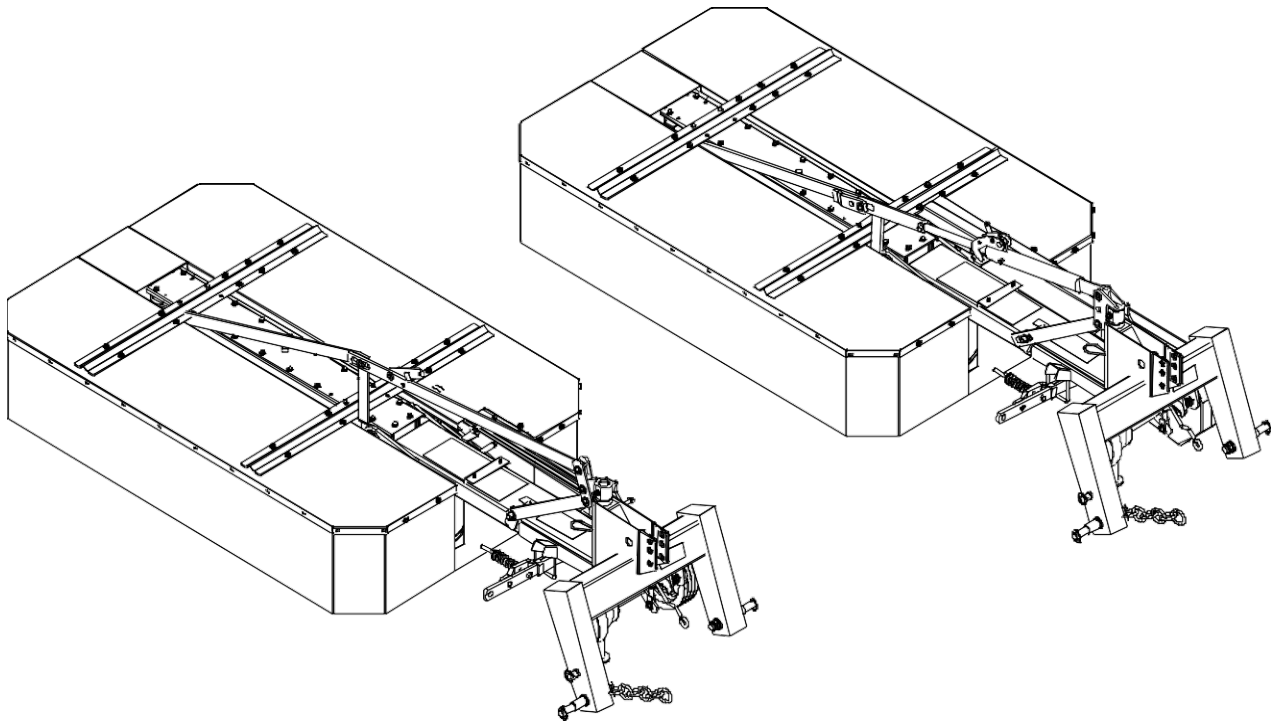


# Drum Mower

*Models:*  
**BDR-135  
BDR-165  
BDR-185**



## **Operator's Manual Parts Breakdown**

**Publication #: April 2019**

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## INTRODUCTION

Thank you for purchasing your Tar River Drum Mower. This Operator's Manual is available with every machine for the purpose of introducing the user to the design, maintenance, and adjustment of the mower. It will also warn against any possible threats. The Operator's Manual includes information regarding the adjustment and transport on the public roads.



Following the instructions carefully will ensure many years of damage-free and safe operation and will result in decreasing of the operational costs of the machine.

If you have any questions after reading this manual, please contact the Sales Representative or the Sales and Marketing Department.

To emphasize the importance of the information and the warnings of possible hazards, the following warning symbol with a description has been used:

If you see this symbol, be aware of a threat, carefully read the appropriate information and inform other operators about it.



The mower has a name plate placed on the middle frame with basic machine identification information.

The warranty proceedings rules and the rules resulting from them are written in the warranty card, which is an integral part of the Operator's Manual. The Operator's Manual is part of the basic equipment of the machine and it should be kept for future use.

## PRODUCT PURPOSE

The purpose of the Drum Mower is to be used in farming to mow the low stem green fodder (alfalfa grass, etc.) in the fields and meadows.

Operating the mower in alternate conditions will be considered a misuse. Strict compliance with the requirements for the use of the machine as well as its servicing and repairs by the manufacturer is a prerequisite for the intended use.

The machine should be used, operated and maintained only by persons who are familiarized with its specifics as well as with the work safety proceedings rules.

The provisions regarding preventing accidents and all basic work safety and hygiene rules as well as the traffic regulations must always be observed.

Any changes made to the machine without the consent of the manufacturer will exempt the manufacturer from the responsibility for any possible damages resulting from them.

## SAFETY RULES

PLEASE BE CAREFUL – READ THE OPERATOR’S MANUAL CAREFULLY IN ORDER TO PROTECT YOURSELF AND OTHERS FROM DANGER.

The machine should be used with respect to the basic work safety rules and the following precautions:

- **NEVER** allow any unauthorized persons, unfamiliar with the Operator’s Manual or underage persons, especially children, to use the machine.
- **ALWAYS** check the physical condition of the machine, especially its wear and whether the operating elements of the cutting system are properly secured.
- **YOU MUST** replace the worn out or damaged parts with new ones.
- **THE MACHINE** may be operated only with the recommended tractors equipped with the required front axle load.
- **DURING** the time of aggregating the machine with the tractor, special care should be exercised, and it is prohibited for any persons to be present between the machine and the tractor while the engine is on.
- **IT IS UNACCEPTABLE** to operate the machine without the shields and a guard, it is also prohibited to operate the machine with damaged shields and lifted guard.
- **IT IS UNACCEPTABLE** to operate the hydraulic lift lever externally.
- **PRIOR TO ANY OPERATION** activities performed on the mower, it is necessary to disengage the power take-off drive and the engine of the tractor, pull out the key from the ignition, and allow the operating drums and the blades to come to a complete stop.
- **WHILE** performing necessary operation activities required for the purpose of lifting the mower on the three-point suspension system, it is very important to secure it additionally to prevent from detaching by a support or a chain.
- **IT IS PROHIBITED** to lift the mower with the power drive turned on and the cylinders rotating.
- **IT IS NECESSARY** to check whether there are any persons or animals within the danger zone prior to turning the driving power on or during operating the mower.
- **IT IS PROHIBITED to operate the machine with any bystanders present within less than 50m perimeter.**
- **THE FIELDS AND MEADOWS TO BE MOWED** should be free from any foreign and hard objects.
- **IT IS PROHIBITED** to mow on the sides of the streets, public roads, public places (parks, schools, etc.) or places with stones in order to eliminate the risk of the hard objects thrown out.
- **THE MOWER SHOULD BE** turned on only when in the operating position.
- **THE MOWING** may be started only when the power take-off engine speed of 540 rev/min. is reached; it is prohibited to surpass 600 rev/min.
- **IT IS PROHIBITED** to operate the mower while driving backwards.
- **FOR TRANSPORT** the mower should be in a transport position.
- **CHANGING** the mower’s position from the transport position to the operating position should be performed on a horizontal and even surface, with the blades lifted above the ground.
- **IT IS UNACCEPTABLE** to carry on board any persons or any load while the machine is being transported or while operating it.
- **WHILE** on the public road, applicable provisions of the Traffic Regulations should be obeyed, and the mower should be equipped with required lighting and warning devices in accordance to the local laws of a particular country, where the machine is used.

**NOT APPLYING** the rules mentioned above may cause hazard for the operator of the machine and bystanders, as well as it may cause damage to the machine. For the damages resulting from the failure to



comply with these rules, the responsibility will be on the side of the mower's user.

## **PARTIAL RISKS**

The manufacturer has made every effort to ensure that the design and the intended method of operating the mower does not cause any danger to people and their environment.

Due to the nature of the mower and the lack of such opportunities to fully expose the cutter, certain elements of risk can occur.



**THE DANGER** caused by the presence of the sharp edges of the cutting system and the possibilities of any hard objects thrown out, e.g. stones, broken blades, etc. The danger zone resulting from the possibility of throwing out hard objects is within 150 ft. perimeter from the mower being operated.

**DANGER** the working cylinders and the blades are still rotating for a certain amount of time even after the power drive of the mower is turned off. Therefore, before proceeding with any work activities on the mower, it is crucial to wait until the operating drums with the blades stop rotating.



**DANGER** changing the mower's position from the transport position to the operating position and backwards may be performed only on an even and flat surface after prior leveling of the machine. Failure to comply with these conditions may cause the cutting system of the mower turn around on its own on the suspension and hit or deform the operating elements of the tractor.

## **SAFETY SIGNS AND INSCRIPTIONS**

There are warning labels placed on the mower with safety signs in the form of pictograms, which give clear instructions and comments informing about what should be treated with special precaution in order for the operation of the mower to be safe.

**Carefully read** every warning label and get familiarized with their meaning.

The warning labels should be kept clean and readable throughout the whole life of operating the mower. In case the warning labels are not readable, the damaged labels should be replaced with new ones.

New systems and parts replaced during any repairs should have all required warning labels. The new labels may be obtained from stores or from the manufacturer, as it is done with any other spare parts.

# GENERAL INFORMATION

## Sales Information

The technical condition and the equipment of the mower should be checked at the time of purchase.

It should be required from the equipment dealer to carefully fill out the Warranty Registration Form. Failure to provide the date of purchase or the dealer's information might cause the buyer to suffer disapproval of any possible complaints.

## Equipment and Spare Parts

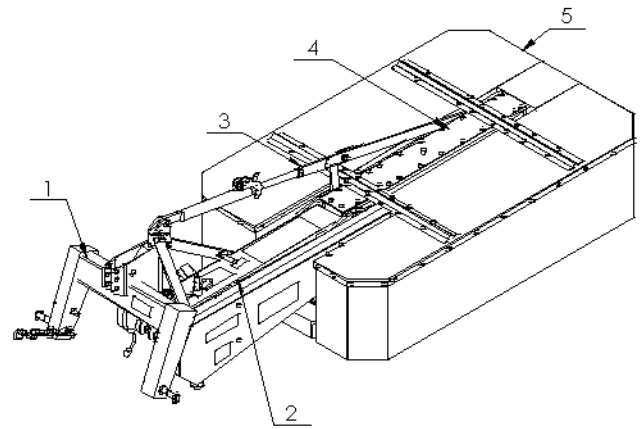
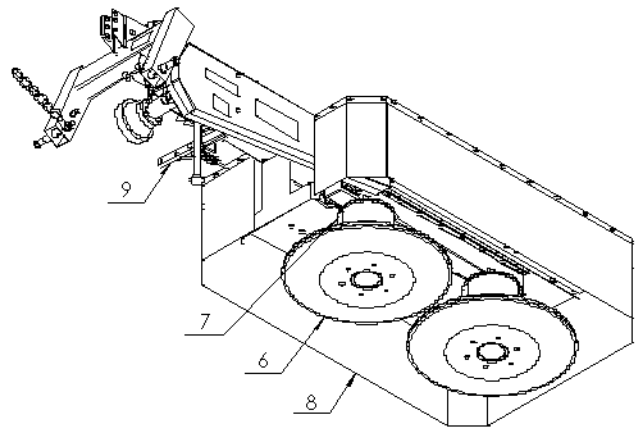
The mower includes the following basic equipment:

- The Operator's Manual, Parts Breakdown and Warranty Registration Form 1pc.
- Blade Changing Tool 1pc.
- Blades (packed) 18pcs

## Design and Operation

The design of the mower:

1. Suspension
2. Central beam
3. Push rods, hydraulic cylinders (depending on the version)
4. Main frame
5. Shield system
6. Stump jumper
7. Operating drums
8. Protective shield
9. Lock

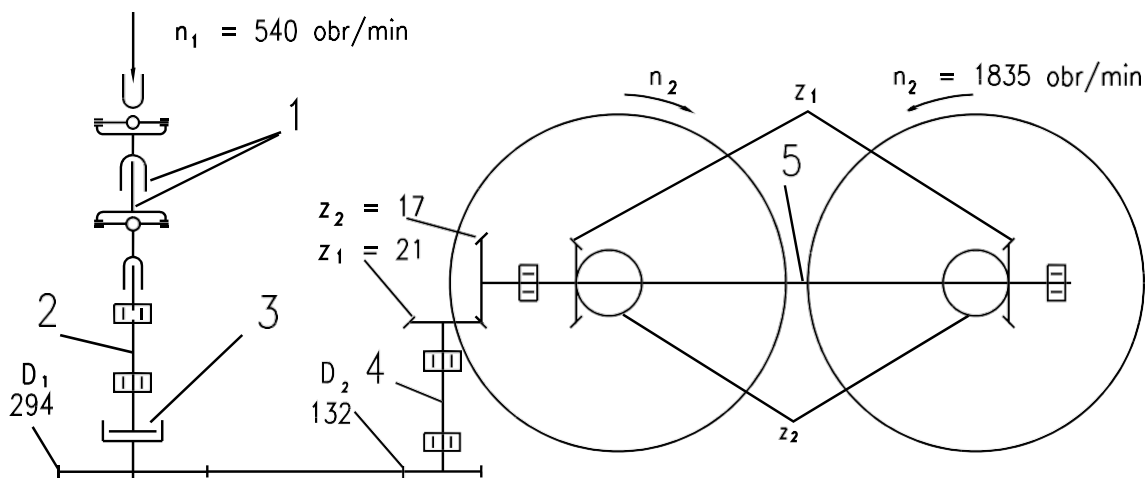


The suspension system frame (1) is used to connect the mower with the tractor. The main frame (4) is connected pivotally with the suspension frame through the central beam (2). The cutting system is made of two operating drums (7) with blades attached rotationally in their lower part. The drums rest on the stump jumpers (8) when in the operating position, which adjust to the ground contours.

Changing the position of the mower from the transport position to the operating position and backwards is made possible through the pivotal connection of the of the suspension system frame with the central beam. The guards and shield (8) protect the machine operator and other people from any hard object, which might be thrown out from under by the operating drums (7).

The spring fuse prevents damages of the mower when the cutting system moves onto an obstacle; the operating drums are powered by the tractor's PTO. The drums along with the blades rotate in opposite directions cutting the forage and forming it into windrows.

The one way slip clutch allows for free movement of the drums after disengaging the engine and protects the drive elements from any damage.



### Description of Mower's Power Drive

- 1 – PTO shaft
- 3 – slip one-way clutch

- 2 – head drive shaft
- 4 – drive shaft of the main frame

## OPERATIONAL SERVICE

You may start operating the machine only after having carefully read the Operator's Manual.

Prior to connecting the rotary mower to the recommended tractors, they should be properly prepared.

- Check the physical condition of the machine and perform daily maintenance work in accordance to the operator's manual of the tractor.
- Tilt or disassemble the elements of the connection and attachment system of the tractor, which may interfere or cause collisions with the PTO shaft.



**ATTENTION** disassembling these elements will protect against any damage to the PTO shaft while bringing down the suspension system to the lower end position

- Assemble the tractor's power take-off shaft shield
- The recommended tractors should be equipped with the front axle weights

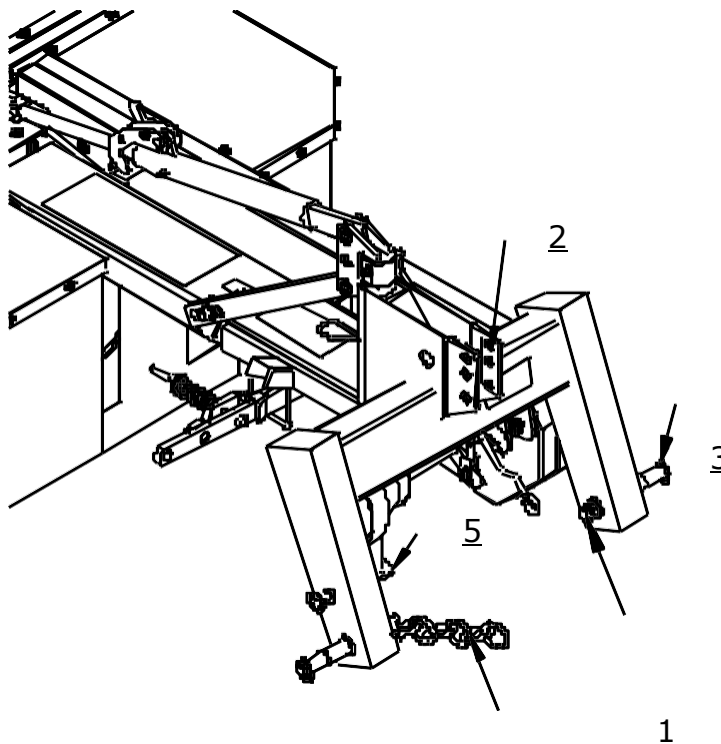


**WARNING** using a different than recommended tractor for the mower (e.g. of a lower pulling power) or ones that are not equipped with the required front axle weights may cause loss of the steering control of the tractor's front wheels

### Connecting the Mower with the Tractor:

The mower should be connected to the tractor using the three-point suspension system. The mower should be in the transport position.

1. Bottom pin of the suspension frame
2. Holes in the suspension yoke
3. Plug
4. Chain
5. Support



Please be careful while connecting the machine with the tractor.



## IT IS UNACCEPTABLE



- for any persons to be present between the machine and the tractor while backing up to the machine
- to connect the machine while the tractor's engine is on and the key is in the ignition • to use parts to secure connections other than recommended by the machine or tractor manufacturers.

