

USER MANUAL
WARRANTY
SPARE PARTS CATALOGUE

Drum mower Mini Mini
Drum mower Rota hydro 1,35



Borzytucho 2023

ISSUE 05

TRANSLATION OF THE ORIGINAL MANUAL





WARNING!

This instruction manual should be read before use and the safety rules contained in it must be observed.

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 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 the manufacturer.

In the event of a sale or granting access to the machine to other user the instruction manual must be attached with 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.

TALEX guarantees machine functionality when used following the technical and operational guidelines described in the USER MANUAL.

Defects revealed during the warranty period will be repaired by the Warranty Service.

The repair deadline is specified in the WARRANTY BOOK.

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

Warranty services apply only to such cases as: mechanical damage not due to the user's fault, manufacturing defects of parts, etc.

The group of elements does not includes e.g. the following parts/elements:

- Cutting blades,
- Protective skirts,
- Bearings,

In the event that damages have been caused as a result of:

- Mechanical damage caused by user's fault or road accident,
- improper exploitation, adjustment and maintenance, use of the machine contrary to its intended use,
- using a damaged machine,
- repairs carried out by unauthorized persons, incorrect performance of repairs,
- unauthorized changes to the machine construction,

The user may loose the warranty.

The user is obliged to immediately report all noticed defects in paint coatings or traces of corrosion, and have the defects repaired, regardless of whether the damage is covered by the warranty or not. Detailed terms of the warranty are given in the WARRANTY BOOK attached to the newly purchased machine.



WARNING !

Demand the seller to carefully fill out the WARRANTY BOOK. The lack of, for example, the date of sale or the stamp of the dealership exposes the user to risk of warranty complaints rejection.



WARNING!

After several hours of machine operation, check the tension of the V-belts. If the play is too big, they must be tightened.

Table of contents

1. Introduction	6
2. Machine identification	7
3. Rules of safe operation	8
3.1 User safety	8
3.2 Residual risk evaluation	11
3.3 Safety decals on the machine and their meaning	13
4. Intended use of the machine	15
5. Equipment and accesories	16
5.1 Basic equipment	16
5.2 Technical specification.....	16
6. Machine use	20
6.1 Mower assembly.....	20
6.2 Linking the mower to the tractor	21
6.3 Machine adjustment.....	24
7. Technical service of the mower	25
7.1 Blades replacement	26
7.2 After work maintenance.....	27
7.3 Greasing	28
7.4 After season maintenance.....	29
7.5 Possible faults and ways of their elimination.....	29
8. Disassembly, scrapping and environmental protection	30
9. Spare parts catalogue	32
9.1 Spare parts ordering rules:	32
9.2 General build	33
9.3 Cutting unit – Working part.....	35
9.3.1 Cutting unit working part bearing hub	37
9.4 Main frame	39
9.5 Cutting unit cover	41
9.6 Suspension adapter	44
9.7 Hydraulic drive system	46
10. Warranty card	48
11. Warranty repairs record.....	49
12. Warranty form.....	50

Table of drawings:

Fig. 1 Name plate	7
Fig 2 General build of mechanically driven mower(pt.1 of 2)	16
Fig 2 General build of hydraulically driven mower(pt.2 of 2)	16
Fig 4 Distinguishing elements of hydraulic drive mower	17
Fig 5 Mower drive scheme	18
Fig 6 Cutting unit cover assembly	20
Fig 7 Mechanical mower hitch elements	21
Fig 8 Hydraulic drive mower hitch elements.....	22
Fig 9 Locking in the working position.....	23
Fig 10 Locking in the transport position.....	23
Fig 11 Correctly adjusted mower	24
Fig 12 Cutting height adjustment: H) Cutting height	24
Fig 13 Blade replacement.....	26
Fig 14 Correct cutting blade positioning scheme.....	27
Fig 15 General build of the mechanical drive mower	33
Fig 16 General build of the hydraulic drive mower	34
Fig 17 Working part of cutting unit	35
Fig 18 Bearing hub.....	37
Fig 19 Main frame	39
Fig 20. Cutting unit cover (pt.1 of 5)	41
Fig 21. Cutting unit cover (pt.2 of 5)	41
Fig 22. Cutting unit cover (pt.3 of 5)	41
Fig 23. Cutting unit cover (pt.3 of 5)	42
Fig 24. Cutting unit cover (pt.5 of 5)	42
Fig 25. Suspension adapter	44
Fig 26. Hydraulic drive system	46

Table of tables:

Table no. 1 Safety decals on the machine and their meaning	14
Table no. 2 Technical specification of the mower.....	19
Table no. 3 Tightening torques for bolts and nuts.....	28
Table no. 4 Possible faults and ways of their elimination	29
Table no. 5 General build (mechanical drive)	33
Table no. 6 General build (hydraulic drive).....	34
Table no. 7 Working part of cutting unit.....	36
Table no. 8 Complete bearing hub.....	38
Table no. 9 Main frame	40
Table no. 10 Cutting unit cover	43
Table no. 11 Suspension adapter	45
Table no. 12 Hydraulic drive system	47

1. Introduction

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



WARNING!
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. In the instruction manual listed are precautionary measures to be taken to minimize or avoid risks.

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 instructions manual is unclear, please ask for explanation directly to the manufacturer.



WARNING!
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. Machine identification

All the information needed to identify the machine are located on the name plate, which is located on the machine body. This label contains information such as : manufacturer's name and adress, year of manufacture, serial number, machine weight.



Fig. 1 Name plate

In case of doubt, any information about the machine and explanations to the manual should be provided by the seller or manufacturer.

Adress

Talex Spółka z ograniczoną odpowiedzialnością
ul. Dworcowa 9c
77-141 Borzytucho
Tel.: +48 59 821 13 40
www.talex-sj.pl
e-mail: biuro@talex-sj.pl

3. Rules of safe operation

3.1 User safety

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

- Follow general rules of safety and health at work in addition to these given in the user manual.
- 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 psychoactive substances.
- 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 or by the machine while in operation.
- The mower may be operated by a person with the licence to drive the vehicle to which it is mounted, according to the manufacturer's instructions.
- The operator's working position while working with the mower is the cabin of the vehicle to which the machine is linked.
- Keep in mind that there are many places on the mower that can cause injury (sharp edges, protruding structural elements, etc.). During work, exercise increased caution when moving around the listed critical places and use personal protective equipment such as:
 - protective clothing,
 - protective gloves,
 - protective footwear
- It is forbidden to transport people or objects on the machine.
- It is forbidden to operate the machine by third parties who are not familiar with the operating instructions.
- An employee working with a mower should have a first-aid kit with instructions for use.
- When moving a vehicle with a mower mounted and not working, ensure a safe transport height of ~0.4 m.
- Before driving, the mower must be set in the transport position and lifted using the rear three-point linkage or the front linkage of the tractor or loader. The machine must be lowered when parked.

- Be especially careful when traveling on public roads and comply with the applicable provisions of the Highway Code.
- When moving on public roads, it is absolutely necessary to use electric vehicle outline lights, checking its efficiency and visibility, while ensuring its cleanliness. The user is obliged to ensure that the machine is visible during transport: use of reflective lighting and warning signs - optional equipment. The transport speed should be adapted to the condition of the road surface, it should not exceed 15 km/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, i.a. bolt connections.
- Store the mower on a flat, levelled, paved surface out of the reach of unauthorized persons and animals. Use support stand for stability.
- During the assembly and disassembly of the mower 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 team, vehicle and mower must be in good technical condition. Worn or damaged parts must be immediately replaced.
- The mower must be equipped with all safety guards against access to moving parts, which the manufacturer has provided). Guards must be complete and fully functional.
- It is forbidden to work with the mower without guards and protective skirt. It is forbidden to work with damaged guards or raised protective skirt.
- It is forbidden to lift up the working machine with its drums rotating.
- it is forbidden to operate the hydraulic lift lever from outside the tractor.
- Before working with the mower, please read the instructions manual and safety precautions at work and recommendations regarding the use and regulation.
- Weight of the mower suspended on the vehicle may affect the controllability. In this situation, particular caution should be exercised.
- User manual should be placed on the machine. By lending the machine, pass it technically operational with user manual.
- It is forbidden to attach additional means of transport to the mower.

- By first start, check 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 conventional collateral in the form of pins. Work with other security 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 the chapter 7. Technical service of the mower.
- When collecting and transporting the mower, make sure that the machine has not been damaged by checking its technical condition.
- It is forbidden for people to stay under the lifted mower, there is a risk of being crushed by structural elements.
- When adjusting, do not put fingers or limbs between the structural elements of the machine.
- It is forbidden to leave the tractor cabin when the machine's drive is running and before the rotating elements have stopped
- During operation and regulation operator of the vehicle, which is cooperating with the mower must take care that no one approaches the machine and stays at a distance of **less than 50 m from a working mower**.
- Set the cutting unit to working position before turning on the mower
- During operation, do not allow the PTO speed to exceed 540 rev/min. and the driving speed must be adapted to the required work. it is forbidden to overload the shaft and rapidly engage the clutch
- 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 work with the machine while reversing.** The machine should be lifted while reversing
- When connecting the hydraulic hoses, make sure that the hydraulic system is not under pressure.
- It is forbidden to stay, service between the vehicle and the mower when the engine is running.
- Working on slopes exceeding 10° is unacceptable.
- Particular caution should be exercised when working on slopes.
- Disengage the PTO drive or hydraulic drive when making turns.
- It is forbidden to operate the machine near public squares (parks, schools, etc.) or on stony terrain, in order to avoid the danger of throwing stones and other objects.
- Working with a damaged or incomplete PTO shaft is prohibited. In particular, it is forbidden to work without moving parts covers.

