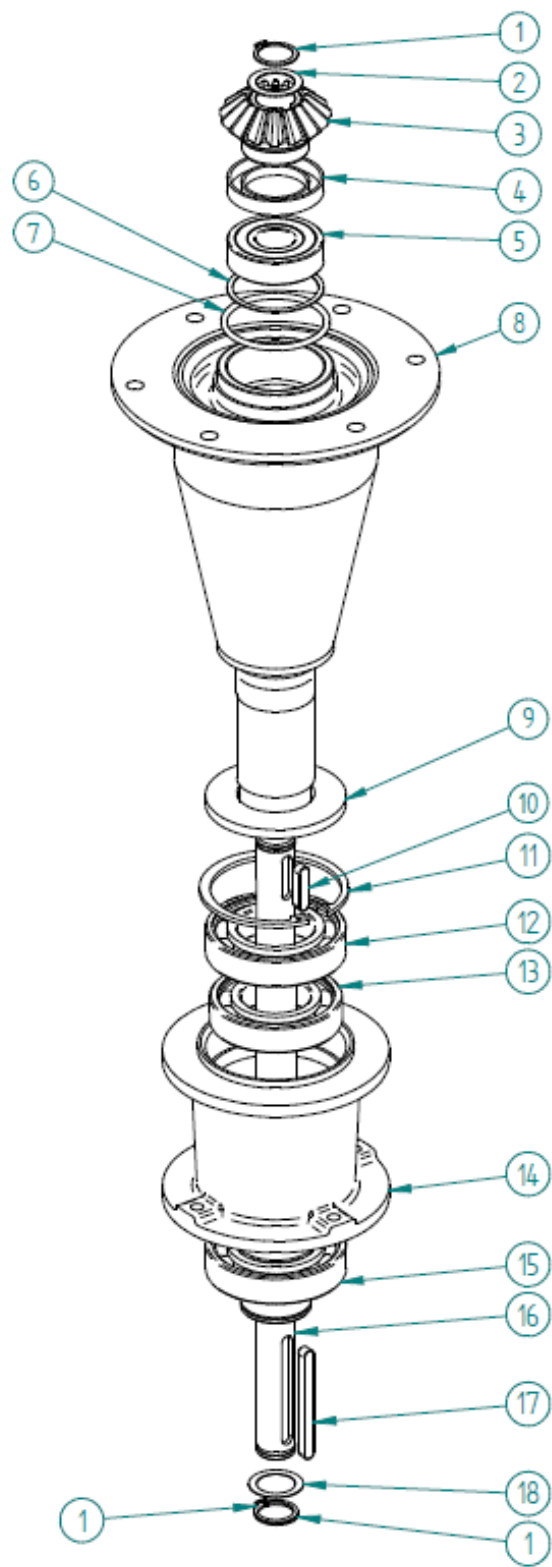
included in the metal guard set for a given mower type

included in the screw set for a given mower type

Table 16 Guard assembly

Every new machine is supplied with a set of guards along with the necessary set of screws, washers, nuts.

Complete drum unit



Nr p.	Name	Part number	Qty/Mower type
			1,85m/1,65m/1,35m/1,35mini
	Complete unit	17-0019/2 17-0019/1 17-0019	1/0/0/0 0/1/0/0 0/0/1/1
1	Seger ring 25z	08-0117	3
2	Spacer washer 25	15-0086	1, depending from the needs 0,3;0,5 lub 1mm
3	Small bevel gear Z-17 5042/2-010-019 1.85 m	15-0300	1/0/0/0
	Small bevel gear Z-16 5042/01-066/0 1.65m	15-0017	0/1/1/1
4	Sealant 40*62*10	08-0030	1
5	Bearing 6305 zz	06-0220	1
6	Spacer washer 50x62	15-0088	1, , depending from the needs 0,3;0,5 lub 1mm
7	Sealing ring fi70x4	08-0105	1
8	Drum hub 5042/01-074/7	15-0021	1
9	Sealant 5042/01-003/1 (30-057)	15-0022	1
10	Inlet. 8*7*32 5042/01-015/6	15-0025	1
11	Seger ring 90w	08-0132	1
12	Bearing 6210	06-0218/A	1
13	Bearing 6210 RS	06-0219/B	1
14	Working disc hub 5042/01-079/0	15-0036	2
15	Bearing 6210 RS	06-0218/B	1
16	Reducing gear drive shaft 5042/01-061/7	15-0024	1
17	Inlet 8*7*80 5042/01-058/4	15-0034	1
18	Spacer ring 25	15-0086	1, depending from needs 0,3;0,5 lub 1mm