In order to connect the mower to the tractor:

1. Insert the bottom push rods of the tractor (Drawing nr. 4, point 1) in the suspension frame pins (first the left one, then the right one) and secure them with cotter pins (Drawing # 4, point 3).
2. Slide the end of the upper connector between the yoke plates using the holes, then connect it with a bolt and secure it with a cotter pin.
3. Lift the mower to relieve the support (Drawing # 4, point 5)
4. Lift the support and support it with a cotter pin.
5. Tighten the chain (Drawing # 4, point 4) that's limiting the side tilting of the tractor's suspension system.

### Assembly of the PTO Shaft

The drum mower should be equipped with an efficient PTO shaft with a guard, safety sign or the CE marking as well as the technical specifications in accordance with the technical guidelines.

Using a PTO shaft with parameters different than those recommended by the manufacturer of the machine may overload the shaft, damage it or result in pulling both parts apart while lifting the machine and so create hazard for the operators and the environment.

While assembling the PTO shaft, you should make sure, that the external pipe of the cover is on the side of the tractor.

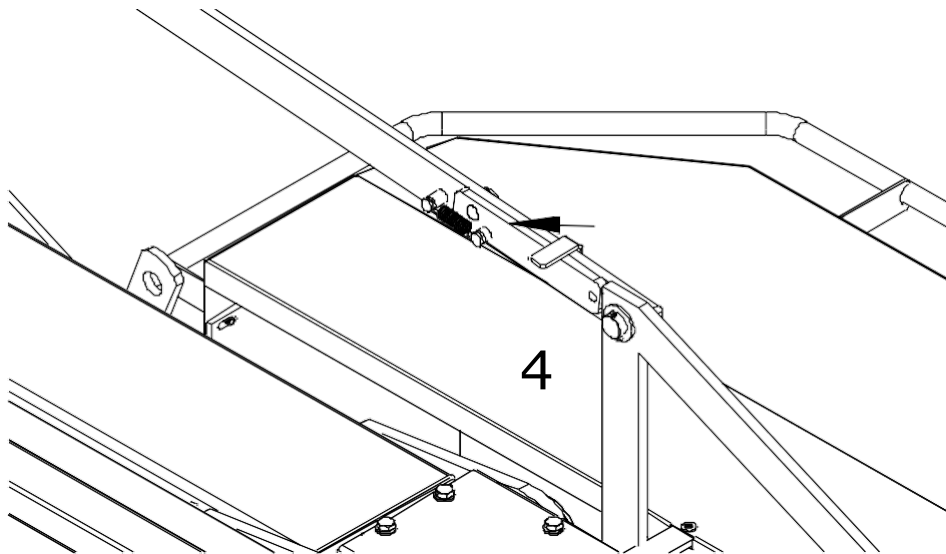
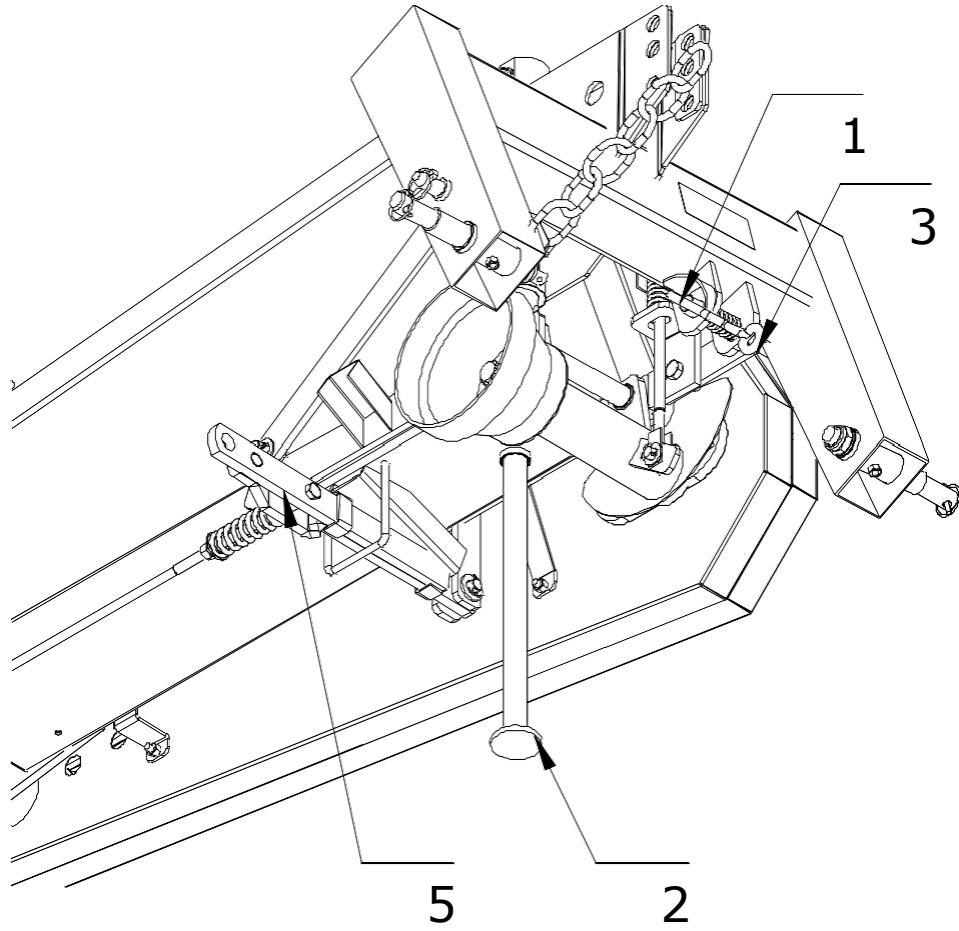


In order to install the shaft:

- Lower the mower down to the ground, turn off the engine and take out the key from the ignition.
- Insert the female tube end yoke to the power input of the machine and the power take-off of the tractor and secure it from sliding out with rivets.
- Check whether the rivets secure the ends of the shaft from sliding out during operation.
- Install the chains of the shaft cover; one to the cover of the tractor's power take-off, and the other to the cover of the machine's power input.

**WARNING** using a damaged PTO shaft, without the cover or a damaged cover, and without the additional cover on the side of the tractor's power take-off and the machine's power input creates immediate hazard of an accident.

**Adjusting the Mower to the Transport Position and Transport:**



Be careful while changing the mower's position from the transport position to the operating position and the other way around.



**It is prohibited to reposition the mower:**

- On an uneven surface and in a visible slope area.
- When it is lifted high (as in the transport position), and when the suspension frame of the mower is not appropriately level.
- In the presence of bystanders within the mower's turning range.
- Failure to comply with these recommendations may result in risks associated with rapid and automatic rotation of the mower on the suspension. Such rotation may occur after the securing elements pull free (point 1 rivets, point 4 gears)

In order to change the position of the mower to the transport position, the following must be done:

- Set the unit (the mower and the tractor) on an even and horizontal surface.
- Lower the mower so the stump jumpers rest on the ground.
- Disengage the PTO, the tractor's engine, and take out the key from the ignition and allow for the mower's elements to come to a complete stop.
- Disassemble the PTO shaft.
- Level the mower with the right lift arm brace so the suspension frame pins are on the same level above the ground.
- Remove the fuse (Position 5 in the drawing on the previous page) from the bottom suspension frame pin.
- In the mowers with the push rod system (Position 4 in the drawing on the previous page) move the gear to the lower position.
- Lift the mower with the tractor's hydraulic lifting unit so the stump jumpers are just above the ground.
- Lift the support (Position 2 in the drawing on the previous page) to the upper level and secure it with a cotter pin
- Move the mower by hand all the way back along the tractor making sure that the king pin of the lock (Position 1 on the previous page) goes into the king pin opening (Position 3 on the previous page) with a loose line.
- Lift the mower with the hydraulic system to the vertical position then move the lever of the ball valve mounted on the actuator into the locked position.

During the transport:

Lift the mower with the hydraulic lifting unit to the upper position to ensure the space between the stump jumper of the cutting drum and the ground of at least 40cm, tighten the side chains of the tractor's bottom push rods so the machine doesn't swing to the sides.

Always make sure that the ball valve is locked during transport.

Furthermore:

- Check the securing elements
- Install the warning plate with lights and the plate for slow-moving vehicles.
- Pay attention to the mower overlap over the tractor during the turns or relapses.

## Adjusting the Mower to the Operational Position

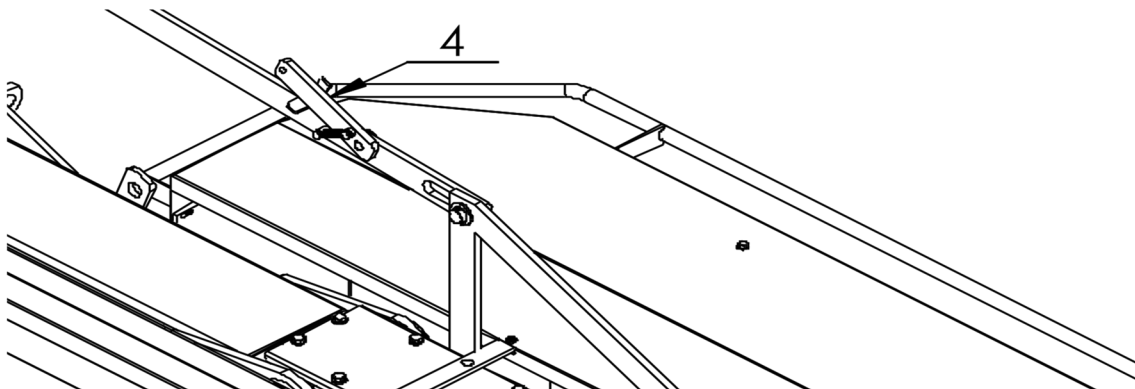
Reposition the mower from the transport position to the operating position prior to starting the operation. In order to do that, the following must be done:

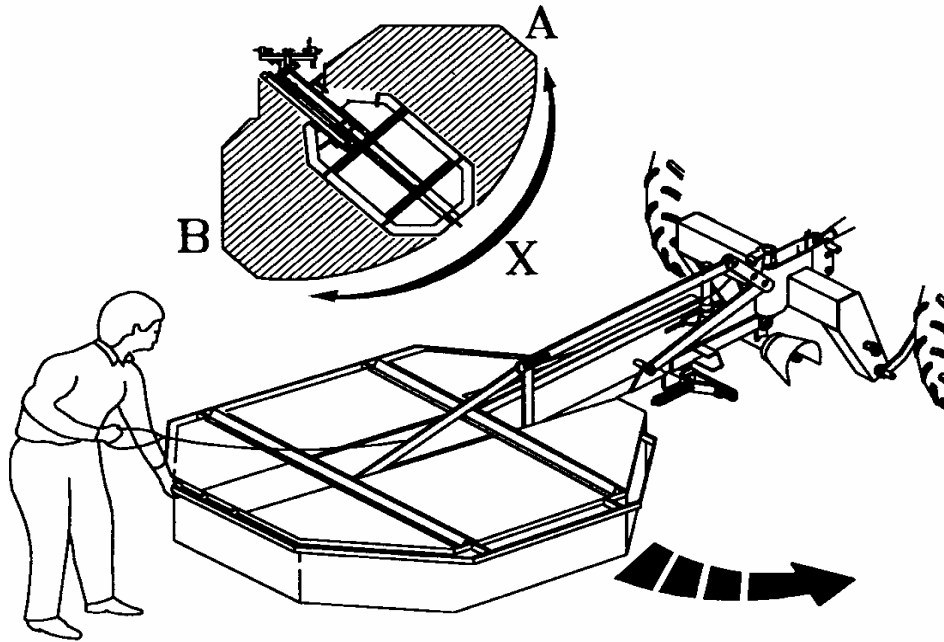
- Place the mower and the tractor on an even, horizontal surface.
- On a mower with hydraulics installed move the ball valve lever to the open position. Then lower the mower to the horizontal position. The mower should stay in that position throughout the entire time of operating the mower. Be extra careful when lowering the mower from the vertical to the horizontal position. Be sure the area is clean and free from obstructions.
- On the mower without hydraulics (i.e. a manual system), the lever should be moved to the upper position (Position 4 in the drawing below), and then lower the mower to just above the ground.
- Stand behind the machine (shown in the top drawing on the following page in the X spot) and pull the line causing the latch to slide out (Position 1 in the bottom drawing on the following page) from the opening (Position 3), take the mower by the cutting system's cover and turn it to the operating position.
- Put the fuse in (Position 1) the upper suspension frame pin (Position 2) and secure it with a cotter (Position 3).

Proper positioning of the mower in the operating position ensures a safe and high quality and efficiency operation.

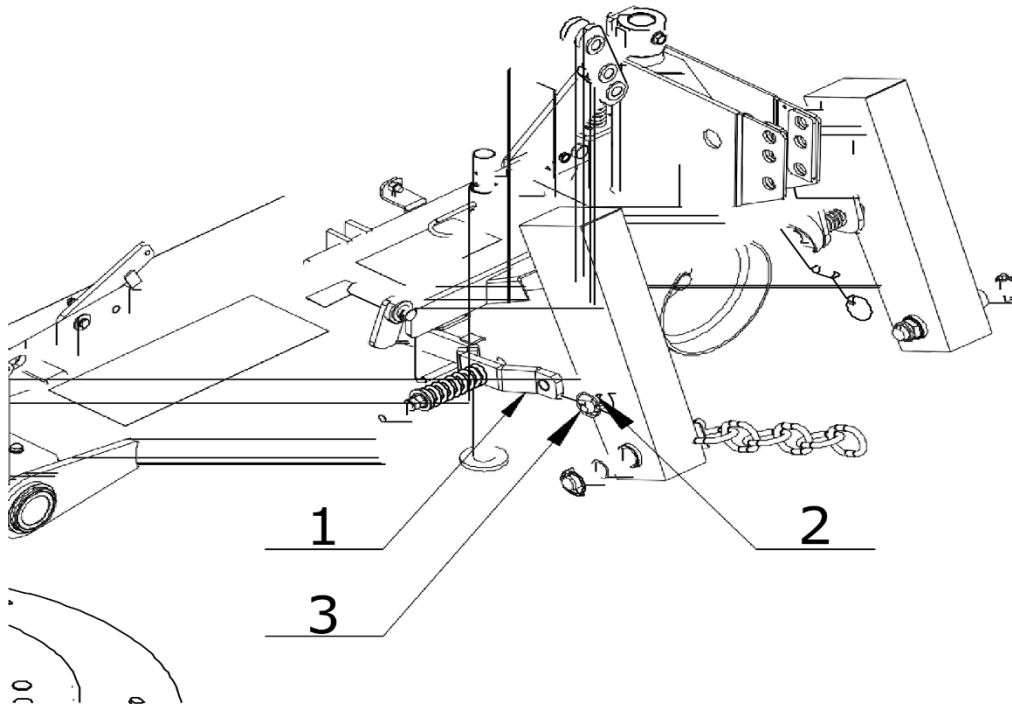
The PTO shaft may be connected to the tractor only during the time of the mower's operation, but during transport or maintenance works it should be disassembled.

## Lever's Operating Position





**Changing the mower's position from the transport position to the operating position and the other way back.**

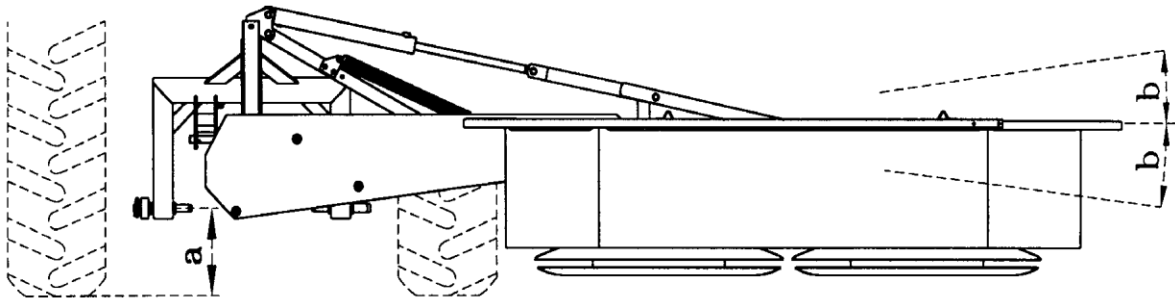


**Changing the mower's position to the operating position**

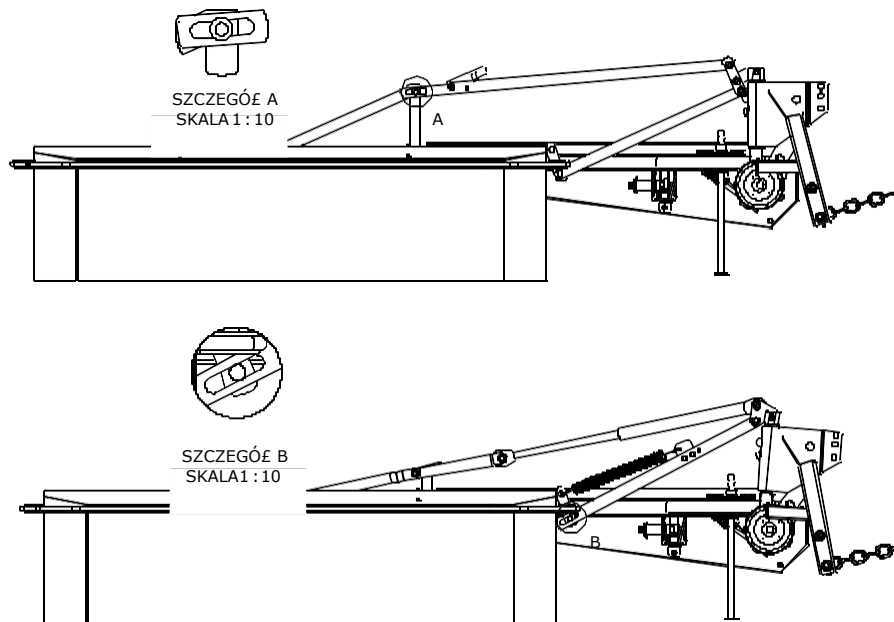
## Adjusting the Mower

### Determining the length of the upper connector.

After repositioning the mower to the operating position, the stump jumpers should be positioned parallel to the ground and the suspension frame should be positioned at such a height so the distance “a” is about 11 inches and the pin is in the middle of the longitudinal opening of the push rod (Drawing 2). Adjustments should be made with the help of the upper connector and the tractor’s right lift arm brace. In order to ensure the proper operation for the mower, the suspension frame should be supported by a chain connected with the clevis fastener or its bracket.