- The PTO shaft has markings which end should be connected to the tractor, before starting make sure that the direction of rotation of the shaft is correct.
- 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 that can catch them.
- It is recommended to clean and wash the mower after work 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 by 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.
- When working with the mower, wear hearing protection to minimize noise exposure. In addition, it is recommended to close the doors and windows of the vehicle cabin.



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 evaluation

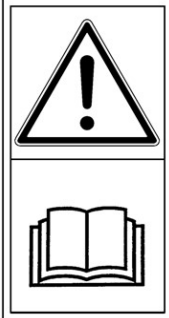
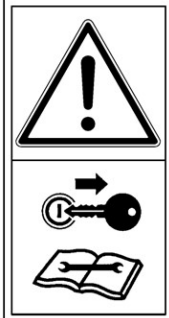







The Talex company has made every effort to ensure that the design of the mower and its intended use do not pose a threat to people and the environment.

Due to the nature of the mower's work and the lack of, for example, the possibility of completely covering the cutting unit, certain risk elements may occur.

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	Familiarise with 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.	Fall on same level (stumble, slip, etc.)	Uneven ground, mess - objects lying and standing, wires lying on the communication roads, slippery surfaces	Suitable footwear, levelled surface, maintaining caution, maintaining order, familiarising with the instructions 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
4.	Struck by moving objects	Crushed plants, incidental part 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 50 m from a working machine, use of personal protective equipment - helmet, safety glasses
5.	Dangerous sharp edges	Protruding structure elements of the machine, use of hand tools	Personal protective equipment - gloves, buttoned work clothes, maintaining caution
6.	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
7.	Micro climate - changing weather conditions	Work carried out in different weather conditions	Appropriate clothing, drinks, sunscreen, relax, familiarising with the instruction manual
8.	Noise	Too high revolutions of the machine, damaged, loose vibrating parts	Working with efficient machine, current machine maintenance, relevant revolutions of the machine
9	Tears, entanglements	Rotating telescopic articulated shaft, rotating mower drums, no guards on moving parts	Do not move, approach or adjust the machine, use extreme caution, use guards for moving parts, familiarize yourself with the operating instructions
10	Poisonings, irritations	Hydraulic oil. Leaky hydraulic connections, damaged hoses, leaking cylinders	Use of personal protective equipment, familiarization with operating instructions, replacement of hydraulic power lines in accordance with the manufacturer's recommendations, ongoing repair of leaks, inspection
11	Thermal hazards	Contact with radiant heat sources. Engine cooling system, engine exhaust system. Hydraulic system temperature. Fire caused by sparks from collisions with rocks and other objects in the path of the machine	Use of personal protective equipment, familiarization with the operating instructions. Taking particular care. Checking the temperature of the vehicle and the machine equipment. Use of fire protection measures - necessary equipment of the vehicle/carrier

3.3 Safety decals on the machine and their meaning

 <p>1.0 – Read the user manual before work</p>	 <p>1.1 - Shut off the engine and remove the key before performing any service or repair</p>	 <p>1.2 - Keep a safe distance from the machine. Do not allow bystanders to be closer than 50 m</p>
 <p>1.3 – Do not undertake any repairs during operation</p>	 <p>1.4 - Do not ride on platforms and ladders</p>	 <p>1.5 - Do not stand near the lift links when operating the lift</p>
 <p>1.6 - Do not open or remove the safety guards while the engine is running</p>	 <p>1.7 - Avoid the effects of pressurized liquid. Refer to the user manual for maintenance operations</p>	 <p>1.8 – Beware of idle running tools</p>


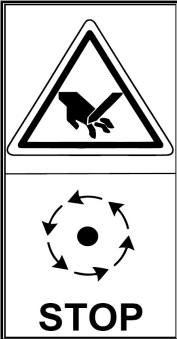




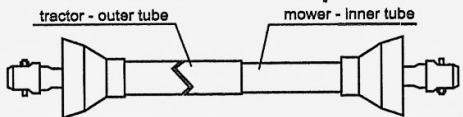

 <p>1.9 – Caution – cutting blades. Do not come close to working machine</p>	 <p>2.0 – Do not touch the machine before all the elements stop</p>	
<p>16 MPa</p> <p>2.1 – Warning about the pressure in the hydraulic system (applies only to mowers with hydraulic drive)</p>	 <p>2.2 – Wear protective clothing</p>	 <p>2.3 – Wear protective gloves</p>
	 <p>2.4 – Wear ears protection</p>	 <p>2.5 – Wear eyes protection</p>
<p>FORBIDDEN</p> <p>TO LIFT THE MACHINE WHILE ROTATING</p> <p>2.6 Do not lift the machine while it is rotating</p>	<p>The joining of mower with tractor by means of articulation-telescopic shaft</p>  <p>2.7 Machine PTO connection with the tractor (Applies only for the PTO driven mower)</p>	
 <p>2.8 Do not exceed maximum RPM</p>	<p>Max 160 [bar]</p> <p>Max 60 [l/min]</p> <p>2.9 Maximum hydraulic system values (Applies only for the hydraulically driven mower)</p>	

Table no. 1 Safety decals on the machine and their meaning

4. Intended use of the machine

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

Can be used on meadows and fields without stones, on flat or slightly undulating fields with a slope of up to 10°.

To work with the mower 1,35 m Mini Mini a tractor should be used, class 3 with the pulling force of 4 kN or loader with maximum oil flow of 60l/min. Mowers are adjusted to the three-point linkage (hitch) cat. I. while the version with a hydraulic drive is adapted to many models of popular loaders thanks to the attachment attached to the machine.

The working element are two rotating discs equipped with knives. In the version of the mower with a mechanical drive, this unit is driven from the PTO through a PTO shaft to the bevel gears, while in the version with a hydraulic drive, the drive is provided by a hydraulic motor powered by a hydraulic pump of the loader or tractor. Bevel gears are mounted on drive shafts that transfer the drive to the discs.

Fulfillment of the requirements for the use of the machine, maintenance and repairs according to the manufacturer's recommendations and strict adherence to them is a condition for proper use. The machine should be used, operated and repaired only by persons familiar with its detailed characteristics and with the rules of conduct in the field of occupational health and safety.

The manufacturer has a wide range of agricultural machines for sale and also provides specialist advice on the selection of appropriate equipment for the user's needs.



Any ambiguities regarding the intended use of the device should be clarified by contacting the manufacturer of the device. Proper selection of the machine and awareness of its purpose will increase work safety.

Use of the machine for other purposes will be understood as non-intended use

5. Equipment and accessories

The MINI MINI mower, depending on the needs of customers, has two versions of drive systems:

- Mechanical drive (PTO)
- Hydraulic drive

5.1 Basic equipment

Mower basic equipment contains:

- User manual with spare parts catalogue and warranty card- 1pcs.
- Special spanner - 1pcs.
- Blades set - quantity, see table no. 2.
- Spare blades set
- PTO shaft with one-way clutch - 1pcs.
(Mechanical drive version only)
- Loader brackets . - 1pcs
(Hydraulic drive version only)

The mower's basic equipment does not include warning signs with lights, a triangular sign for slow-moving vehicles and a PTO shaft. They can be purchased at an additional cost from the manufacturer or at the machine sales points.