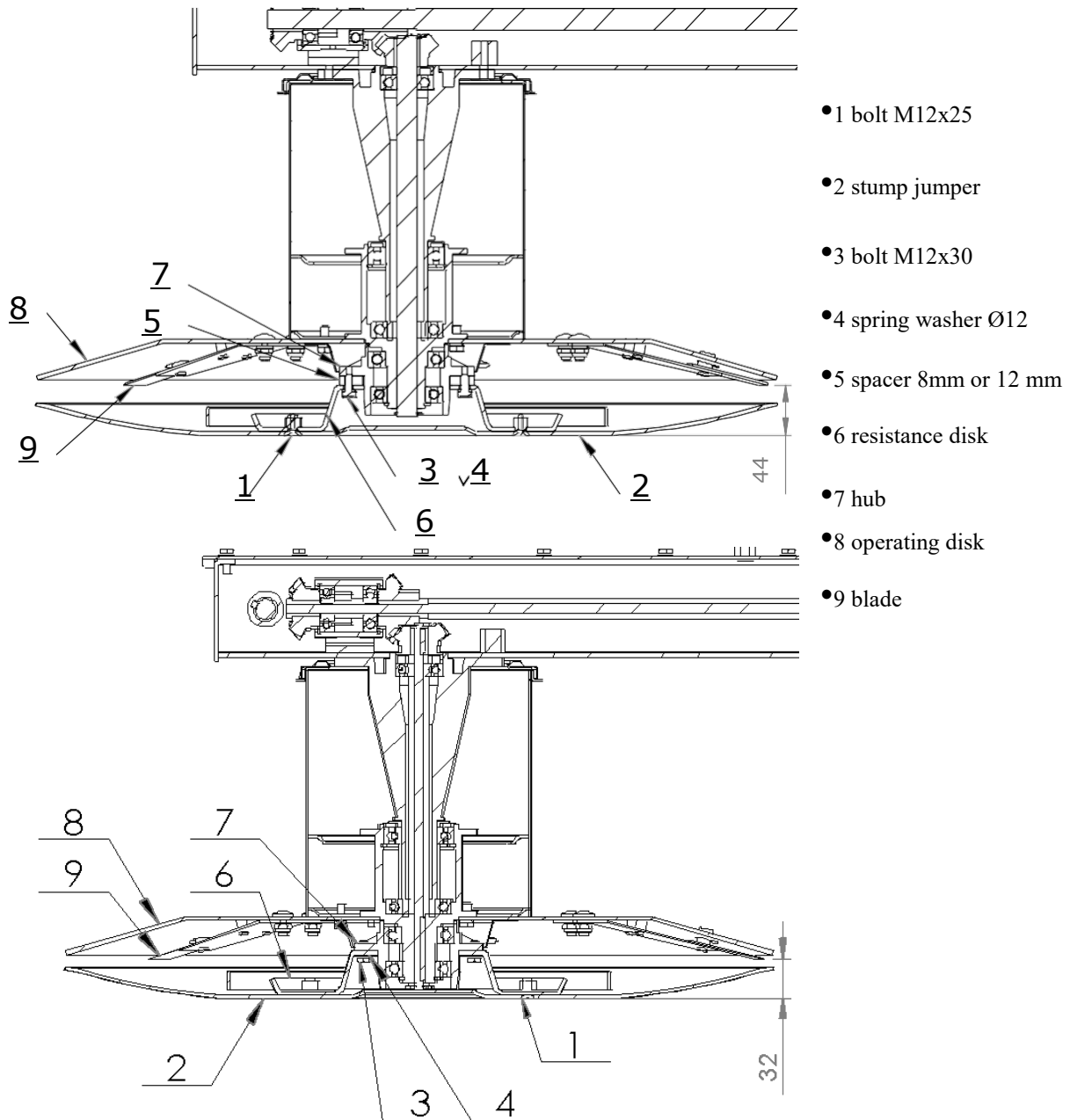


**Drawing 1: The proper operating mode of the mower.**



**Drawing 2: The proper alignment of the cotter pin on the engagement rod.**

The mower may be positioned at any cut height 32 mm (low), 40 mm, or 44 mm (high). The mower is set to the middle height of cut. A spacer ring (Position 3 in Drawing 3) may be used to adjust it, which is installed on the operating drums between the stump jumper’s hub (Position 7 in Drawing 3) and the resistance disk (Position 6 in Drawing 3).



**Drawing 3: Adjusting the height of cut.**

In order to change the height of cut from 40mm to 44mm, the 8mm spacer ring should be substituted with a 12mm spacer, and in order to achieve the 32 mm height of cut, the spacer ring should be disassembled.

To make height adjustment the following must be done:

1. Position the mower to the transport position and lift it to the upper position.
2. Set the tractor's handbrake and disengage the tractor's engine.
3. Secure the mower from falling with a chain and an additional support placed under one of the stump jumper disks.
4. Unscrew the bolts M12x25 (Position 1 in Drawing 3) and disassemble the stump jumper (Position 2 in Drawing 3).
5. Unscrew the resistance disc bolts (Position 3 in Drawing 3) M12x30 and take it off.
6. Adjust the cut height and assemble it in the reversed order.
7. Perform the adjustment in the other stump jumper disc repositioning the support.

## Operating the Mower

The fields and meadows to be mowed should be free from any obstructions and debris, which may damage the mower.

The shields of the mower must be positioned downwards during operating of the machine. The mower's drive should be turned on slowly and after reaching 540 RPM of the power take-off, the operation may be started. The speed should be adjusted to the terrain conditions and the type of grass to be mowed. For the time of idle drive, the drive of the mower should be turned off and then the mower should be lifted upwards.

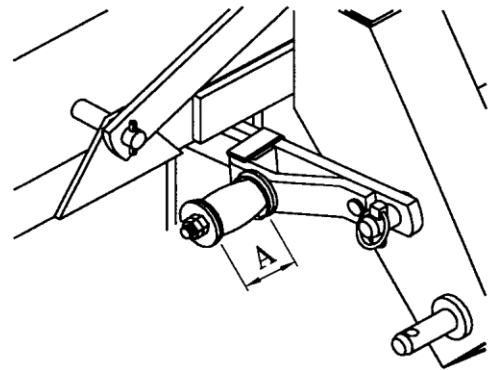
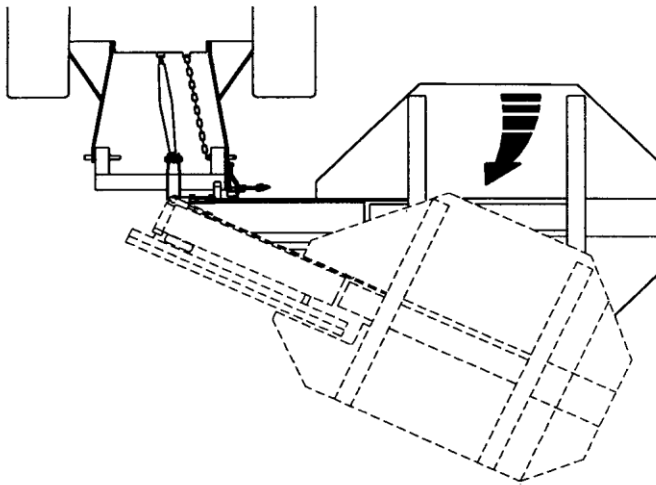
The mower shouldn't be used on uneven ground and fields full of stones because of the risk of damaging the blades, blade holders, and other mower parts, in addition to the damage that may be done from objects being thrown out from under the deck (stones, broken blades, etc.).

**WARNING** The operating drums and the blades still rotate for a certain amount of time even after the power take-off drive is turned off. Prior to making any adjustments on the mower, turn off the drive and the engine of the tractor, pull out the key from the ignition, and allow for the operating drums and the blades to come to a complete stop.



**WARNING:** It is prohibited to: Operate the mower in the presence of bystanders within an area less than 165 ft.

In case the mower hits an obstacle, the fuse allows for the cutting system to tilt. The tractor then should be halted and the drive should be turned off. The fuse gets back in when the tractor is moved back a bit. The length of the A fuse's tighten spring should be 160mm. If it is too tight, it may block the fuse and damage the mower when it hits an obstacle



**Securing the mower after driving into an obstacle.**

**ATTENTION: Because of the possibility to damage the mower, NEVER:**

- exceed the tractor's PTO 600 RPM
- lift the mower while the drive is engaged and the drums are rotating
- mow while backing up (*this will cause machine failure!*)



## Resting Position

The mower in the resting position is completely separated from the tractor's suspension system. The mower is repositioned from the transport position to the resting position.

The following should be done for that purpose:

- With the three-point suspension system, the support of the mower should be lowered and secured with a cotter.
- Lower the mower and rest it on the stump jumper discs and the support.
- Disengage the engine and pull out the key from the ignition and set the brakes.
- Disconnect the pivotal end of the tractor's upper connector from the suspension frame yoke.
- Take down the tractor's push rod ball joint from the suspension frame pins.

## TECHNICAL MAINTENANCE OF THE MOWER

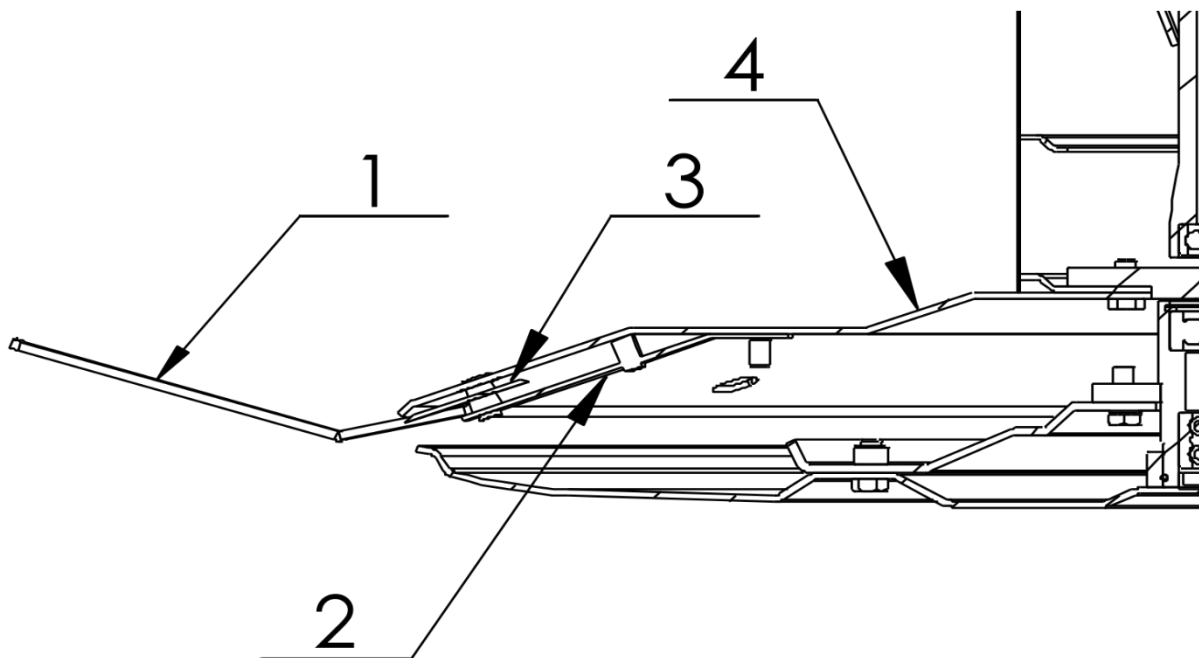
### Changing the Blades

In order to install or disassemble the blades on the operating disc, a special blade changing tool should be used, which is included in the basic equipment of the mower.



Due to the sharp edges of the blades, protective gloves should be used in disassembling the blades.

### Changing the blades



Installing the blades:

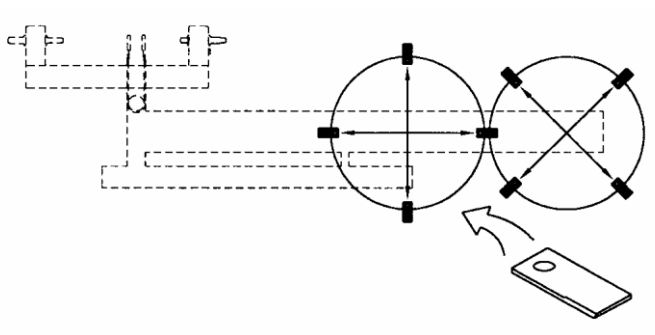
- The blade should be lifted (Position 3 in the drawing above)
- The wrench key (Position 1 in the drawing above) should be inserted in the space between the operating disc the holder of the blade (Position 2 in the drawing above).
- Tilt the blade holder down so its pin slides out of the disc's socket lifting the wrench key up. • Put the blade onto the pin of the holder, making sure that the pin of the holder is in the disc's opening.



**IMPORTANT** The holder's pin should be in the middle of the disc's opening in order to properly install the blades. Failure to properly install the blades may result in serious hazard to the operator and the bystanders.

**WARNING** In case any blades become damaged or worn out, it is vital to change the whole set of blades to new ones. If the blades are only worn on one side they may be reinstalled on the opposite disc since it rotates in the opposite direction, provided they are not damaged.

When changing the blade holders, special attention should be paid to their positional relationship between the individual discs.



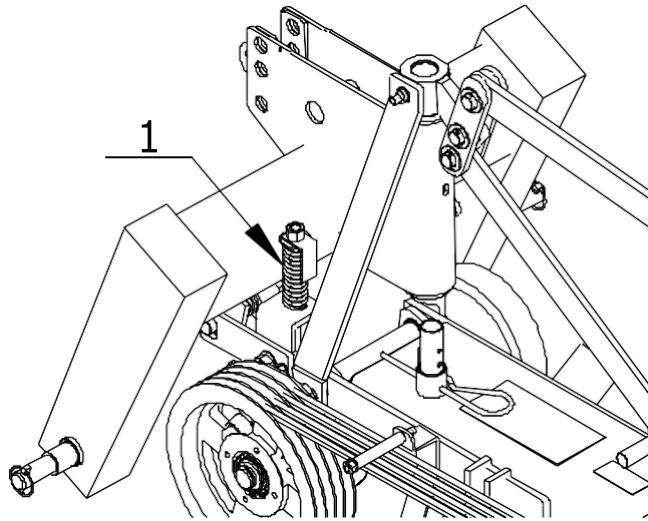
**Arrangement of the Blades:**

**NOTE:** *Only certified blades should be used.*



### V-Belt Tension

Check the condition of the V-belt of the transmission; the flexibility under the finger pressure shouldn't exceed 1 ¼". The V-belts are stretched with a spring tensioner (Position 1 in the drawing below). The adjustment should be made by rotating the bolt of the tensioner. The rotating should be done with a flat wrench key, turning it on the counter-nuts M16 which are on the bottom of the bolt. In case of damaging one V-belt, a whole set of V-belts should be replaced.



### **V-belt tension**

### **Everyday Maintenance**

Following operation, clean the mower from any plant residues or dirt and check its technical condition every day.

- Inspect the components and their connections.
- All loosened bolt connections should be tightened, and the worn out or damaged parts should be replaced with new original spare parts.
- Pay attention to the cutting system; the worn or damaged blades, holders should be replaced as whole sets to new ones.
- Check the tension of the V-belts
- Lubricate the mower and the PTO shaft in accordance with the lubricating instructions. See page 19.

### **Post-Season Maintenance**

When the operating season is over, the following must be done:

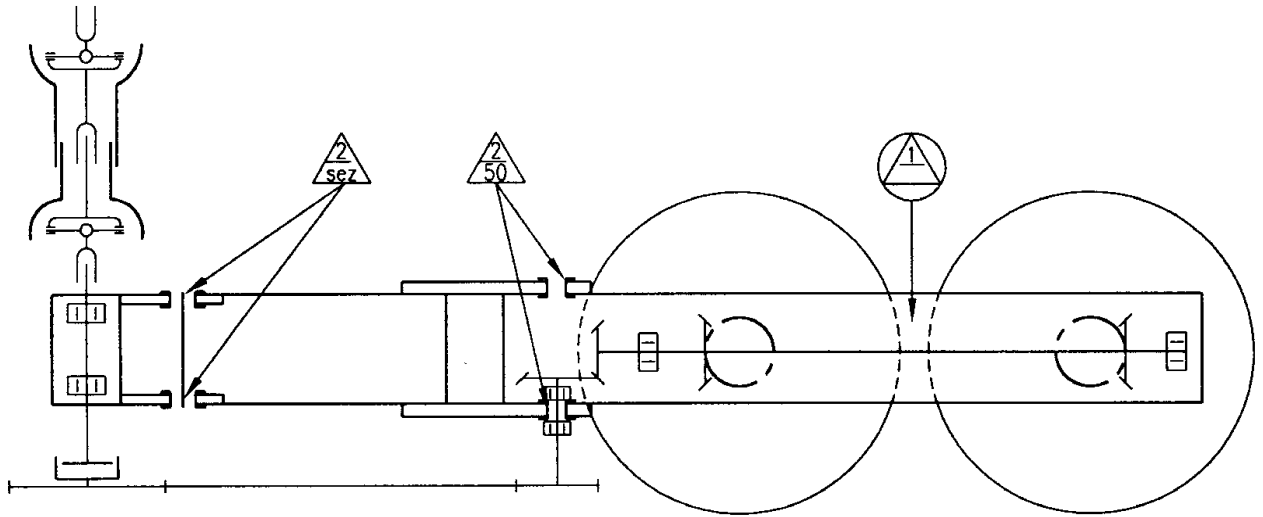
- Thoroughly wash the mower.
- Perform a detailed technical inspection of particular parts and components.
- The worn out or damaged parts should be replaced with new ones.
- Loosen up the V-belts.
- Perform post seasonal servicing on the mower
- Places with a damaged paint layer should be repainted.
- Secure the operational surfaces with worn paint layer with a corrosion protection product. • Change the transmission oil (main frame), lubricate the machine in accordance with the lubricating instructions.

### **Lubrication Instructions**

Perform the following maintenance activities:

Gear Box:

- Check the oil level every 10 hours with the help of a clean rod inserted in the vent opening. The level of the oil should be 20-30mm from the bottom of the gear box. In case the oil level is low, the cause of the leakage should be repaired, and then the oil should be filled to the required level. There should be 5 liters of oil in the gear box.



**The instructions for lubricating the mower.**

The greasing points indicated by triangles should be greased with a machine oil with the help of a lubricator.

The PTO shaft should be lubricated in accordance with the shaft manufacturer's requirements.



**REMEMBER:** The higher quality and viscosity 90 Wt. gear oil should be used or alternately 140 Wt. gear oil.

**Storing**

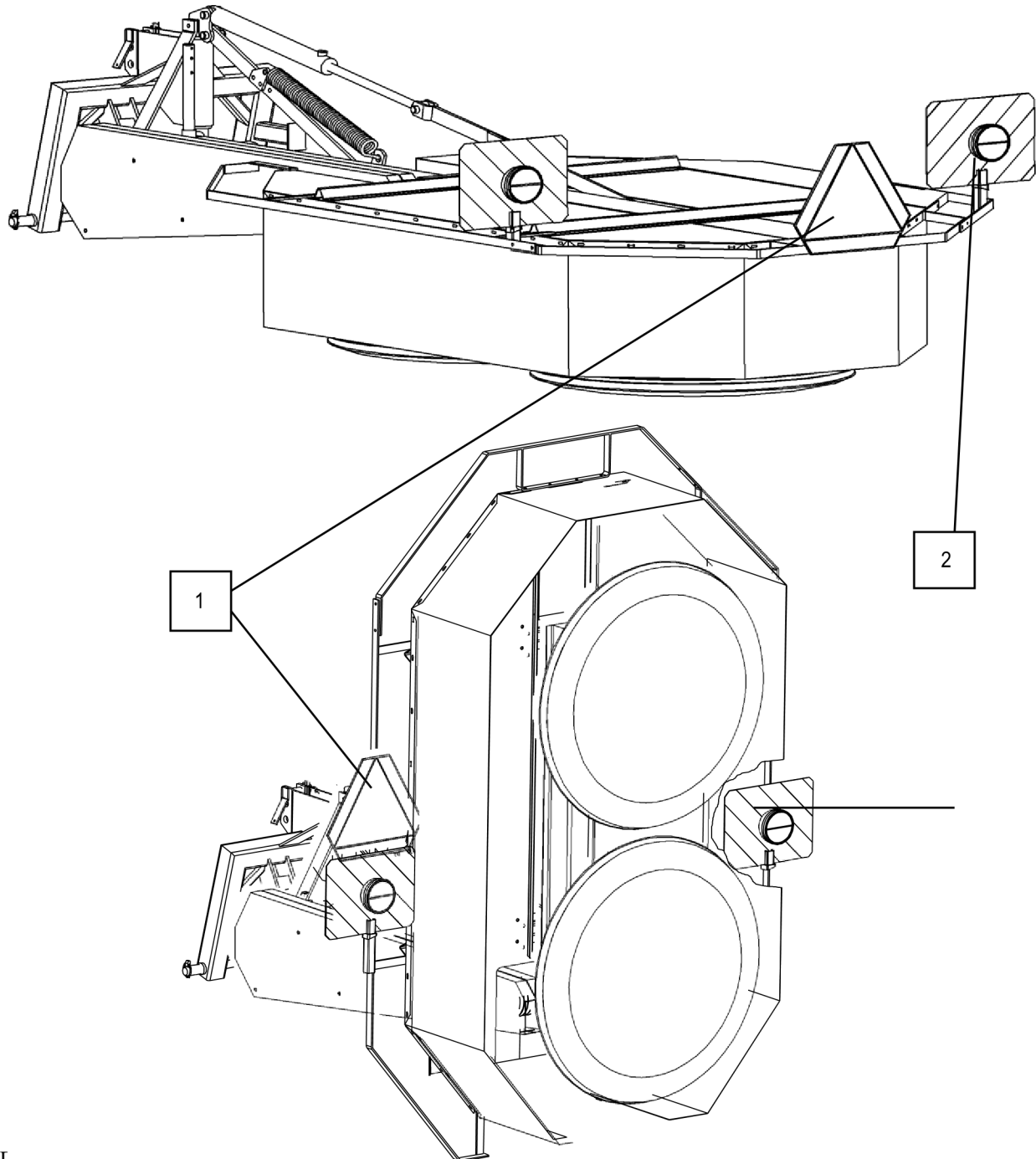
The mower should be stored in a dry, hardened surface and roofed place that is of limited accessibility to people and animals.

In case the mower is exposed to adverse weather conditions, it is necessary to perform maintenance and lubricating on the machine.

Check the stability of the mower after placing it in the storage place. Positioning the mower on a soft and uneven surface may be hazardous.

## Transport Lights

The mower should always be positioned horizontally or vertically in the driving direction (behind the tractor).



I

During transport, the machine must be equipped with the triangle safety sign (1) and a portable warning light device (2) consisting of two rectangular plates painted with white and red stripes, to which composite tubes are assembled with side position lights, stop lights and turn signals. During transport of the mower in an upright position, the shields cannot cover the warning lights. If so, the shields should be pressed closer to the upper metal covers and tied up with a twine in several places.

## Assembly of the Mower

The manufacturer delivers a mower with the cutting system's cover that is not assembled.

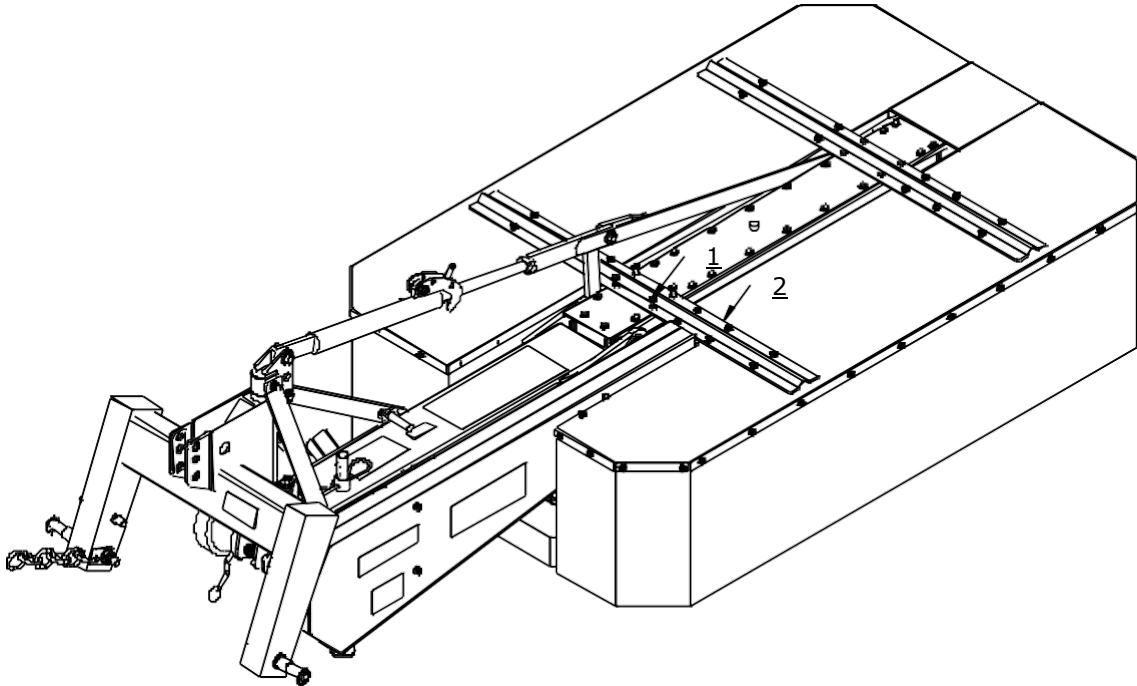
The responsibility to install the covers is on the side of the purchaser.



Operating the mower with the cutting system's cover not installed or damaged or with the shield lifted is hazardous to the operators and the environment.

The cover should be installed in the following way:

- Unscrew the bolts M10x25 (Position 1 of the drawing below).
- Screw in the brackets with the rest of the covers of the upper frame (Position 2 of the drawing below).



## Dismantling, Utilization, and the Methods of Utilization.



Protect your hands (body) from injuries and harmful effects of lubricants and oils. Use protective gloves and tools in good technical condition. The parts of the machine which may reposition or turn during the disassembling should be appropriately secured.

The worn out or damaged parts obtained during repairs (dismantling) should be stored in a separate place of limited access to people and animals. The worn parts should be taken to the recycle center. The worn items made of plastic material should be taken to a place for the disposal of chemicals.

Do not spill oil during the time of refilling or changing it. The used oil should be stored in tight containers and periodically deliver it to the oil disposal centers.



The abandoned parts of the machine or spilled oil may result in accidents and cause environmental pollution and violate the rules.

### Possible Damages and Troubleshooting

| PROBLEMS  | REASONS  | SOLUTIONS  |
|---|--|--|
| Increased vibrations of the mower   | Unevenly worn out or damaged elements of the cutting system                                    | The worn elements should be replaced with whole new sets.  |
| Bad cut and clogging of the cutting system  | Dull or damaged blades   | Dull or damaged blades should be replaced with whole sets of new blades.<br>Blades dull on one side should be installed on the disc with the opposite direction of rotation. |
| Sliding belts   | The belts need to be tightened.<br>Wet belts<br>Worn out belts<br>Belts with different lengths | Check and adjust the tension of the belts<br>Avoid mowing in rain.<br>Replace the belts with new sets of belts.<br>Use one brand of belts with the same dimensions.          |
| During a normal operation, the cutting system tilts to the back caused by the fuse. | The fuse spring may be damaged or need adjusted.   | Check and adjust the tension of the spring, replace if damaged.  |
|   | Uneven surface, e.g. hardened molehills  | Decrease the speed of driving, tilt the cutting system to the back.  |

# PARTS BREAKDOWN

*Models:*

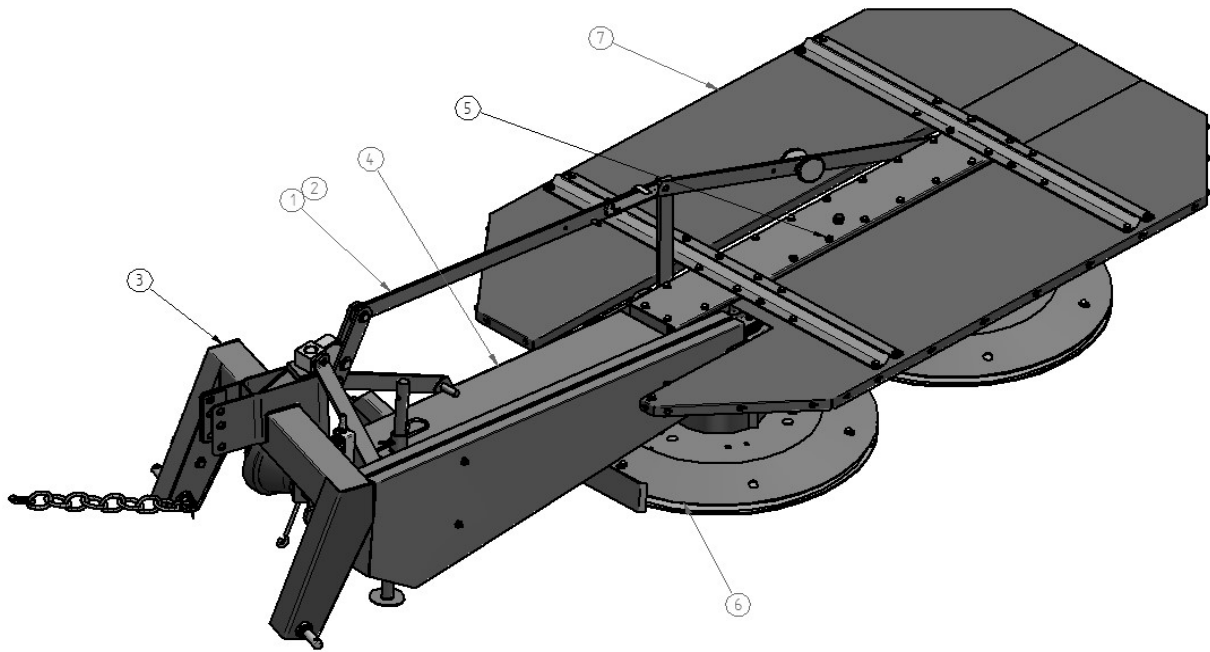
**BDR-135 BDR-165 BDR-185**



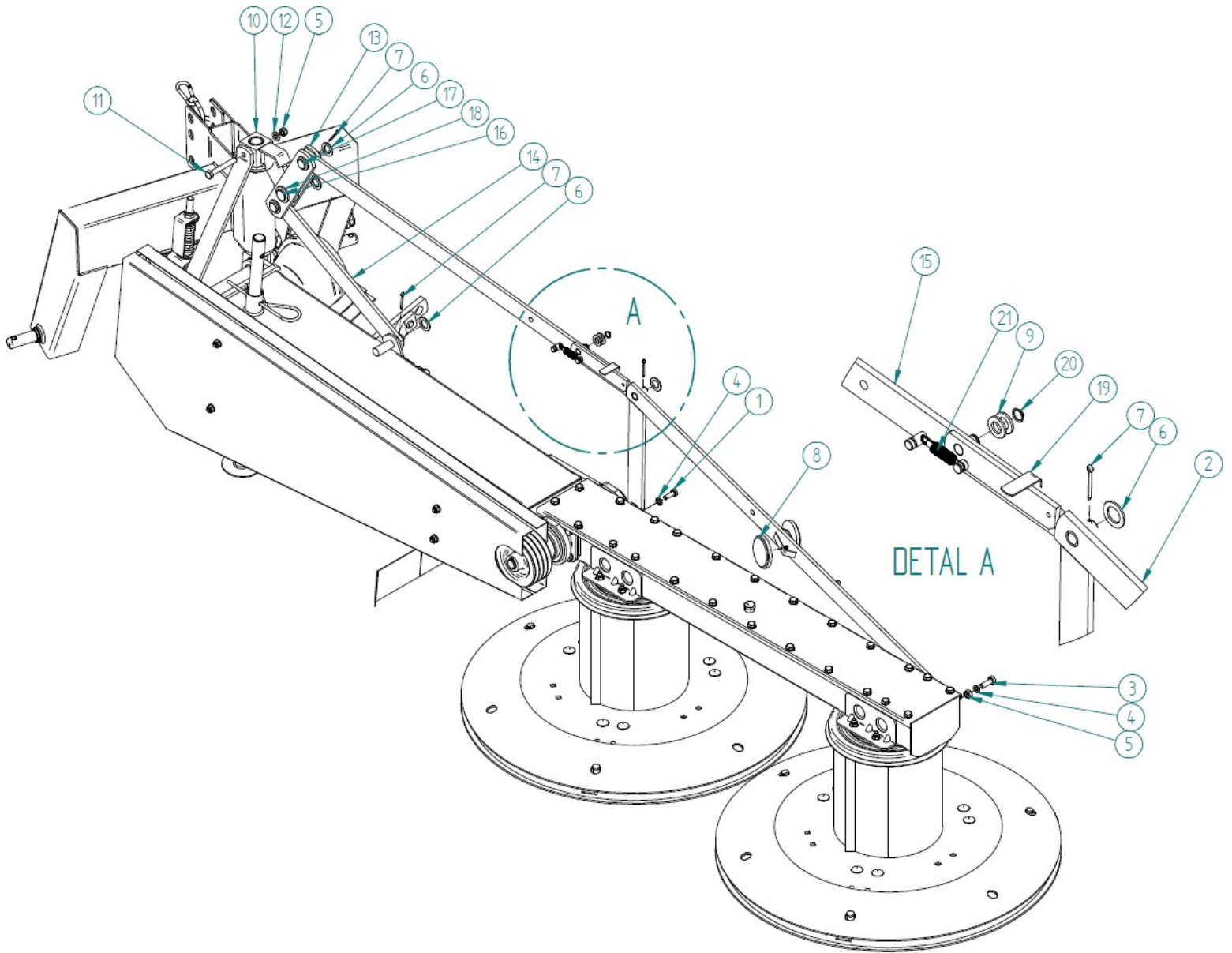


## GENERAL DESIGN

| Table No. 1 |                                   |                  |
|-------------|-----------------------------------|------------------|
| 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           |