5.2 Technical specification

Machine general build scheme is shown on the pictures below:

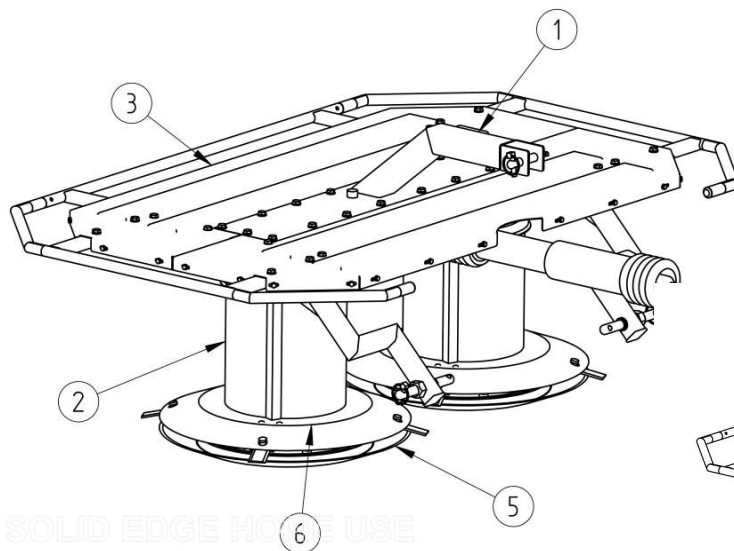


Fig 2 General build of mechanically driven mower(pt.1 of 2)

1. Main frame
2. Working drum
3. Cover
4. Protective skirt
5. Bottom saucer
6. Operating saucer

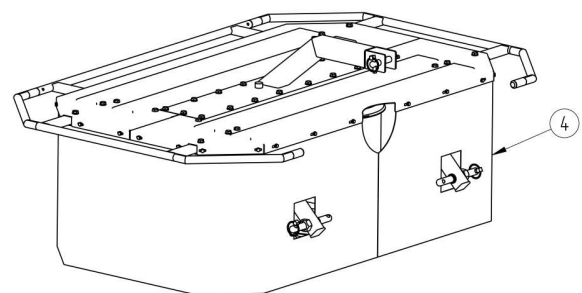


Fig 3 General build of hydraulically driven mower(pt.2 of 2)

The mower with hydraulic drive differs from the mower with mechanical drive in the following elements:

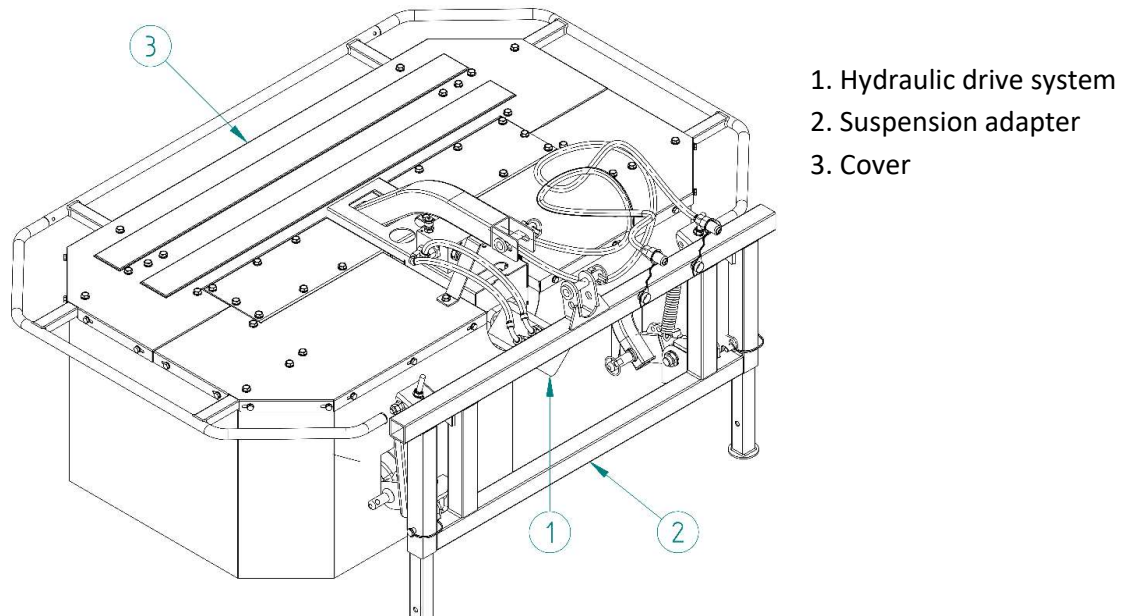


Fig 4 Distinguishing elements of hydraulic drive mower

Main frame (Fig .2 pos. 1) with the suspension adapter (fig.4 pos. 2) is used to link the mower to the tractor. Cutting unit contains two working drums and operating saucers (fig.2 pos. 2 & 6) with rotating blades at the bottom. Operating saucers are supported by the bottom (sliding) saucers when positioned in the working position (fig.2 pos. 5), which are responsible for ground contour following.

Covers (fig.3 i 4 pos.3) and protective skirt (fig.2 pos. 4) secure the operator and the bystanders from hard elements which can be thrown with high speed by the Working drums and operating saucers (fig.2 pos. 2 & 6).

Floating system is maintained by the suspension adapter, which can be equipped with various brackets mounted on the U-bolts or standard bolts. Floating is maintained by the usage of:

- Springs designed to balance the weight of the machine, making it easier to slide over obstacles, unevenness, etc.
- Ball joint axle rods based on oscillating bushings giving free multi-plane movement.

The use of such a solution forces the use of an additional element in the form of a transport lock, whose task is to stabilize the machine during transport. An additional element of the equipment is a stand supporting the adaptive system. It allows an easier aggregation process and protects the springs against the undesirable effect of pulling out when the mower is at rest.

1. PTO Shaft
2. Drive shaft
3. One way clutch
4. Main frame drive shaft

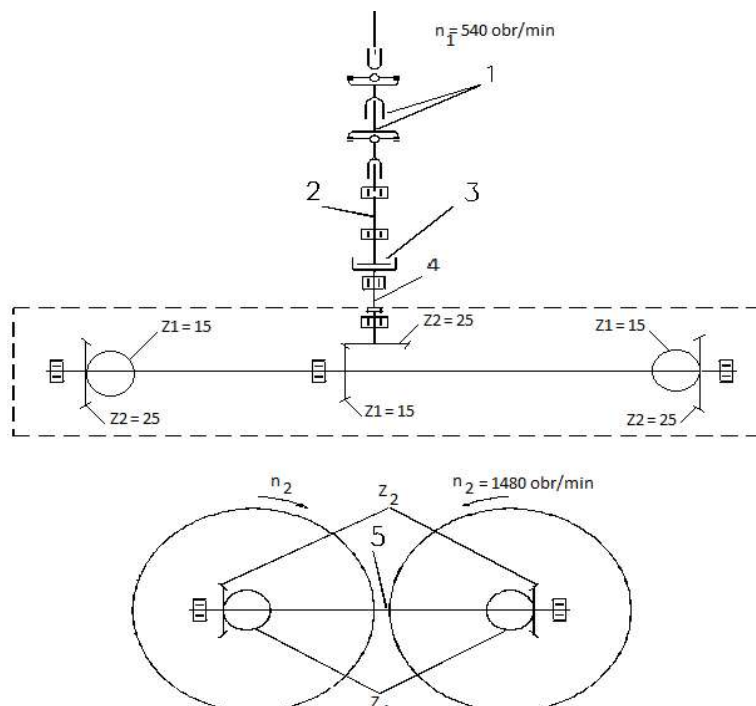


Fig 5 Mower drive scheme

Drums and operating saucers are driven by the tractor's PTO shaft or a hydraulic pump that powers the hydraulic motor, together with the blades they rotate in opposite directions, causing the cutting of plants and the formation of green fodder in the form of swath. The one-way clutch allows the drums and operating saucers to rotate freely after the engine is turned off and protects the drive elements from damage.

Technical and operational specification of the mowers are in the table 2.

		UoM	Mower type	
No	Description		Mechanical drive	Hydraulic drive
1	Mower typ	-	Rotary suspended	
2	Mowing width	[m]	1,35	
3	Power demand	[kW]	13	
4	Working drums quantity	[pcs.]	2	
5	Blades quantity	[pcs.]	8	
6	Standard mowing height	[mm]	42	
7	Low mowing height	[mm]	32	
8	Rotary speed of working drums	[RPM]	1480	1480 (with ~50l/min)
9	Tractor's PTO RPM	[RPM]	540	-
10	Recommended PTO	[Nm]	270	-
11	Efficiency	[ha/h]	1	
12	Working speed	[km/h]	10	
13	Transport speed	[km/h]	20	
14	Transport position ground clearance	[m]	0,4	
Overall dimensions				
15	Length	[mm]	1150	1400
16	Width	[mm]	1750	
17	Height	[mm]	750	
18	Mass	[kg]	180	254
Hydraulic system				
20	Hydraulic system maximum pressure	[MPa]	-	16
21	Minimum oil demand (recommended)	[l/min]	-	40 (50)
22	Maximum oil demand	[l/min]	-	60
23	Noise level emitted by the machine	L _{pA}	94,8 ⁺² ₊₀ dB	88,8 ⁺² ₊₀ dB
		L _{Amax}	99,0 ^{+2,6} ₊₀ dB	95,1 ^{+2,6} ₊₀ dB
		L _{Cpeak}	128,6 ^{+2,6} ₊₀ dB	128,6 ^{+2,6} ₊₀ dB
L _{pA} - Noise exposure level related to 8 hours of work per 24 hours L _{Amax} – Maximum sound measurement value L _{Cpeak} – Peak sound value				

Table no. 2 Technical specification of the mower

6. Machine use

The manufacturer assures that the machine is fully operational. It has been checked according to quality control procedures and approved for use. However, this does not release the user from the obligation to check the machine condition after delivery.



Before each use of the mower, check its technical condition, and in particular the condition of the cutting unit, drive system, hydraulic system and guards.

6.1 Mower assembly

The manufacturer delivers a complete mower with the cutting unit cover unmounted (applies only to mowers with mechanical drive). The mower purchaser is required to install the cutting unit cover on their own.