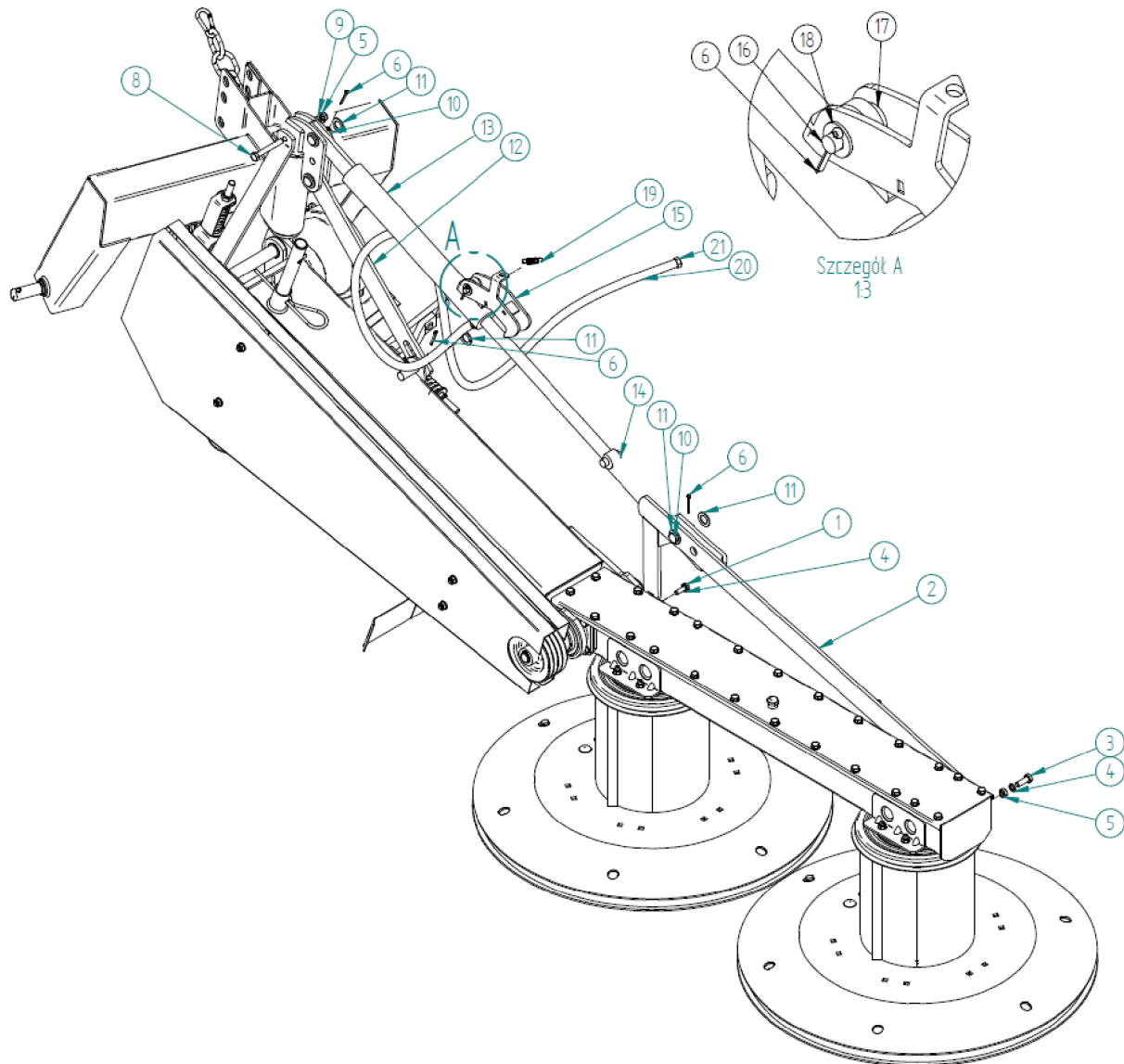
# STANDARD VERSION - WITH RODS



**TABLE No. 2**

| <b>No.</b> | <b>Name</b>                                  | <b>PART No</b> | <b>Part No.</b> | <b>Quantity/Mower type<br/>1.85m/1.65m/1.35m/1.35mini</b> |
|------------|--|----------------|-----------------|---|
| 1          | Bolt- M10 x 2.0 x 30 –8.8 (Galv)             | BM102030       | 11-0026         | 1   |
| 2          | Manual Rod                                   | DM10110        | 15-0303         | 1/0/0/0   |
|            | Manual Rod                                   | DM10235        | 15-0006         | 0/1/1/1   |
| 3          | Bolt- M12 x 1.75 x 35 - 8.8 (Galv)           | BM1217530      | 11-0096         | 1   |
| 4          | Lock Washer- 12M (Galv)                      | LW12           | 11-0054         | 2   |
| 5          | Self-locking Nut- M12                        | NM12175        | 11-0044         | 2   |
| 6          | Flat Washer- M12                             | DM82001        | 11-0093         | 6   |
| 7          | Cotter Pin- M5 x 40 Galv)                    | CP5X40         | 11-0104/A       | 5   |
| 8          | Orange Round Reflector                       | DM050031       | 05-0031         | 2   |
| 9          | Flat Washer- M16 (Galv)                      | FW16           | 11-0149         | 2   |
| 10         | Forged Head                                  | DM20083        | 15-0058         | 1   |
| 11         | Bolt- M12x 1.75 x 90 –8.8 Half Thread (Galv) | BM1217590      | 11-0012/A       | 1   |
| 12         | Flat Washer- M12                             | FW12           | 11-0125/A       | 1   |
| 13         | Rod Connector                                | DM20103        | 15-0060         | 2   |
| 14         | Diagonal Arm- A-beam                         | DM20096-85     | 15-0064         | 1   |
| 15         | Front Milled Rod                             | DM20070-85     | 15-0304         | 1/0/0/0   |
|            | Front Milled Rod                             | DM20070-65     | 15-0057         | 0/1/1/1   |
| 16         | Mower Pin- M25 x 55 (Galv)                   | DM83002        | 15-0073         | 1   |
| 17         | Mower Pin- M22 x 55 (Galv)                   | DM150074       | 15-0074         | 2   |
|            |  | FW25           |                 |   |
| 18         | Flat Washer- M25                             | FW25           | 11-0094         | 2   |
| 19         | Interlock set                                | DM20220        | 15-0063         | 1   |
| 20         | Snap Ring- External- M16                     | SRE-16         | 08-0113         | 1   |
| 21         | Interlock Spring (Galv)                      | DM20526        | 15-0065/A       | 1   |

## VERSION WITH A HYDRAULIC



# **NOTES**

**TABLE No. 3**

| <b>No.</b> | <b>Name</b>                                    |            | <b>Part no.</b> | <b>Quantity/Mower type<br/>1.85 Hyd./ 1.65 Hyd.</b> |
|------------|--|------------|-----------------|---|
| 1          | Bolt- M10 x 2.0 x 30 –8.8 (Galv)               | BM102030   | 11-0026         | 1   |
| 2          | Rod Assembly – Hydraulic                       | DMT0246    | 15-0303/A       | 1/0   |
|            | Rod Assembly – Hydraulic                       | DMT0246    | 15-0303/A       | 0/1   |
| 3          | Bolt- M12 x 1.75 x 35 –8.8 (Galv)              | BM1217530  | 11-0096         | 1   |
| 4          | M12 Lock Washer (Galv)                         | LW12       | 11-0054         | 2   |
| 5          | Self-locking Nut- M12                          | NM12175    | 11-0044         | 2   |
| 6          | Cotter Pin- M5 x 40                            | CP5X40     | 11-0104/A       | 5   |
| 7          | Hydraulic Head                                 | DM20083    | 15-0315         | 1   |
| 8          | Bolt- M12 x 1.75 x 90 - 8.8 Half Thread (Galv) | BM1217590  | 11-0012/A       | 1   |
| 9          | Flat Washer- M12 (Galv)                        | LW12       | 11-0125/A       | 1   |
| 10         | Mower Pin- M22 x 55                            | DM150074   | 15-0074         | 3   |
| 11         | Flat Washer- M22 (Galv)                        | DM82001    | 11-0093         | 7   |
| 12         | Diagonal Arm - A-beam                          | DM20096-85 | 15-0318         | 1   |
| 13         | Hydraulic Cylinder                             | DMT0246    | 15-0330         | 1, present as one part                              |
| 14         | Threaded lengthening pipe                      | DMT0246    | 15-0316/A       |   |
| 15         | Cylinder Closure                               | DM170054   | 17-0054         | 1   |
| 16         | Pin- 16H 9 x 40 1354H                          | DM15072A   | 15-0072/A       | 1   |
| 17         | N/A  | ---        | ---             | ---   |
| 18         | Flat Washer- M14                               | FW14       | 11-0171         | 1   |
| 19         | Interlock Spring                               | DM20526    | 15-0065/A       | 1   |
| 20         | Cable- P51/P52 M18x1,5/M16x1,5 2 SC L- 2500    | DM150331   | 15-0331         | 1   |
| 21         | Plug Hydraulic Valve- Euro M18 x 1.5           | DM130126   | 13-0126         | 1   |

# FRAME

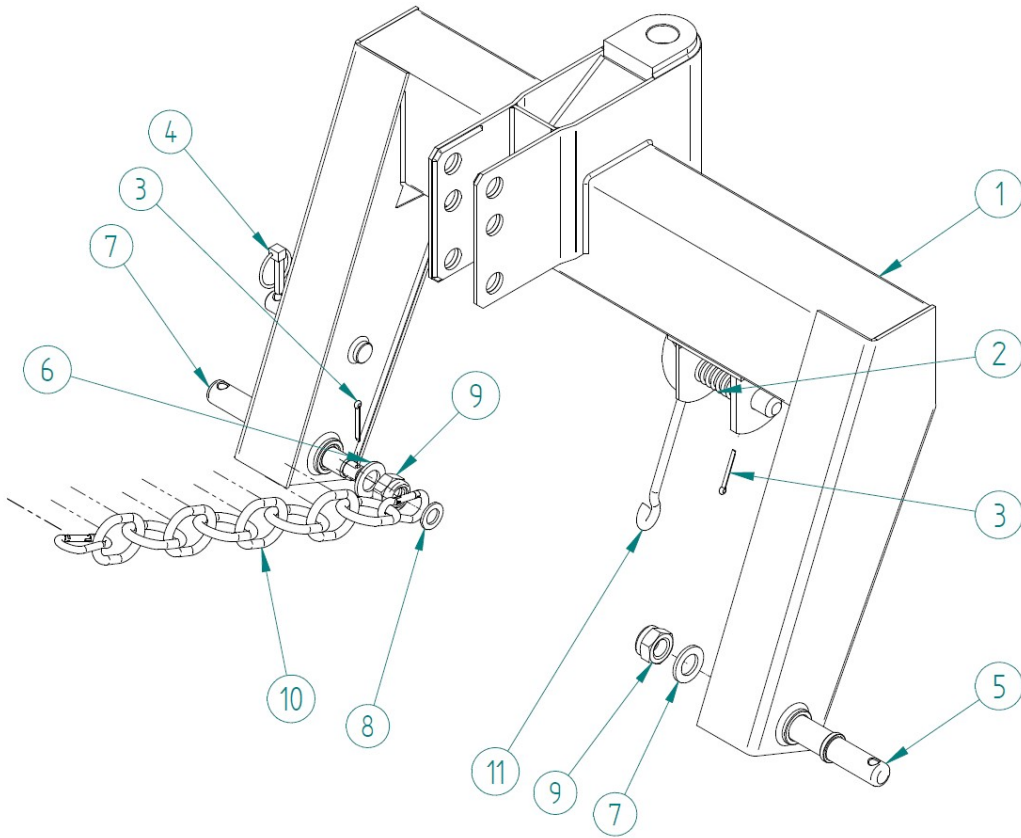


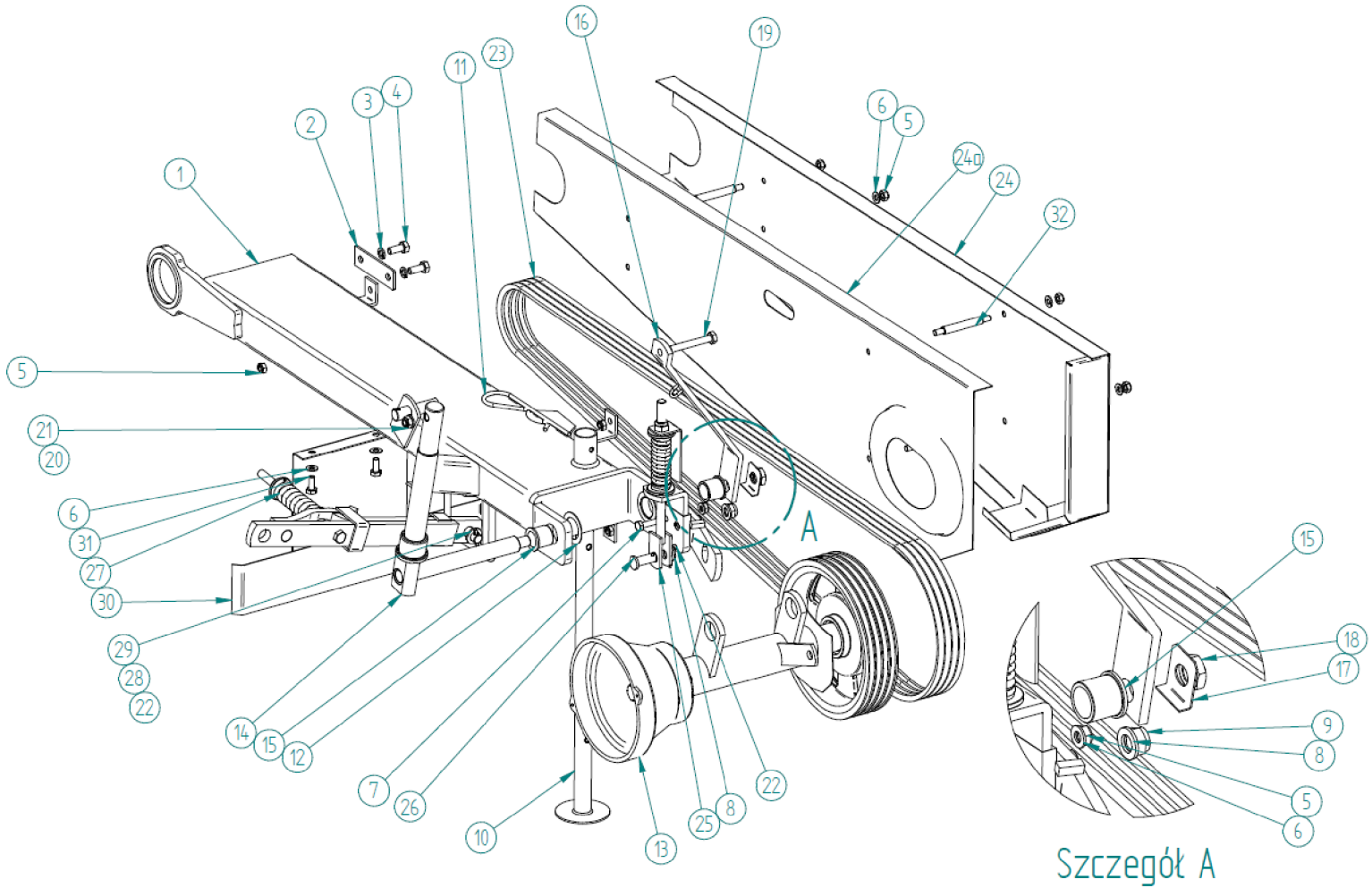
TABLE No.4

| No. | Name             |           | Part no.  | Quantity/Mower type |
|-----|------------------|-----------|-----------|---------------------|
|     |                  |           |           | 1.85m/1.65m/1.35m/  |
| 1   | A-Frame- BDR-185 | DM20892   | 15-0310   | 1/0/0/0             |
|     | A-Frame- BDR-165 | DM20646   | 15-0061   | 0/1/0/0             |
|     | A-Frame- BDR-135 | DMT0422/B | 15-0061/B | 0/0/1/0             |
|     | A-Frame- BDR-135 | DMT0422/A | 15-0061/A | 0/0/0/1             |

|    |  |         |           |         |
|----|--|---------|-----------|---------|
| 2  | Closure Spring (Galv)                                | DMT0404 | 01-0224   | 1/1/0/1 |
| 3  | Cotter Pin- M5 x40                                   | CP5x40  | 11-0104/A | 2/2/1/2 |
| 4  | Lynch Pin  | DMT0406 | 01-0686   | 1       |
| 5  | Lower 3 Point Hitch Pin- BDR-185 (Opt) Cat 2         | DM02056 | 22/0080/1 | 1/0/0/0 |
|    | Lower 3 Point Hitch Pin – BDR-135, 165               | DMT0402 | 22/0081/1 | 0/1/1/1 |
| 6  | Flat Washer- M24                                     | FW24    | 11-0094   | 2       |
| 7  | Lower 3 Point Hitch Pin- BDR-185, Cat 1 & 2          | DMT0408 | 22/0080/2 | 1/0/0/0 |
|    | Lower 3 Point Hitch Pin- BDR-135, 165 Cat 1 & 2      | DMT0402 | 22/0081/1 | 0/1/1/1 |
| 8  | Flat Washer- M18                                     | FW24    | 11-0091   | 1/0/0/0 |
| 9  | Nut- M24 x 1.5                                       | NM2415  | 11-0169/A | 2/2/2/2 |
|    | Self-locking Nut- M24 x1.5 for (Optional)<br>DM02056 | LN2415  | 11-0169/B | 0/0/0/0 |
| 10 | Chain  | DM20274 | 17-0003   | 1       |
| 11 | Suspension Frame Latch                               | DMT0403 |           | 1       |



# CENTRAL FRAME

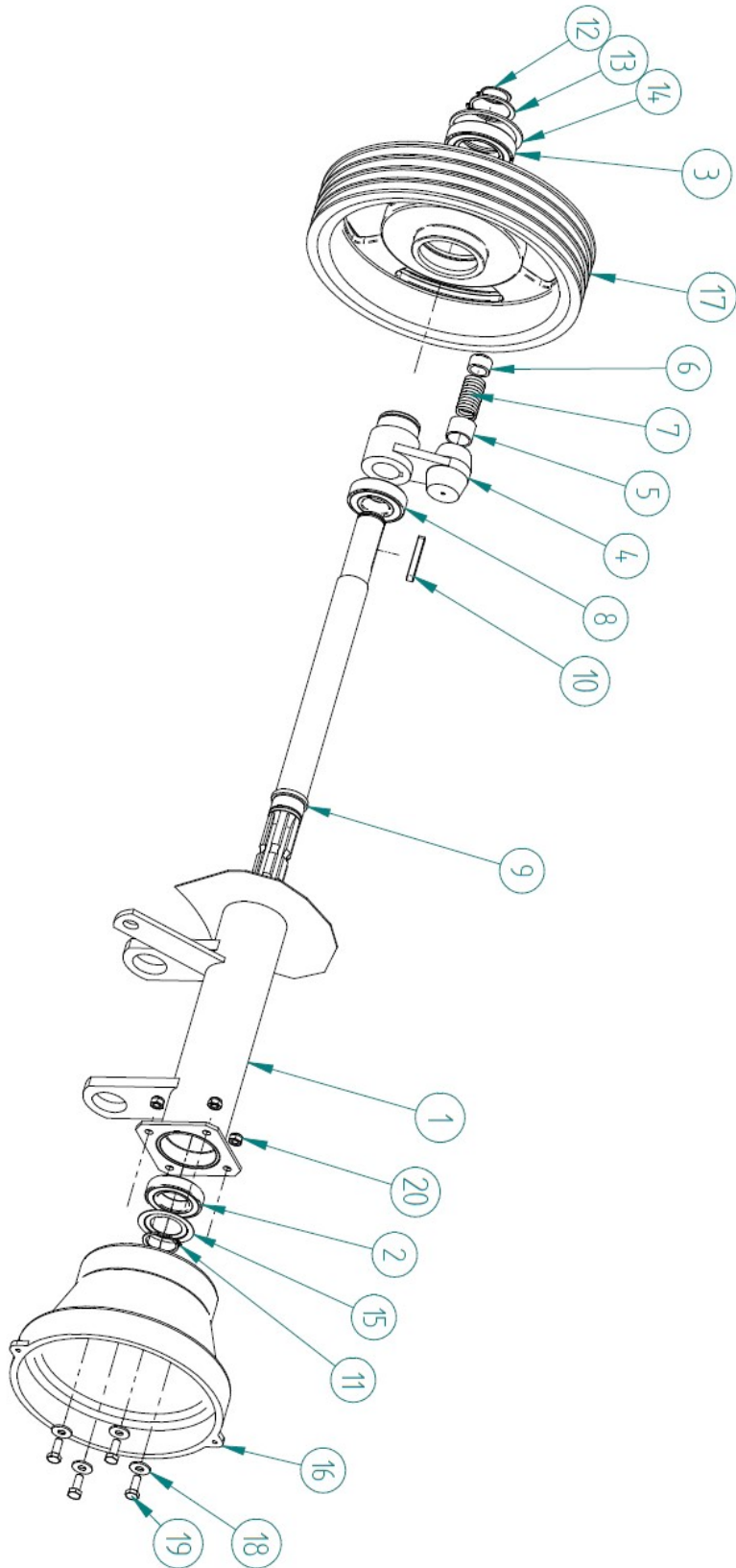


**TABLE No.5**

| No. | Name   |                          | Part no.             | Quantity/Mower type<br>1.85m/1.65m/1.35m/1.35mini |
|-----|--|--------------------------|----------------------|---|
| 1   | Central Beam BDR-185                               | DM20175-35               | 15-0305              | 1/0/0/0   |
|     | Central Beam BDR-165                               | DM20175-65               | 15-0013              | 0/1/0/0   |
|     | Central Beam BDR-135                               | DM20175-35               | 15-0013/A            | 0/0/1/0   |
|     | Central Beam BDR-135 Mini                          | DM20175-35               | 15-0013/B            | 0/0/0/1   |
| 2   | Rear Plate Cover                                   | DM150205                 | 15-0205              | 1   |
| 3   | Lock Washer- M12 (Galv)                            | LW12                     | 11-0054              | 2   |
| 4   | Bolt- M12 x 1.25 x 30 - 8.8 (Galv)                 | BM1212530                | 11-0077              | 2   |
| 5   | Self-locking Nut- M10 x 1.5                        | LN1015                   | 11-0127/A            | 5/4/4/5   |
| 6   | Flat Washer- M10                                   | FW10                     | 11-0055/A            | 3/2/2/3   |
| 7   | Bolt- M10 x 1.5 x 40 - 8.8 (Galv)                  | BM101540                 | 11-0074/B            | 1/0/0/0   |
| 8   | Flat Washer- M16 (Galv)                            | FW16                     | 11-0149              | 2/1/1/2   |
| 9   | Self-locking Nut- M16 x 2.0                        | LN1620                   | 11-0143/1            | 1/0/0/1   |
| 10  | Stand  | DM20760                  | 15-0075              | 1   |
| 11  | Large Spring R-clip                                | DM11024                  | 15-0069              | 1   |
| 12  | Spacer Washer- M40                                 | DM10057                  |                      | 2 or 3, as required                               |
| 13  | PTO Safety Guard                                   | DM21903                  | Fig. 13.2.4.2        | 1   |
| 14  | Angular Axis                                       | DM20131                  | 15-0062              | 1   |
| 15  | Axis Joint Bushing                                 | DM20389                  | 15-0066              | 2   |
| 16  | Yoke - Z-shaped                                    | DM20391-35<br>DM20391-65 | 15-0059<br>15-0059/A | 1   |
| 17  | Special Washer, Bendable- M20                      | DMSWM2017                |                      | 1   |
| 18  | Low Nut M20 x 1.5, (Galv)                          | NM2015                   | 11-0034/A            | 1   |
| 19  | Bolt- M12 x 1.75 x 90 - 8.8 (Galv)<br>Half- thread | BM1217590                | 11-0012/A            | 1   |
| 20  | Flat Washer- M12                                   | FW12                     | 11-0125/A            | 1   |
| 21  | Self-locking Nut- M12                              | LN12175                  | 11-0128/B            | 1   |
| 22  | Cotter Pin- M5 x 40 (Galv)                         | CP5X40                   | 11-0104/A            | 2   |
| 23  | SPA 3185 V-Belt                                    | SPA3185                  | 07-0119              | 4/0/0/0   |
|     | SPA 2932 V-Belt                                    | SPA2932                  | 07-0082              | 0/4/0/0   |
|     | SPA 2832 V-Belt                                    | SPA2832                  | 07-0128              | 0/0/3/0   |
| 24A | External 1.85m V-Belt guard                        | DM20251                  | 15-0312              | 1/0/0/0   |
| 24A | Internal 1.85m V-Belt guard                        | DM20162                  |                      |   |
| 24B | External 1.65m V-Belt Guard                        | DM20157                  | 15-0092              | 0/1/0/0   |
| 24B | Internal 1.65m V-Belt Guard                        | DM20144                  |                      |   |
| 24C | External V-Belt Guard BDR-135, 135 Mini            | DMT0215                  | 15-0092/B            | 0/0/1/1   |
| 24C | Internal V-Belt Guard BDR-135, 135 Mini            | DMT0211                  |                      |   |
| 25  | V-Belt Tensioner                                   | DM20246                  | Fig. 13.2.4.3        | 1   |
| 26  | Mower Pin- M16 (Galv)                              | DM83002                  | 15-0072              | 1   |
| 27  | Safety Release                                     | DM90290                  | Fig. 13.2.4.4        | 1   |

|    |   |                               |         |   |
|----|---|-------------------------------|---------|---|
| 28 | Mower Pin- M18 x 65 (Galv)                | DMT0234                       | 15-0071 | 1 |
| 29 | Flat Washer- M18 (Galv)                   | FW24000                       | 11-0091 | 1 |
| 30 | Front Cover                               | DMT0813<br>DM30101<br>DM30039 | 15-0104 | 1 |
| 31 | Bolt- M10 x 1.5 x 25 - 8.8 (Galv)         | BM101525                      | 11-0075 | 2 |
| 32 | Bolt Stud (Connector Bolt)- M10 x14 x 120 | DM150051                      | 15-0051 | 4 |

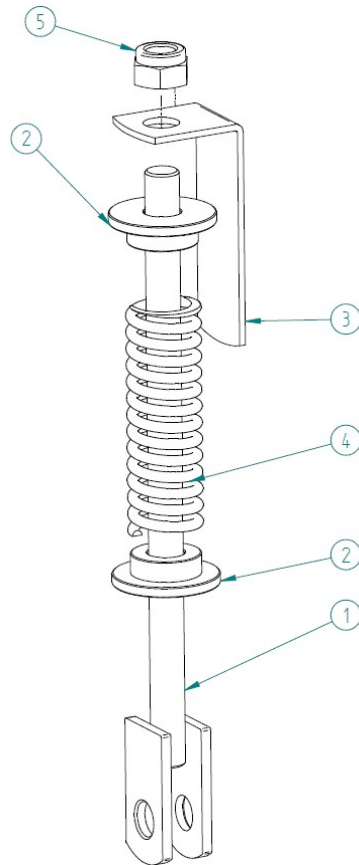
# HEAD PIPE



**TABLE No. 6**

| No. | Name                             |           | Part no.  | Quantity/Mower type        |
|-----|----------------------------------|-----------|-----------|----------------------------|
|     |                                  |           |           | 1.85m/1.65m/1.35m/1.35mini |
| 1   | Drive Head                       | DM20513   | 15-0080   | 1                          |
| 2   | Bearing- 6007 ZZ                 | B6007ZZ   | 06-0222/A | 1                          |
| 3   | Bearing- 6009-2RS                | B60092RS  | 06-0221/A | 1                          |
| 4   | Carrier                          | DM20172   | 15-0040   | 1                          |
| 5   | Carrier Bushing                  | DM20205   | 15-0068   | 1                          |
| 6   | Carrier King Pin                 | DM20198   | 15-0042   | 1                          |
| 7   | Clutch Spring                    | DM20218   | 15-0043   |                            |
| 8   | Bearing- 6206 ZZ                 | B6206ZZ   | 06-0224/A | 1                          |
| 9   | Drive Shaft                      | DM20602   | 15-0053   | 1                          |
| 10  | Parallel Key- M8 x 7 x 56        | KM080756  | 15-0054   | 1                          |
| 11  | Snap Ring- External- M35         | SRE-35    | 08-0119   | 1                          |
| 12  | Snap Ring- External- M30         | DMT0214   | 08-0118   | 1                          |
| 13  | Snap Ring- External- M45         | SRE-45    | 08-0120   | 1                          |
| 14  | Snap Ring- Internal- M75         | DMT0245   | 08-0130   | 1                          |
| 15  | Securing Ring                    | DM20615   | 15-0096   | 1                          |
| 16  | PTO Safety Guard                 | DM21903   | 15-0107   | 1                          |
| 17  | Large Pulley                     | DM20452   | 15-0041   | 1/1/0/0                    |
|     | Large Pulley                     | DM20452   | 15-0041/A | 0/0/1/1                    |
| 18  | Large Flat Washer- M8            | LFW08     | 11-0053   | 4                          |
| 19  | Bolt- M8 x 1.25 x 20 –8.8 (Galv) | BM0812520 | 11-0187/A | 4                          |
| 20  | Self-locking Nut- M8 x 1.25      | LNLM08125 | 11-0126/1 | 4                          |

# V-BELT TENSIONER



**TABLE NO. 7**

| No. | Name                        | Part no.         | Quantity/Mower type        |  |
|-----|-----------------------------|------------------|----------------------------|--|
|     |                             |                  | 1.85m/1.65m/1.35m/1.35mini |  |
| 1   | Tensioner rod               | DM20246 15-0044  | 1                          |  |
| 2   | Tensioner Spring Saddle     | DM020307 28-0040 | 2                          |  |
| 3   | Angle bar                   | DM20409 22/1235  | 1                          |  |
| 4   | Tensioner spring (Galv)     | DM20241 15-0048  | 1                          |  |
| 5   | Self-locking Nut- M16 x 2.0 | NM1620 11-0143/1 | 1                          |  |

# SAFETY DEVICE

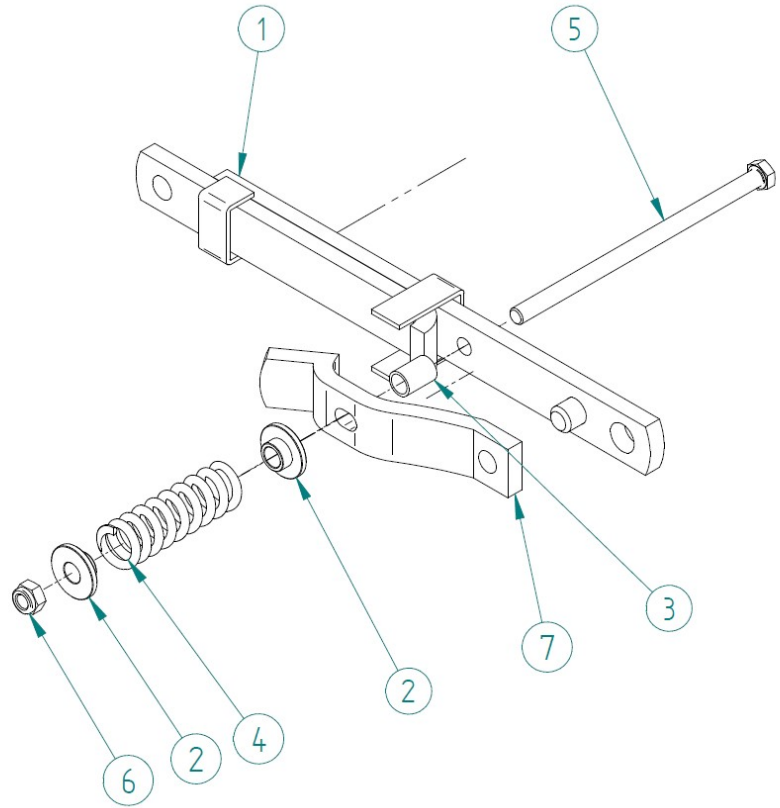
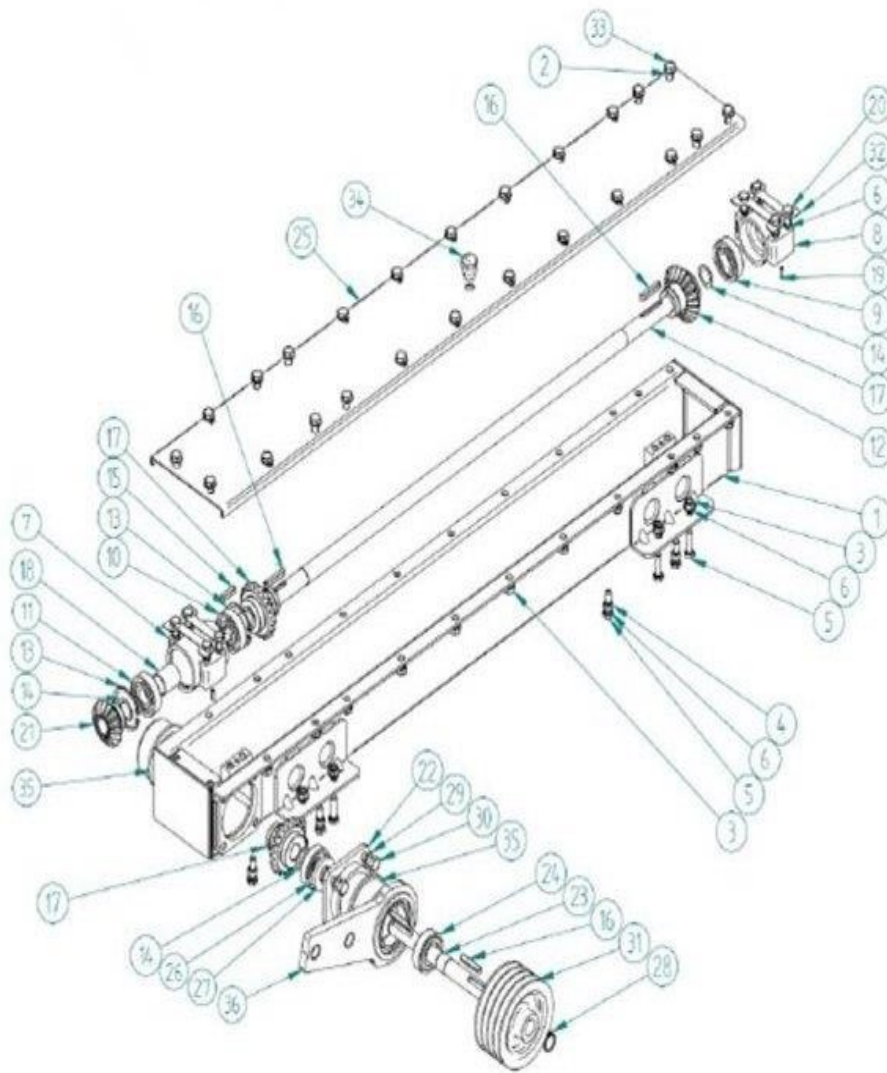