Operation of the mower without the cutting unit cover installed or with the cover damaged or the apron raised poses a threat to the operator and the environment - prohibited.

The cover should be assembled in the following way:

- Tighten the M10x25 bolts (fig. 6 pos. 1) to the main frame.
- Tighten the tarpulin skirt with M6x16 bolts to the cutting unit cover (fig. 6 pos. 2).

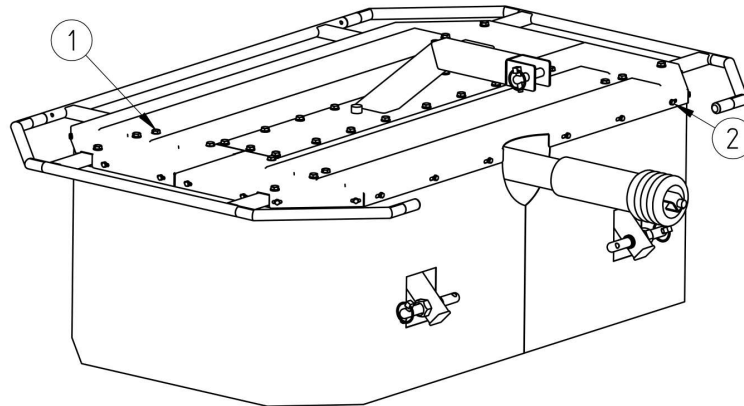


Fig 6 Cutting unit cover assembly

6.2 Linking the mower to the tractor



Make sure that the mounting elements of the vehicle and the machine are properly matched to each other so as to guarantee safe assembly and operation.
In case of uncertainty, always contact the manufacturer of the vehicle or machine.

A mower with a mechanical drive must be connected to a tractor with a three-point hitch.

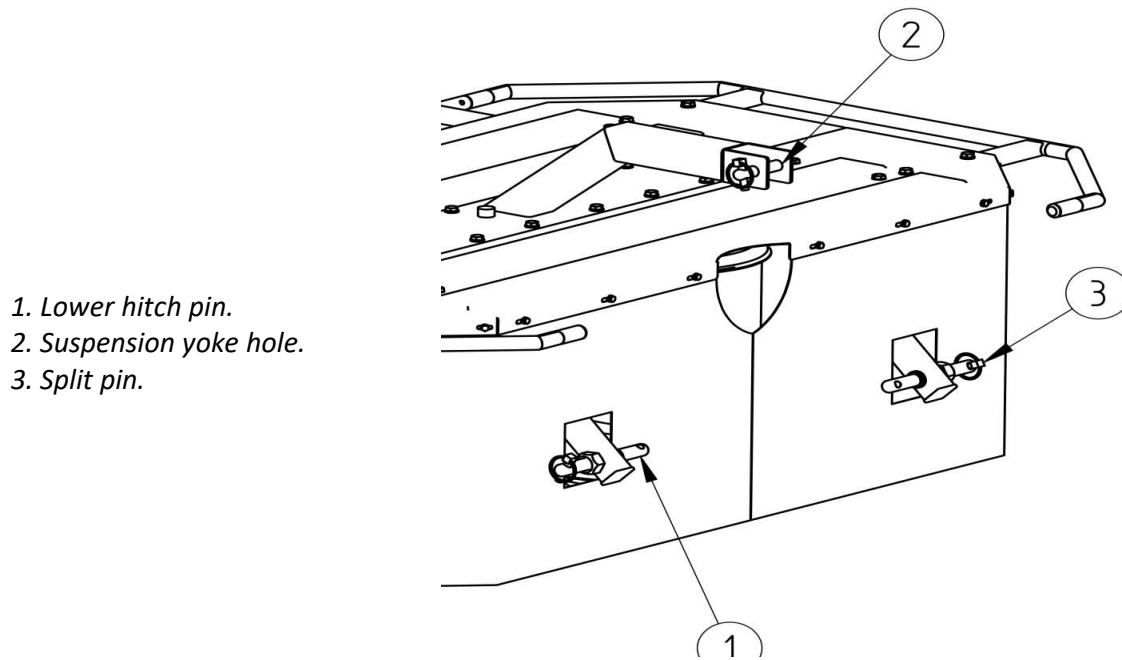


Fig 7 Mechanical mower hitch elements

To link the mower with the tractor:

1. Put the tractor link arms on the lower hitch pins (fig. 7 pos. 1) –left and then right - and secure with the split pin (fig. 7 pos. 3).
 2. Put the top link end in the suspension yoke using the yoke hole and secure with pin and split pin (fig. 7 pos. 2).
 3. Lift the mower, and position it in parallel position with the ground by using the top link,
 4. Lower the mower so that it rests on the sliding saucers. Be especially careful when lowering the mower in the horizontal position. Pay attention to the free space for the operation
- Adjust the length of the PTO shaft to the cooperating tractor in accordance with the shaft manual.

A mower with a hydraulic drive should be connected to a loader/tractor using the brackets.

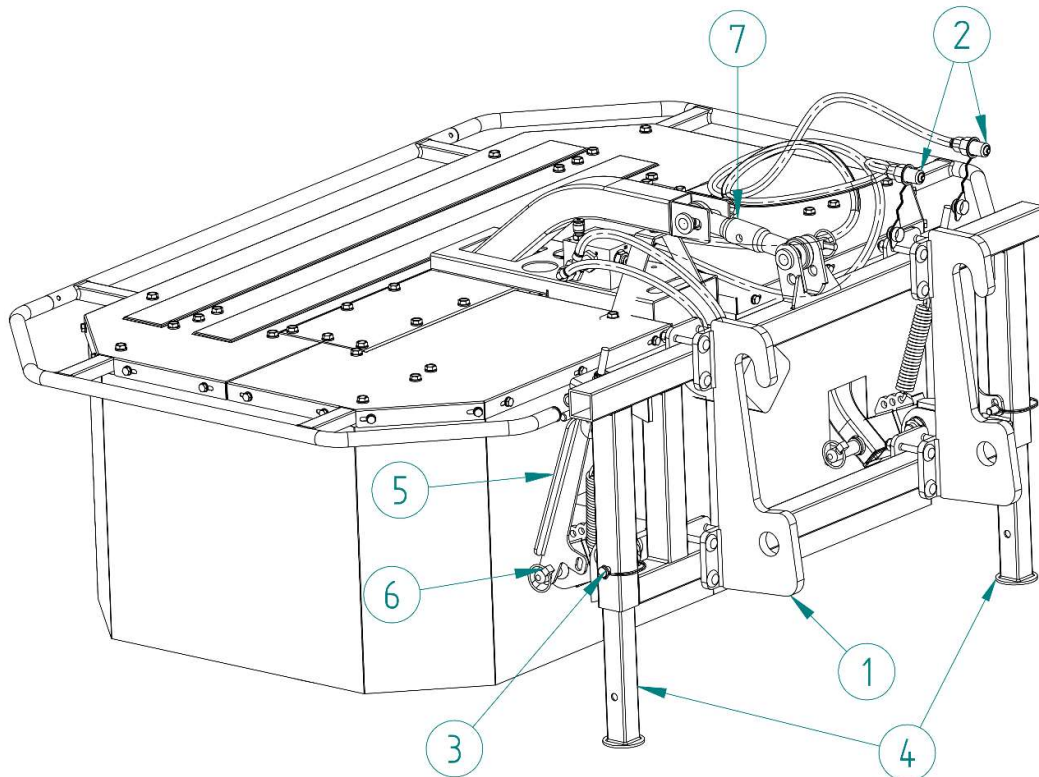


Fig 8 Hydraulic drive mower hitch elements

1. Brackets
2. Hydraulic hoses (oil supply and return)
3. Locking cotter pin
4. Support stands
5. Transport lock
6. Split pin
7. Top link

In order to connect the mower with hydraulic drive to the loader/tractor,:

- 1) Link the mower via the selected brackets (1) to the vehicle.
- 2) Lift the machine so that the split pins can be easily pulled out (3), retract the support stands (4) and secure it with the pins.
- 3) Lower the machine on to the ground , take out the pin(6), and change the transport lock setting (5) from the transport position (fig. 8) to the working position(rys. 9). Working position is secured by the pin(3).
- 4) Connect the hydraulic hoses (2) to the loader/ tractor.



Fig 9 Locking in the working position

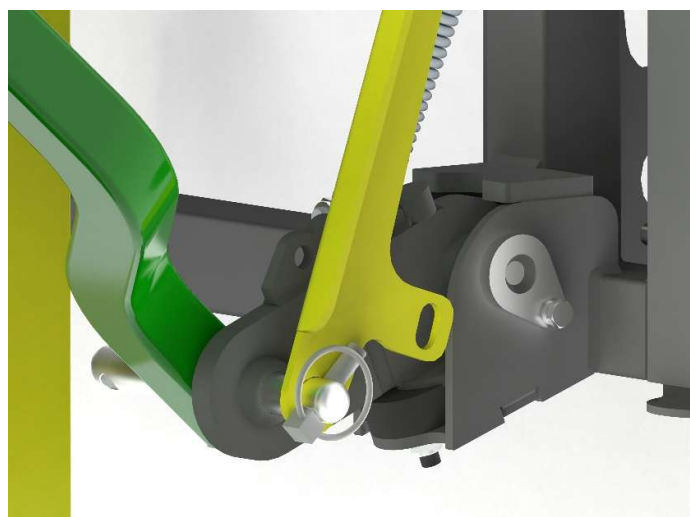


Fig 10 Locking in the transport position

6.3 Machine adjustment

The bottom saucers should be positioned horizontally to the ground after setting to the Working position.