TABLE NO. 8

| No. | Name                 | Part no.  | Quantity/Mower type |   |
|-----|----------------------|-----------|---------------------|---|
|     |                      |           | 1.85m/1.65m/1.35m/  |   |
| 1   | Lower Sliding Bar    | DM20290   | 15-0045             | 1 |
|     | Upper Sliding Bar    | DM20291   | 15-0045             |   |
| 2   | Spring Saddle        | DM20307   | 28-0040/A           | 2 |
| 3   | Lock spacer sleeve   | DM20310   | 22/0015             | 1 |
| 4   | Spring               | DM20348   | 15-0052             | 1 |
| 5   | Bolt- M14 x 2.0 x260 | BM1420260 | 15-0047             | 1 |
| 6   | Nut- M14 x 2.0       | LN142     | 11-0186/B           | 1 |
| 7   | Lock Fuse            | DM20322   | 15-0046             | 1 |

# CUTTING UNIT- MAIN FRAME

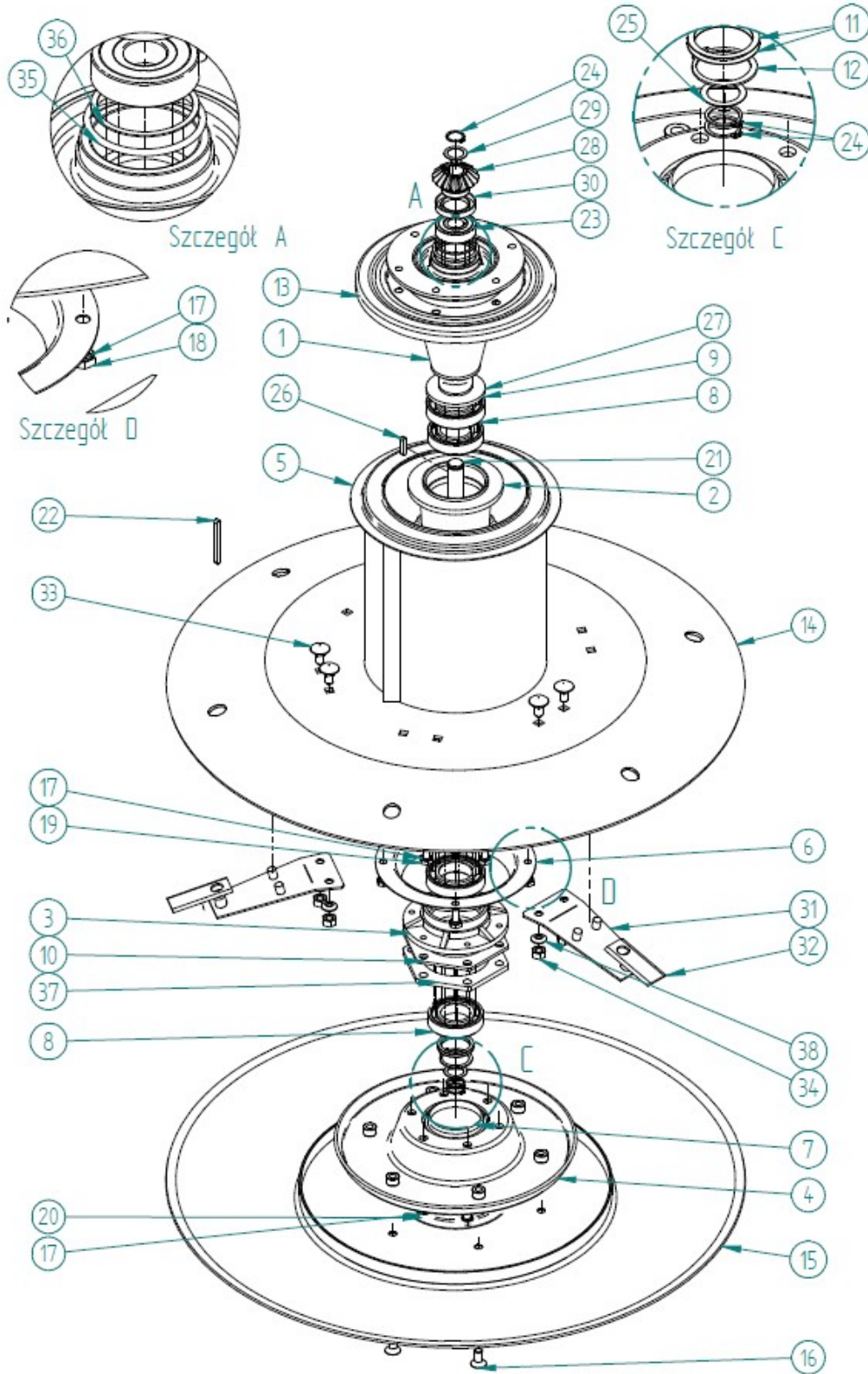




| <b>Table NO 9</b> |  |             |           |                                |
|-------------------|--|-------------|-----------|--------------------------------|
| No.               | Name   |             | Part no.  | Quantity/<br>Mower<br>type     |
|                   |  |             |           | 1.85m/1.65m/1.35m/             |
| 1                 | Main Frame (BDR-185)                         | DM10192-185 | 15-0005/A | 1/0/0/0                        |
|                   | Main Frame (BDR-165)                         | DM10192-165 | 15-0005   | 0/1/0/0                        |
|                   | Main Frame 1.35m                             | DM10192-135 | 15-0005/B | 0/0/1/1                        |
| 2                 | Flat Washer- M10 (Galv)                      | FW10        | 11-0055/A | 24/24/20/20                    |
| 3                 | Self-locking Nut- M10 x 1.5                  | LN1015      | 11-0127/A | 30/26/22/22                    |
| 4                 | Sealing Washer                               | DM150012    | 15-0012   | 4/8/8/8                        |
| 5                 | Bolt- M10 x 1.75 x 35 –8.8 (Galv)            | BM1217530   | 11-0096   | 12                             |
| 6                 | Lock Washer- M10                             | LW10        | 11-0090   | 20/16/16/16                    |
| 7                 | Large Bearing Housing                        | DM10050     | 15-0309   | 1/0/0/0                        |
|                   | Large Bearing Housing                        | DM10187     | 15-0001   | 0/1/1/1                        |
| 8                 | Small Bearing Housing                        | DM10075     | 15-0308   | 1/0/0/0                        |
|                   | Small Bearing Housing                        | DM10190     | 15-0002   | 0/1/1/1                        |
| 9                 | Bearing- 6305                                | B6305       | 06-0220/A | 1/0/0/0                        |
|                   | Bearing- 6205                                | B6205       | 06-0225/A | 0/1/1/1                        |
| 10                | Bearing- 6305                                | B6305       | 06-0220/A | 1                              |
| 11                |  | B6305       |           | 1/0/0/0                        |
| 12                | Frame Shaft- (BDR-185)                       | DM10047-85  | 15-0307   | 1/0/0/0                        |
|                   | Frame Shaft- (BDR-165)                       | DM10047-65  | 15-0016   | 0/1/0/0                        |
|                   | Frame Shaft- (BDR-135)                       | DM10047-35  | 15-0016/A | 0/0/1/1                        |
| 13                | Snap Ring- Internal- M62                     | SRI-62      | 08-0129   | 2                              |
| 14                | Shim- M25                                    | DM10057     | 15-0086   | 4, 0.3;0.5 or 1MM, as required |
| 15                | Key- M8 x 7 x 36                             | KM080736    | 15-0019   | 1                              |
| 16                | Key- M8 x 7 x 50                             | KM080750    | 15-0081   | 4                              |
| 17                | Large Gear Z-21- (BDR-185)                   | DM10090     | 15-0301   | 3/0/0/0                        |
|                   | Large Gear Z-21- (BDR-165)                   | DM10090     | 15-0018   | 0/3/3/3                        |
| 18                | Spacer Sleeve for Frame Shaft                | DMT7040     | 17-0062   | 1/0/0/0                        |
| 19                | Spring Pin- M6 x 16                          | DM85023     | 15-0110   | 4                              |
| 20                | Bolt- M10 x 1.5 x 60- 8.8 (Galv) Half-thread | BM101560    | 11-0035/1 | 8/4/4/4                        |
| 21                | Small Gear Wheel- Z-17 1.85 m                | DM10019     | 15-0300   | 1/0/0/0                        |
|                   | Small Gear Wheel- Z-16 1.65m                 | DM10019     | 15-0017   | 0/1/1/1                        |
| 22                | Attachment Hub                               | DM10276     | 15-0009   | 1                              |
| 23                | Attachment Shaft                             | DM10263     | 15-0008   | 1                              |
| 24                | Bearing- 6305 ZZ                             | B6305ZZ     | 06-0220   | 1                              |
| 25                | Cover- BDR-185                               | DM10136-185 | 15-0302   | 1/0/0/0                        |
|                   | Cover-BDR-165                                | DM10136-165 | 15-0003   | 0/1/0/0                        |
|                   | Cover- BDR-135                               | DM10136-135 | 15-0003/1 | 0/0/1/1                        |

|    |                                   |           |             |             |
|----|-----------------------------------|-----------|-------------|-------------|
| 26 | Bearing- 30305A                   | B30305    | 06-0223/A   | 1           |
| 27 | Seal- M25 x 52 x 10               | OS255210  | 08-0018     | 1           |
| 28 | Snap Ring- External- M25          | SRE-25    | 08-0117     | 1           |
| 29 | Lock Washer- M12 - (Galv)         | LW12      | 11-0054     | 4           |
| 30 | Bolt- M12 x 1.25 x 30 -8.8 (Galv) | BM1212530 | 11-0077     | 4           |
| 31 | Small Pulley                      | DM10250   | 15-0007     | 1/1/0/0     |
|    | Small Pulley                      | DM10250   | 15-0007/A   | 0/0/1/1     |
| 32 | Tab washer                        | DM10088   | 15-0095     | 4/2/2/2     |
| 33 | Bolt- M10 x 1.5 x 25 - 8.8 (Galv) | BM101525  | 11-0075     | 24/24/20/20 |
| 34 | The Valve Set                     | DM10441   | 15-0098     | 1           |
| 35 | Support Bushing- BDR185           | DM10177   | 15-0011/185 | 2           |
|    | Support Bushing- BDR-165          | DM10291   | 15-0011/165 | 2           |
|    | Support Bushing- BDR-135          | DMT0247   | 15-0011/135 | 2           |
| 36 | End Plate                         | DM10180   | 15-0010     | 1           |

# CUTTING UNIT- OPERATING SECTION



| Table No 10 |  |             |                         |                                       |
|-------------|--|-------------|-------------------------|---------------------------------------|
| No.         | Name                                     | Part no.    | Quantity/Mower type     |                                       |
|             |  |             | 1.85/1.65/1.35/1.35mini |                                       |
| 1           | Drum Hub                                 | DM10365     | 15-0021                 | 2                                     |
| 2           | Operating Disc Hub                       | DM10790     | 15-0036                 | 2                                     |
| 3           | Sliding Disc Hub                         | DM10775     | 15-0026                 | 2                                     |
| 4           | Resistive Disc                           | DM10340     | 15-0027                 | 2                                     |
| 5           | Drum Guard                               | DM10775     | 15-0039                 | 2                                     |
| 6           | Lower Hub Guard                          | DM10439     | 15-0032                 | 2                                     |
| 7           | Guard - Cap                              | DM150031    | 15-0031                 | 2                                     |
| 8           | Bearing - 6209 RS                        | B6209RS     | 06-0219/B               | 4                                     |
| 9           | Bearing - 6210 RS                        | B6210RS     | 06-0218/B               | 4                                     |
| 10          | Height Spacer Ring- M8                   | DM10556-8   | 15-0023/A               | 2                                     |
| 11          | Shim - M45 x M55                         | DM150087    | 15 -0087                | Set of 4, 0.3;0.5 or 1mm, as required |
| 12          | Snap Ring - External- M45                | SRE-45      | 08-0120                 | 2                                     |
| 13          | Upper Drum Guard                         | DM10365     | 15-0028                 | 2                                     |
| 14          | Operating Disc BDR-185                   | DM20021-185 | 15-0037/A               | 2/0/0/0                               |
|             | Operating Disc BDR-165                   | DM20021-165 | 15-0037                 | 0/2/0/0                               |
|             | Operating disc BDR-135                   | DM20021-135 | 15-0037/B               | 0/0/2/2                               |
| 15          | Sliding Plate- BDR-185                   | DM10528-185 | 15-0085/A               | 2/0/0/0                               |
|             | Sliding Plate-BDR-165                    | DM10528-165 | 15-0085                 | 0/2/0/0                               |
|             | Sliding Plate- BDR-135                   | DM10528-135 | 15-0085/B               | 0/0/2/2                               |
| 16          | Countersunk Allen Bolt - M12 x 1.75 x 25 | SSM1217525  | 15-0079/B               | 12                                    |
| 17          | Lock Washer - M10 (Galv)                 | LW10        | 11-0090                 | 28                                    |
| 18          | Bolt - M10 x 1.5 x 25- (Galv) 8.8        | BM101525    | 11-0075                 | 8/8/4/4                               |
|             | Bolt - M12 x 1.75 x 35- (Galv) 8.8       | BM1217530   | 11-0096                 | 0/0/4/4                               |
|             | Bolt - M10 x 1.75 x 35- (Galv) 8.8       | BM1217530   |                         |                                       |
| 19          | Bolt - M10 x 1.5 x 30- (Galv) 8.8        | BM101530    | 11-0026                 | 8                                     |
| 20          | Bolt - M10 x 1.75 x 35- (Galv) 8.8       | BM1217530   | 11-0096                 | 12/0/0/0                              |
|             | Bolt - M10 x 1.5 x 25- (Galv) 8.8        | BM101525    | 11-0075                 | 0/12/12/12                            |
| 21          | Bearing Shaft                            | DM10617     | 15-0024                 | 2                                     |
| 22          | Key - M8 x 7 x 80                        | DM10584     | 15-0034                 | 2                                     |
| 23          | Bearing - 6305 ZZ                        | B6305ZZ     | 06-0220                 | 2                                     |
| 24          | Snap Ring – External - M25               | SRE-25      | 08-0117                 | 6                                     |
| 25          | Shim - M25 x                             | DM82005     | 15-0086                 | 2, 0.3;0.5 or 1mm, as required        |
| 26          | Key M8 x 7 x 32                          | DM10156     | 15-0025                 | 2                                     |
| 27          | Bearing guard                            | DM10031     | 15-0022                 | 2                                     |

|    |                                     |            |           |                                |
|----|-------------------------------------|------------|-----------|--------------------------------|
| 28 | Small Gear Wheel- BDR-185           | DM10019    | 15-0300   | 2/0/0/0                        |
|    | Small Gear Wheel- BDR-135, 165      | DM10019    | 15-0017   | 0/2/2/2                        |
| 29 | Shim- 25 x                          | DM82005    | 15-0086   | 2, 0.3;0.5 or 1mm, as required |
| 30 | Oil Seal- M40 x 62 x 10             | OS406210   | 08-0030   | 2                              |
| 31 | Blade Holder- BDR-165, 185          | DM10309-65 | 15-0038   | 6/6/0/0                        |
|    | Blade Holder- BDR-135               | DM10309-35 | 15-0038/A | 0/0/4/4                        |
| 32 | Blades                              | DM10454    | 15-0084   | 6/6/4/4                        |
| 33 | Carriage Bolt- M12 x 1.75 x 25 10.9 | CBM1217525 | 15-0079/B | 12/12/0/0                      |
| 34 | Nut- M12 x 1.75 (Galv)              | NM120175   | 11-0044   | 12/12/0/0                      |
| 35 | Sealing Ring- M70 x M4              | DM10057    | 08-0105   | 2                              |
| 36 | Shim- M55 x M62                     | DM10556    | 15-0088   | 2, 0.3;0.5 or 1mm, as required |
| 37 | Height Spacer Ring- M12 (Optional)  | DM10556-12 | 15-0023   | 2/2/2/2                        |
| 38 | Conical Ring                        | DM150030   | 15-0030/A | 12/12/0/0                      |

# Blade Changing Tool

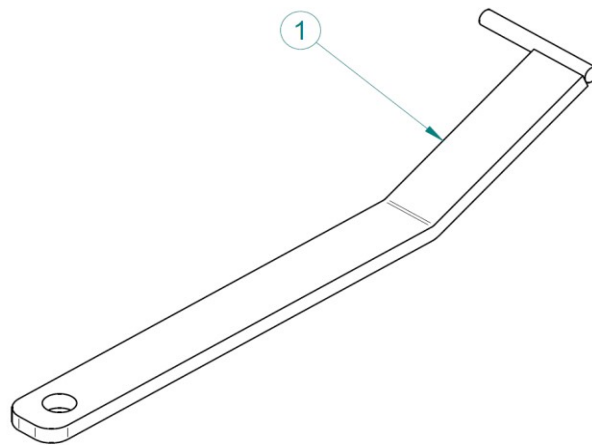
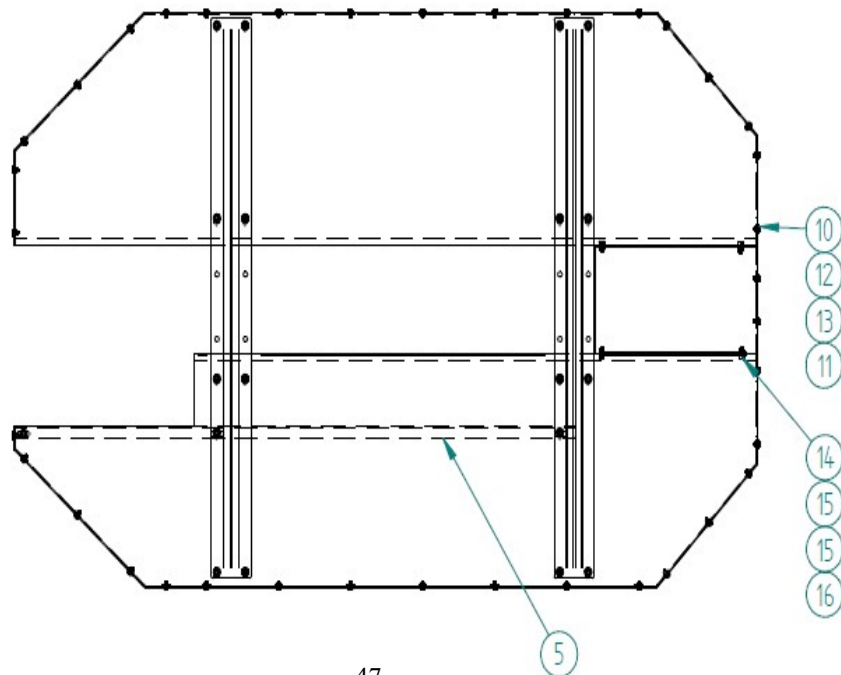
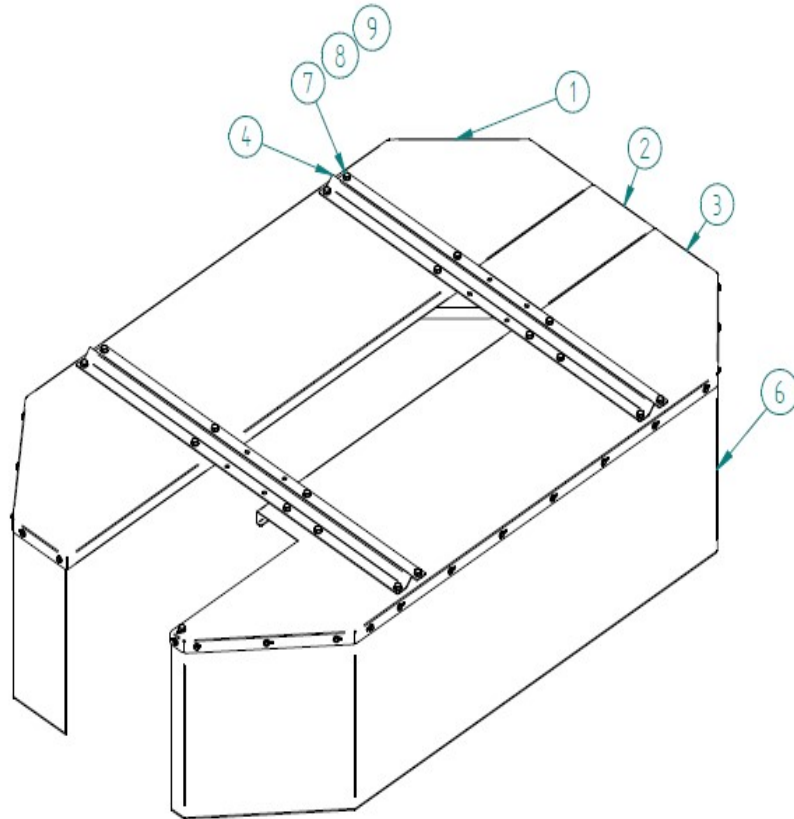


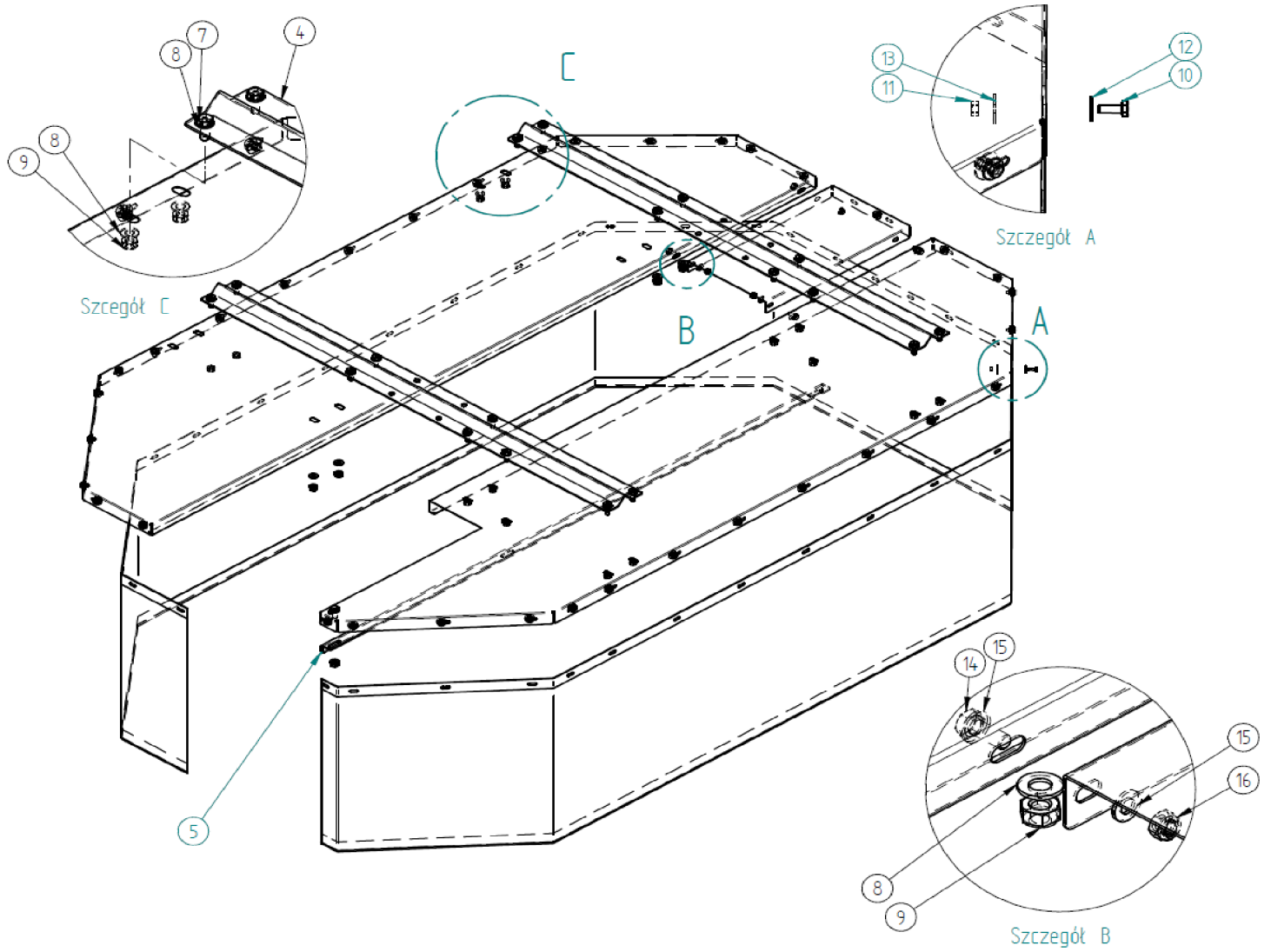
Table No 11

| No. | Name                | Part no.            | Quantity/Mower type<br>1.85m/1.65m/1.35m/ |
|-----|---------------------|---------------------|---|
| 1   | Blade Changing Tool | DM022099<br>15-0102 | 1   |



# GUARD ASSEMBLY



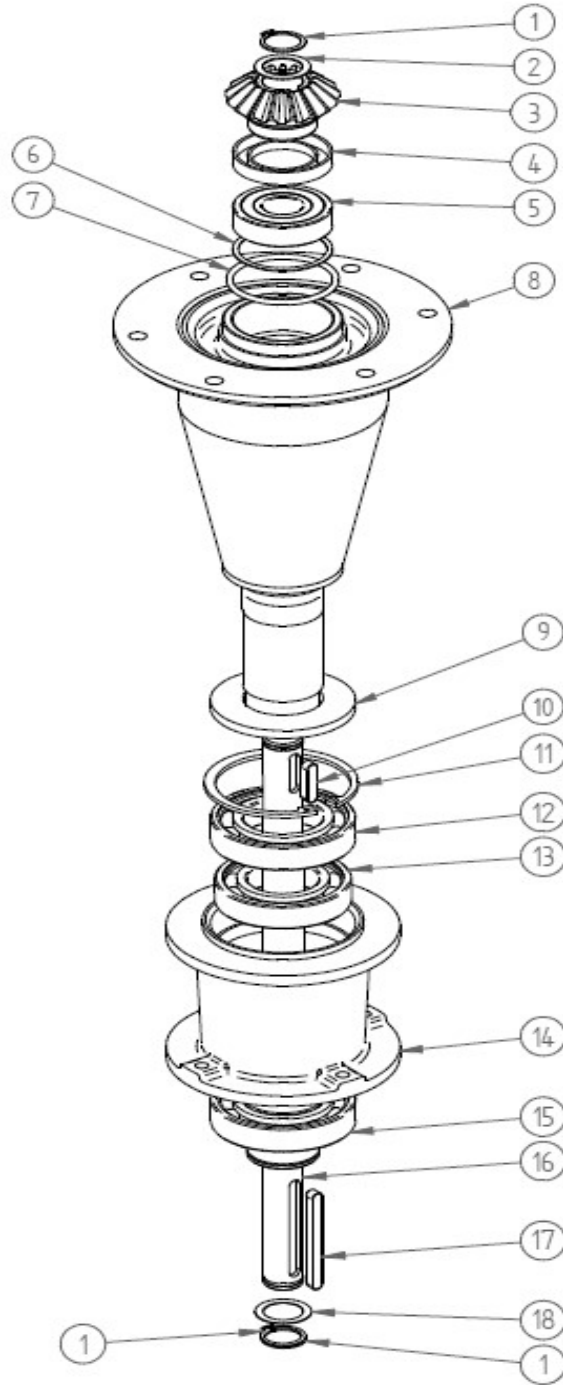




**Table No 12**

| No. | Name                                     |             | Part no.  | Mower type<br>[quantity]<br>Quantity:<br>1.85/1.65/1.35/ |   |
|-----|--|-------------|-----------|--|---|
|     | Metal Guard – Set (Position 1-6)         | DM30015-185 | 15-0314   | 1/0/0/0  |   |
|     | Metal Guard – Set (Position 1-6)         | DM30015-165 | 15-0091   | 0/1/0/0  |   |
|     | Set (Position 1-6)                       | DM30015-135 | 15-0091/B | 0/0/1/1  |   |
|     | Metal Guard made of "1.5" sheet          |             |           |  |   |
| 1   | Right Shield- (#1, 2, 3 come as one set) | See above   |           | 1/1/1/1  | These parts are included in the metal guard set for the given listed above mower type |
| 2   | Rear Shield- (#1, 2, 3 come as one set)  | See above   |           | 1/1/1/1  |   |
| 3   | Left Shield- (#1, 2, 3 come as one set)  | See above   |           | 1/1/1/1  |   |
| 4   | Bent Reinforcement Bar- (BDR-185)        | DM30043     |           | 2/0/0/0  |   |
| 4   | Bent Reinforcement Bar- (BDR-135 & 165)  | DMT0804     |           | 0/2/2/2  |   |
| 5   | Reinforcing Angle Bar- (BDR- 185)        | DM30071     |           | 1/1/1/1  |   |
| 5   | Reinforcing Angle Bar- (BDR-165)         | DM30237     |           | 0/1/0/0  |   |
| 5   | Reinforcing Angle Bar- (BDR-135)         | DMT0805     |           | 0/0/1/1  |   |
| 6   | Reinforced Apron (BDR-185)               | DM30145-85M | 15-0313   | 1/0/0/0  |   |
|     | Reinforced Apron (BDR-165)               | DM30196-65M | 15-0067/A | 0/1/0/0  |   |
|     | Reinforced Apron (BDR-135)               | DM30145-35M | 15-0067/B | 0/0/1/0  |   |
|     | Reinforced Apron (BDR-135 Mini)          | DM30145-35M | 15-0067/M | 0/0/0/1  |   |
| 7   | Bolt- M10 x 1.5 x 25 - 8.8 (Galv)        | BM101525    | 11-0075   | 19/19/19/21  | Included in the screw set for a given mower type                                      |
| 8   | Flat Washer- M10                         | BM101520    | 11-0055/A | 38/38/38/42  |   |
| 9   | Self-locking Nut- M10 x 1.5              | LN1015      | 11-0127/A | 19/19/19/21  |   |
| 10  | Bolt- M6 x 1.0 x 16 - 8.8 (Galv)         | BM061016    | 11-0188/A | 37/37/33/29  |   |
| 11  | Nut- M10 x 1.5                           | NM1015      | 11-0043/A | 37/37/33/29  |   |
| 12  | Large Flat Washer- M6                    | LFW10       | 11-0082/A | 37/37/33/29  |   |
| 13  | Large Flat Washer- M6                    | LFW10       | 11-0082/A | 37/37/33/29  |   |
| 14  | Bolt- M8 x 1.25 x 16- 8.8 (Galv)         | BM0812516   | 11-0187/A | 4  |   |
| 15  | Lock Washer- M8                          | LW08        | 11-0049   | 8  |   |
| 16  | Nut- M8 x 1.25                           | NM08125     | 11-0040   | 4  |   |

# COMPLETE DRUM UNIT



**Table No 13**

| <b>Table No 13</b> |                           |          |  |  |
|--------------------|---------------------------|----------|--|--|
| <b>Nr p.</b>       | <b>Name</b>               |          | <b>Part number</b>                                     | <b>Qty/Mower type</b><br><b>1,85m/1,65m/1,35m/1,35mini</b> |
|                    | <b>Complete unit</b>      |          | <b>17-0019/2</b><br><b>17-0019/1</b><br><b>17-0019</b> | <b>1/0/0/0</b><br><b>0/1/0/0</b><br><b>0/0/1/1</b>         |
| 1                  | Snap Ring- External- M25  | SRE-25   | 08-0117  | 3  |
| 2                  | Spacer Washer- M25        | DM82005  | 15-0086  | 1, depending on if needed 0.3; 0.5 or 1M                   |
| 3                  | Small Bevel Gear- Z-17    | DM10031  | 15-0300  | 1/0/0/0  |
|                    | Small Bevel Gear- Z-16    | DM10019  | 15-0017  | 0/1/1/1  |
| 4                  | Oil Seal- 40 x 62 x 10    | OS406210 | 08-0030  | 1  |
| 5                  | Bearing- 6305 ZZ          | B6305    | 06-0220  | 1  |
| 6                  | Spacer Washer- M50 x 62   | DM10556  | 15-0088  | 1, depending on if needed 0.3; 0.5 or 1M                   |
| 7                  | Sealing Ring M70 x 4      | OR70x4   | 08-0105  | 1  |
| 8                  | Drum Hub                  | DM10747  | 15-0021  | 1  |
| 9                  | Sealant                   | DM10031  | 15-0022  | 1  |
| 10                 | Key- M8 x 7 x 2           | DM10156  | 15-0025  | 1  |
| 11                 | Snap Ring- Internal- M90  | SRI-90   | 08-0132  | 1  |
| 12                 | Bearing- 6210             | B6210    | 06-0218/A  | 1  |
| 13                 | Bearing- 6209 RS          | B62092RS | 06-0219/B  | 1  |
| 14                 | Working Disc Hub          | DM10790  | 15-0036  | 2  |
| 15                 | Bearing- 6210 RS          | B62102RS | 06-0218/B  | 1  |
| 16                 | Reducing Gear Drive Shaft | DM10617  | 15-0024  | 1  |
| 17                 | Key- M8 x 7 x 80          | DM10584  | 15-0034  | 1  |
| 18                 | Spacer Ring 25            | DM85111  | 15-0086  | 1, depending on if needed 0.3; 0.5 or 1MM                  |

# LIMITED WARRANTY

**Belco Resources Equipment warrants to the** original purchaser of any new piece of machinery from Belco Resources Equipment, purchased from an authorized Belco Resources Equipment dealer, that the equipment be free from defects in material and workmanship for a period of one (1) year for non-commercial, state, and municipalities' use, ninety (90) days for commercial use from date of retail sale. Warranty for rental purposes are thirty (30) days. The obligation of Belco Resources Equipment to the purchaser under this warranty is limited to the repair or replacement of defective parts.

A four (4) year extended **Gearbox Limited Warranty** is provided for YCT & RXT models at the end of the standard one (1) year warranty period. This warranty is not provided for commercial or rental uses. The extended warranty provides for the replacement of parts only. Not covered are oil seals or any damages to the gearbox due to lack of lubrications.

**Replacement or** repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of purchase of such part or to the expiration of the applicable new equipment warranty period, whichever occurs later. Warranted parts shall be provided at no cost to the user at an authorized Belco Resources Equipment dealer during regular working hours. Belco Resources Equipment reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

This limited warranty does not apply to and excludes wear items such as shear pins, tires, tubes knives, blades or other wear items. Oil or grease is not covered by this warranty.

All obligations of Belco Resources Equipment under this limited warranty shall be terminated if:

Proper service is not performed on the machine. The machine is modified or altered in any way.

The machine is being used or has been used for purposes other than those for which the machine was intended.

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