The top link pin is recommended to be positioned in the middle of the yoke hole

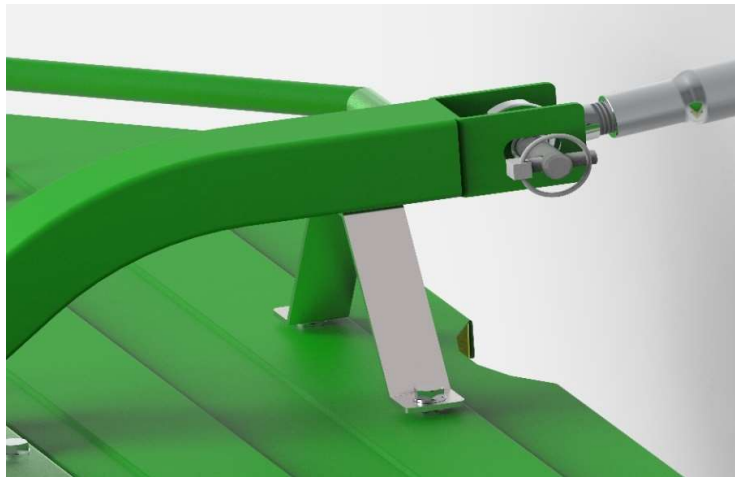


Fig 11 Correctly adjusted mower

To change the cutting height :

- 1) Set the mower to the transport and lift to the top position, pull the tractor handbrake and turn off the engine.
- 2) Secure the mower against falling, additionally support one of the discs with a support stand,
- 3) Remove the bolts (fig. 12 pos. 1) and remove the bottom saucer (fig. 12 pos. 5),
- 4) Remove the bolts (rys. 12 poz. 3) holding the bottom saucer holder (fig. 12 pos. 2) and remove it,
- 5) Adjust the cutting height (fig. 12 pos. 4 –spacers),
- 6) Assemble in the opposite order

Carry out the same actions on the other working part of the cutting unit.

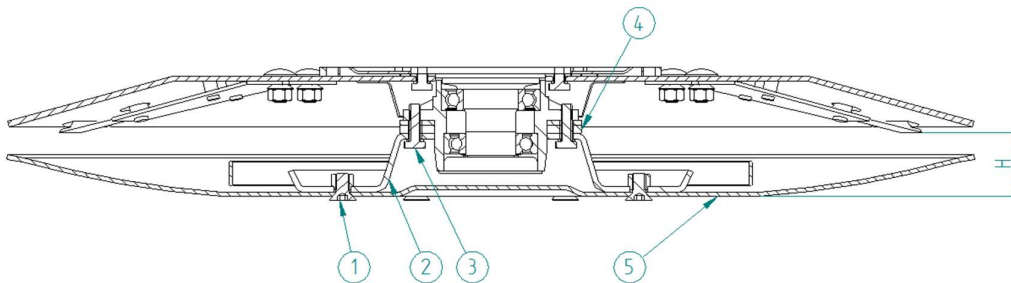


Fig 12 Cutting height adjustment: H) Cutting height

7. Technical service of the mower

All activities related to the operation of the machine may be performed by the operator of the vehicle to which it is mounted, provided that he is authorized to operate this vehicle.



After disconnecting the machine from the vehicle, it should be stored under a roof on a flat and hard surface and a support stand.

Before connecting the machine to the tractor, the machine operator must each time check the technical condition of the machine and prepare it for a test run. For this purpose::

- Read the contents of this manual and follow the recommendations contained therein,
- Get familiar with the build of the machine and understand the machine working principle,
- Check the condition of all machine elements,
- Grease the machine as indicated in the manual,
- Check the condition of the hitch pins and split pins,
- Check the oil level in the gearbox,
- Check the condition of the bolt connections,
- Check the condition of cutting blades.



Only the use of original manufacturer's parts guarantees safe and reliable operation of the device. Using non-genuine parts or repairing damaged parts voids the warranty.

If all the above actions have been performed and the machine is in good technical condition, it can be hitched to the tractor.

Connecting the machine to the tractor is described in section 6.2 Linking the mower to the tractor

7.1 Blades replacement

Cutting blades should be replaced with special safety rules:

1. Use only original and serviceable parts of the cutting unity.
2. Blade replacement includes a set each time. At the same time, remember about the eved distribuutin of rotating masses and even wear of the blades.
3. Check the conditio of cooperating elements : blade holder, blade. Replace with new ones if the damage is noticed
4. Please refer to the Table no 3 when selecting the poper tightening torques for bolts and nuts when tightening the bolt connections.



Always replace worn or damaged components with new ones.
Working with damaged elements of the working plate: holder or knife is prohibited.



Elaboration of the blades condition should be carried out each time before starting work and after each collision with an obstacle, e.g. stone, wood, metal. Wear protective gloves.

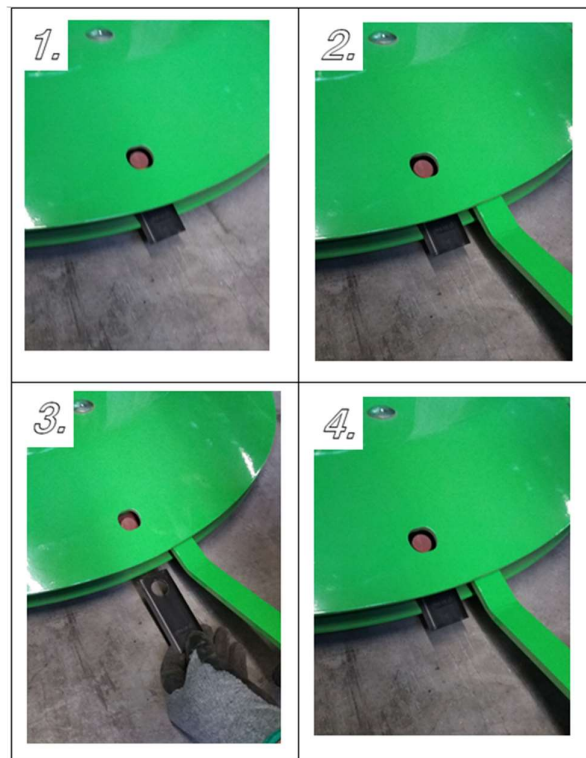


Fig 13 Blade replacement

Blade replacement or rotation is performed using a special spanner as shown in Fig. 13. Insert the spanner between the working saucer and the holder, so that the round part of the spanner is above the blade holder.

Open the holder until there is a slack allowing the blade to be removed.

After inspecting the blades and holders, proceed to the assembly of the blades by mounting them in the same place or on the adjacent saucer (with the opposite direction of rotation) provided that they are not damaged or replacing them with new ones by releasing the pressure of the key on the holder. When replacing holders and blades, pay attention to their proper location on individual saucers - it is shown in the figure below.

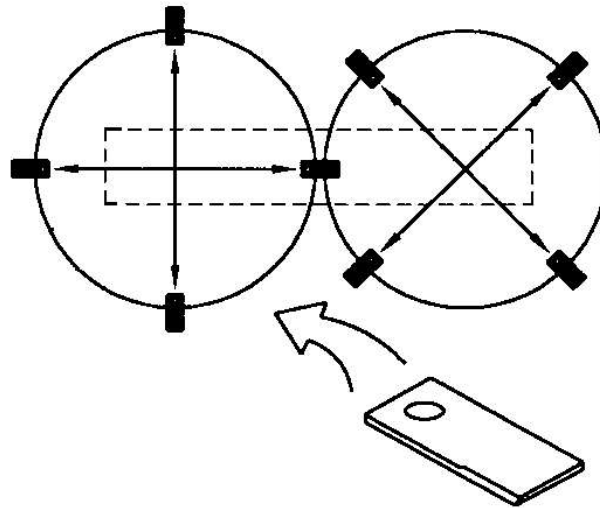


Fig 14 Correct cutting blade positioning scheme

7.2 After work maintenance

Each time after finishing work, the machine should be cleaned, **the lower part of the working unit (holders, knives, around the supporting plate)** should be pressure washed and placed on a flat, hard surface. The connection of parts and assemblies should be checked.

Damaged and worn parts must be replaced with new ones. Check all screw connections and tighten loose connections according to Table no. 3.

Caution:

The machine manufacturer - Talex, provides access to all parts.

Durability	6.8	8.8	10.9	12.9
Metrical 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 no. 3 Tightening torques for bolts and nuts

7.3 Greasing



All maintenance and service work is performed with the vehicle engine turned off, pressure and rotation stopped, with the vehicle and machine secured.



Avoid contact with oil!
 Use personal protective equipment in the form of: protective clothing, footwear, gloves and glasses.



The PTO shaft should be operated and lubricated strictly in accordance with the instructions of the PTO shaft manufacturer.

To ensure proper operation, in the gearbox:

- I) After every 10 hours of operation, check the oil level with a clean rod inserted into the breather hole. The oil level should be: min 20 to max 30mm.
- II) Change the oil after each working season.

Required amount of oil in the gearbox: 3 liters

The manufacturer recommends using oil: SP460 (based on 80W90) + admixture of LT 43 lithium grease.

If the oil level drops, remove the cause of the leak, then top up the oil to the required amount.

7.4 After season maintenance

Includes all activities listed in point: 7.2 After work maintenance. In addition, the machine should be stored under a roof on a flat and hard surface and a foot. Pay attention to the tightness of the paint coating. In the event of defects, clean these places and fill in the gaps by applying a fresh layer of protective paint.

The tension of V-belts in the off-season should be reduced (V-belts should be loose). Retighten them before working again.



In the event of a leak in the hydraulic system, it is essential to replace damaged parts and assemblies of the system in order to prevent contamination of the environment.

Hydraulic hoses, regardless of their external condition, should be replaced after 5 years.

7.5 Possible faults and ways of their elimination

<i>Fault symptoms</i>	<i>Cause of occurrence</i>	<i>Repair method</i>
Increased mower vibration	Unevenly worn or damaged cutting unit components	Replace worn parts with new ones
Bad cut and clogging of the cutting unit	Blunt or damaged blades	Replace blunt or damaged blades with new sets Blunt on one side, mount on a saucer with the opposite rotation direction

Table no. 4 Possible faults and ways of their elimination

8. Disassembly, scrapping and environmental protection



Protect your hands (body) from injury and harmful effects of lubricants and oils. Use protective gloves and tools in good working order.

Machine elements that may move or rotate during disassembly should be properly secured.

Worn or damaged parts obtained during the repair (scrapping) should be stored in a separate place with limited access for people and animals. Used elements should be delivered to a scrap collection point. Used plastic elements should be delivered to a chemical waste storage (disposal) point.

Do not spill the oil when filling or changing the oil. Used oils should be stored in sealed containers and periodically delivered to collection points (disposal).

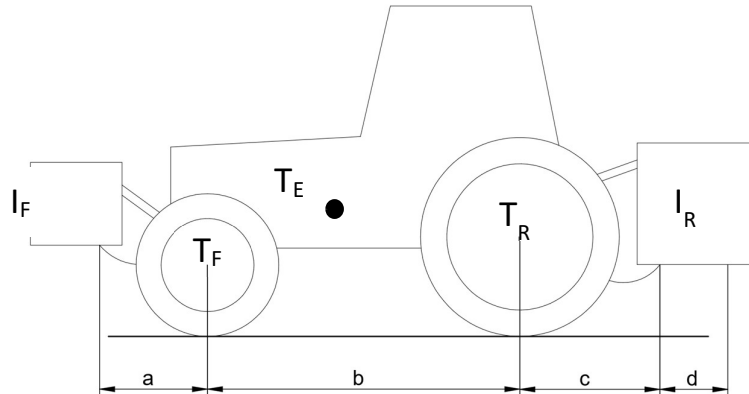


Abandoned parts or elements of machines, spilled oil may pose a risk of accident and cause environmental pollution and violate applicable regulations.

9. Stability of tractor-machine unit suspended

To verify the overall stability, the following equation can be used to calculate the minimum front load $I_{F,min}$, expressed in kg, to achieve a front axle load equal to 20% of the tractor's empty weight..

$$I_{F,min} = \frac{[I_R \times (c+d)] - (T_F \times b) + (0,2 \times T_E \times b)}{a+b}$$



Explanation:

T_E -tractor empty mass[kg]

T_F - Front axle load of an unloaded tractor [kg]

T_R - Rear axle load of an unloaded tractor [kg]

I_F - weight of the front mounted machine/front weights [kg]

I_R - weight of the rear mounted machine/rear weights [kg]

a- The distance between the center of gravity of the front-mounted machine/front weights and the center of the front axle [m]

b- tractor wheelbase [m]

c- The distance from the center of the rear axle to the center of the rear suspension ball joints[m]

d- The distance between the center of the rear suspension ball joints and the center of gravity of the rear-mounted machine / rear weights [m]

10. Spare parts catalogue

9.1 Spare parts ordering rules:

Must always be specified in the order:

- Purchaser address
- Precise delivery address (location of the machine or method of collection),
- serial number of the mower and year of production (according to the name plate on the machine),
- Spare part index number,
- Spare part name,
- Quantity .



Spare parts must be ordered from the machine sales points or from the manufacturer.

Only the use of original manufacturer's parts guarantees safe and reliable operation of the device. Using non-genuine parts or repairing damaged parts voids the warranty.

The manufacturer reserves the right to make structural changes to the parts shown in the individual assembly drawings of the parts catalogue. These changes may not always be updated in the manual and parts catalogue. Individual drawings of spare parts may differ from the actual state.

TALEX Spółka z ograniczoną odpowiedzialnością

ul. Dworcowa 9C

77-141 Borzytuchoń

Tel. +48 59 821 13 40

www.talex-sj.pl/en

e-mail: biuro@talex-sj.pl

9.2 General build

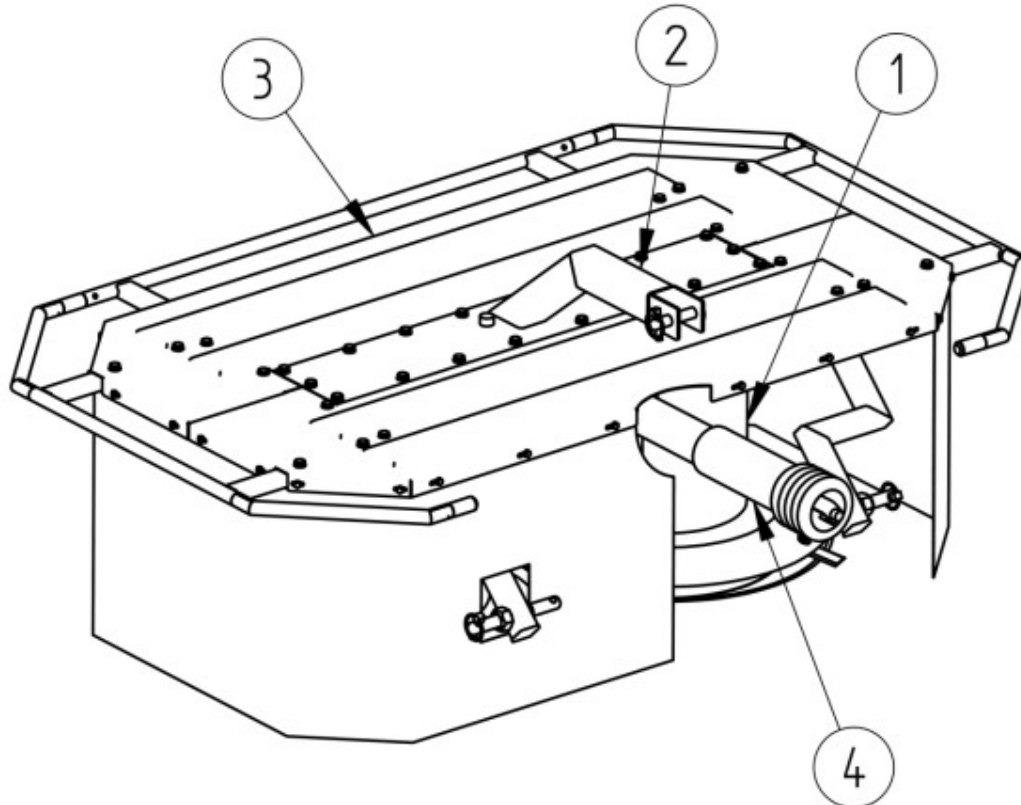


Fig 15 General build of the mechanical drive mower

GENERAL BUILD OF THE MECHANICAL DRIVE MOVER			
Pos.	Name	Chapter/ Index	Qty.
1.	Cutting unit	Chapter. 9.3	2
2.	Main frame	Chapter. 9.4	1
3.	Cover	Chapter. 9.5	1
4.	One way clutch PTO shaft 460Nm L-660	T000905	1

Table no. 5 General build (mechanical drive)

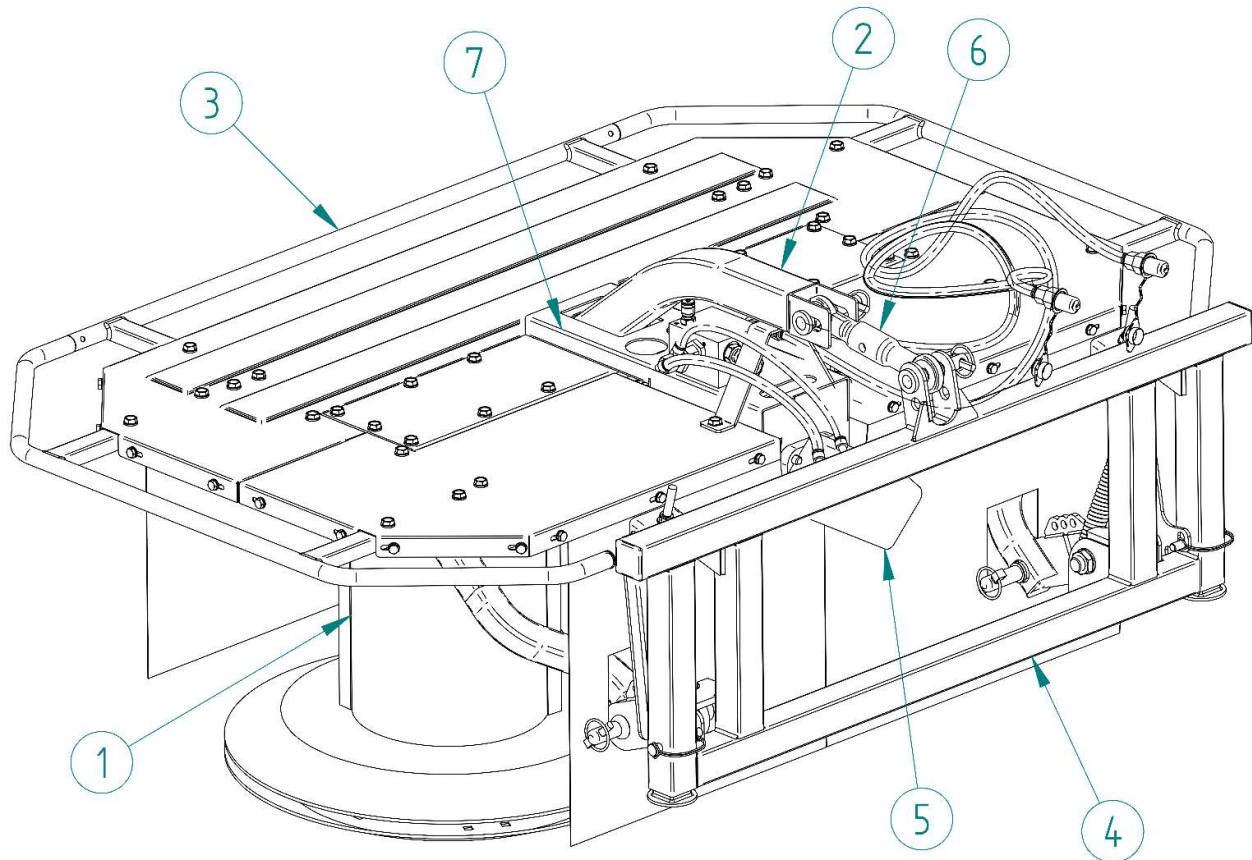


Fig 16 General build of the hydraulic drive mower

GENERAL BUILD OF THE HYDRAULIC DRIVE MOWER			
Pos.	Name	Chapter/ Index	Qty.
1.	Cutting unit	Chapter. 9.3	2
2.	Main frame	Chapter. 9.4	1
3.	Cover	Chapter. 9.5	1
4.	Suspension adapter	Chapter. 9.6	1
5.	Hydraulic drive system	Chapter. 9.7	1
6.	Top link	T003068	1
7.	Hydraulic motor cover	P300137	1

Tabela 6 General build (hydraulic drive)

9.3 Cutting unit – Working part

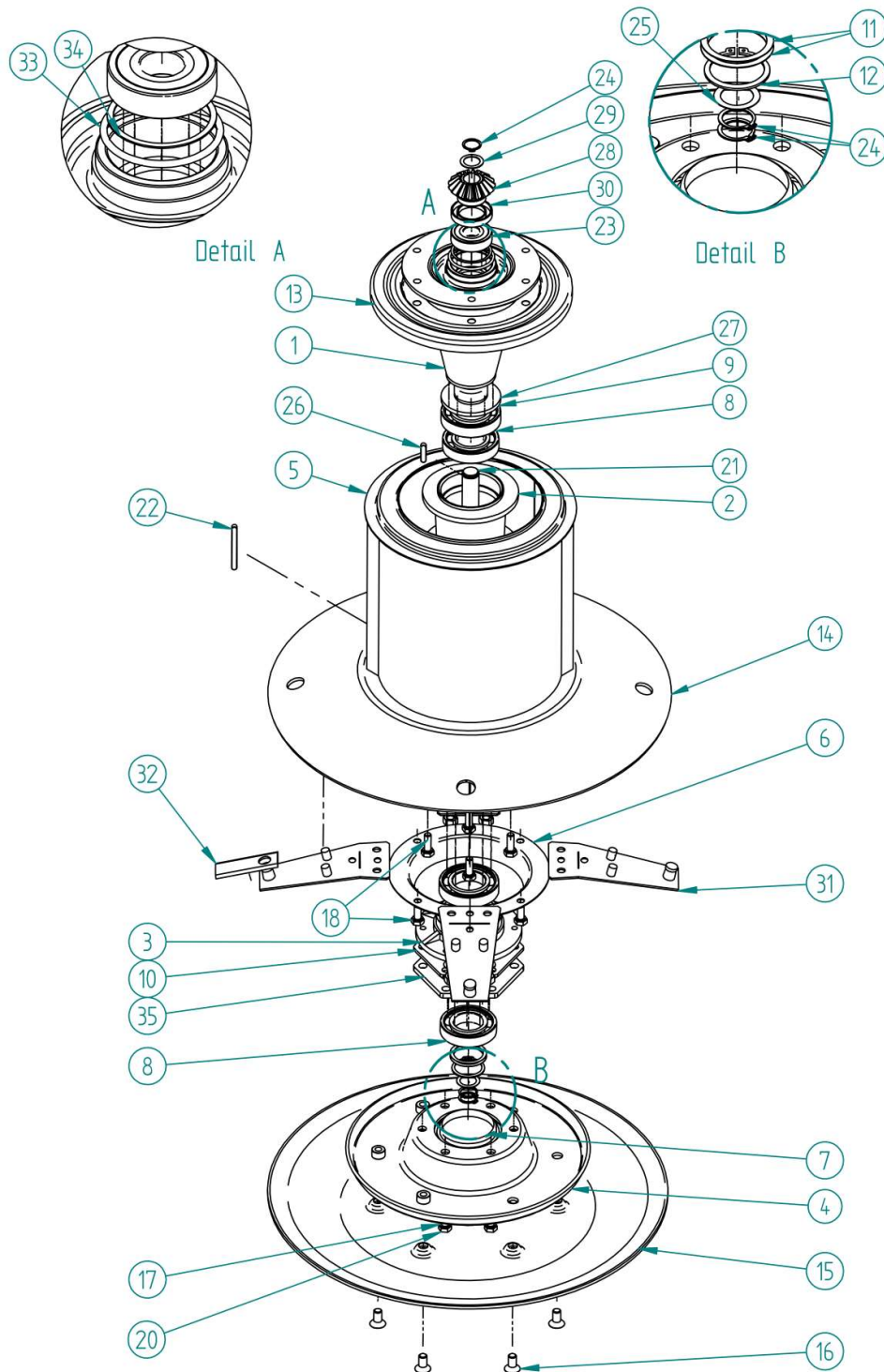


Fig 17 Working part of cutting unit

CUTTING UNIT – WORKING PART			
Pos.	Name	Index	Qty.
1.	Drum hub	T000394	1
2.	Top disc saucer hub	T000396	1
3.	Bottom disc saucer hub	T000397	1
4.	Resistance disc	T000833	1
5.	Drum cover	T000345	1
6.	Hub cover bottom	T000363	1
7.	Resistance disc cap cover	T000343	1
8.	6209 RS Bearing	T000198	2
9.	6210 RS Bearing	T000199	2
10.	Thin spacer ring	T000398	1
11.	45x55x1 Washer	T000445	2, depending on the needs 0,3;0,5 or 1mm
12.	45Z Circlip	T000414	1
13.	Drum top cover	T000346	1
14.	Working disc	T000834	1
15.	Sliding disc	T000837	1
16.	12*25 cl.8.8 galv. Mower bolt	T000938	6
17.	10 galv. Spring washer	T000450	6
18.	M10x25 DIN 6921 cl.10.9 Self-locking bolt	T000814	8
20.	M10x25 – 8.8 galv. Bolt	T000740	6
21.	Bearing shaft	T000925	1
22.	Feather key. 8x7x80	T000952	1
23.	6305 ZZ Bearing	T000212	1
24.	25Z Circlip	T000424	3
25.	25x1 Washer	T000444	4, depending on the needs 0,3;0,5 or 1mm
26.	Feather key. 8x7x32	T000953	1
27.	Bearing cover	T000367	1
28.	Small bevel gear	T000113	1
29.	25x1 washer	T000444	2, depending on the needs 0,3;0,5 or 1mm
30.	40x62x10 Seal	T000887	1
31.	Blade holder	T000846	4
32.	Cutting blade	T000311	4
33.	fi70x4 O ring	T000402	1
34.	55x62 Washer	T000446	8
35.	Thick spacer ring	T000398	1

Table no. 7 Working part of cutting unit

9.3.1 Cutting unit working part bearing hub

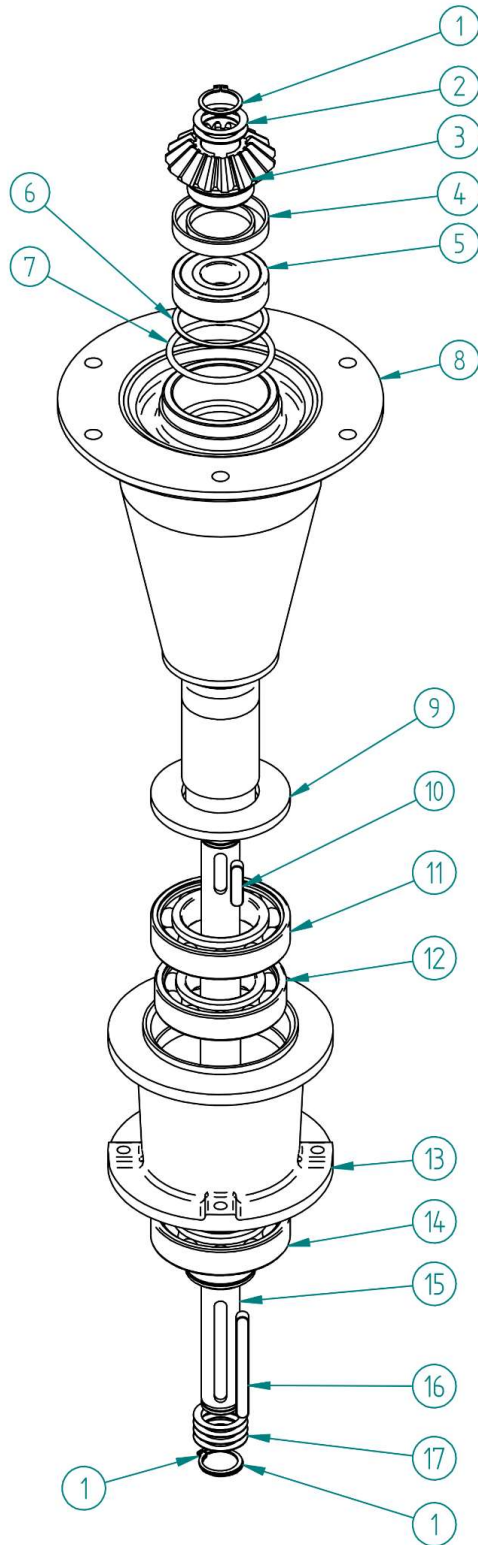


Fig 18 Bearing hub

BEARING HUB			
Pos.	Name	Index	Qty.
	Bearing unit	P001153	2
1.	25Z Circlip	T000424	3
2.	25x1 Washer	T000444	2 depending on the needs 0,3;0,5 or 1mm
3.	Small bevel gear	T000113	1
4.	40x62x10 Seal	T000887	1
5.	6305 ZZ Bearing	T000212	1
6.	50x62 Washer	T000446	2, depending on the needs 0,3;0,5 or 1mm
7.	fi70x4 O ring	T000402	1
8.	Drum hub	T000394	1
9.	Bearing hub cover	T000367	1
10.	Feather key. 8x7x32	T000953	1
11.	6210 RS Bearing	T000199	1
12.	6209 2RS Bearing	T000198	1
13.	Bottom disc saucer hub	T000396	1
14.	6210 RS Bearing	T000199	1
15.	Bearing shaft	T000925	1
16.	Feather key. 8x7x80	T000952	1
17.	25x1 washer	T000444	4, depending on the needs 0,3;0,5 or 1mm

Table no. 8 Complete bearing hub

9.4 Main frame

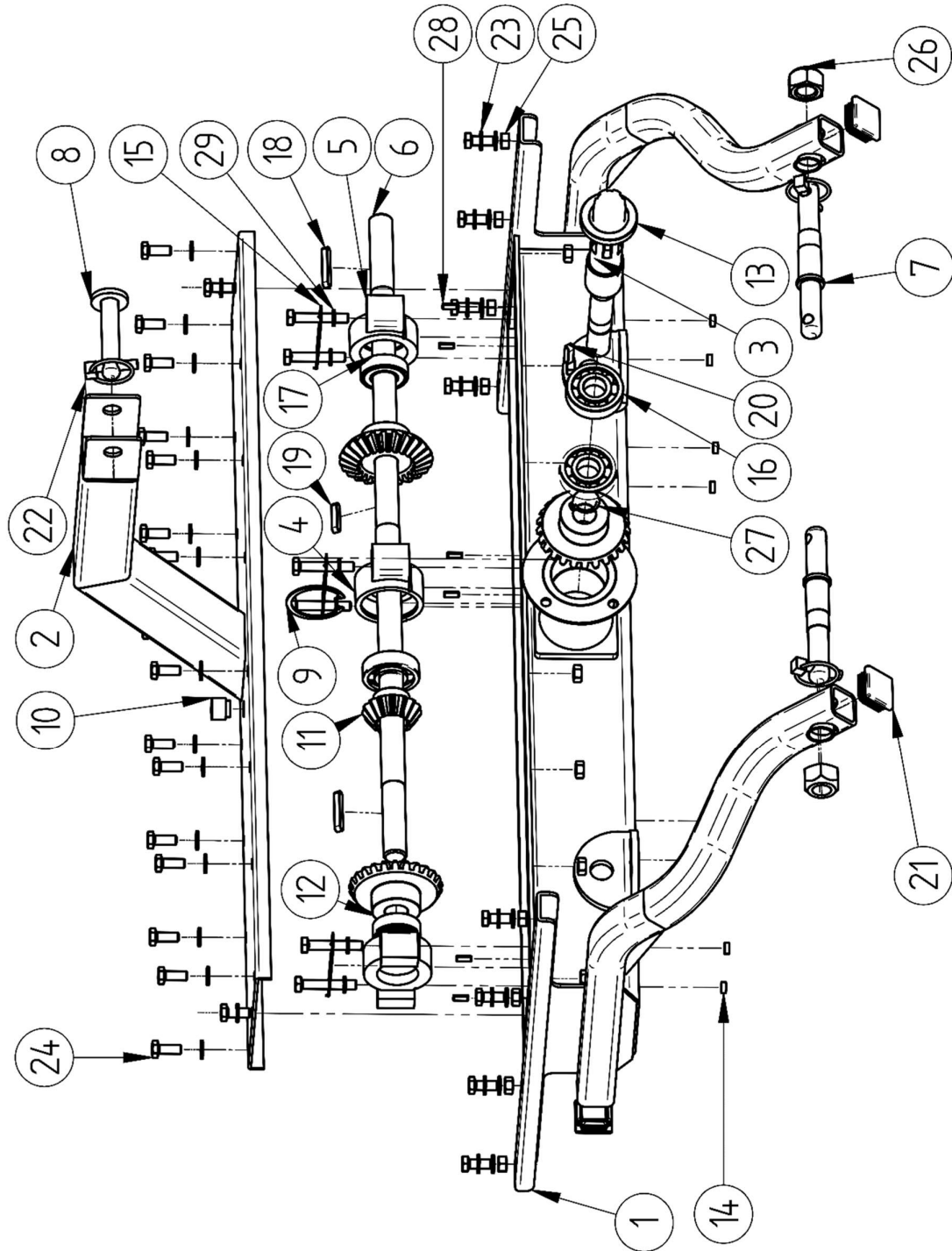


Fig 19 Main frame

MAIN FRAME			
Pos.	Name	Index	Qty.
1.	Main frame	P001004	1
2.	Main frame top cover	P001052	1
3.	Reducing gear shaft	T000920	1
4.	Large bearing housing	T000324	1
5.	Small bearing housing	T000326	1
6.	Main frame shaft	T000900	1
7.	Bottom hitch pin	P001066	4
8.	Top hitch pin	P001059	4
9.	W62 Circlip	T000418	2
10.	Plug	T000993	1
11.	z-15 Conical gear	T000113	1
12.	z-25 Conical gear	T000115	1
13.	40 x 62 x 10 Seal	T000887	1
14.	Sealing bushing	T000866	1
15.	Bent washer	T000449	1
16.	6305 Bearing	T000184	2
17.	6205 Bearing	T000196	1
18.	Feather key 8 x 7 x 50	T000945	1
19.	Feather key 8 x 7 x 36	T000951	1
20.	Feather key 8 x 7 x 32	T000953	1
21.	Square plug 40x40 x 1.0-3.0	T000971	1
22.	Universal plug LP10KR	T000981	1
23.	M10 OC Flat washer	T000456	1
24.	M10x25 8.8 galv. Bolt	T000740	1
25.	M10 Nut	T000265	1
26.	M24x1.5 Low nut	T000281	20
27.	Z25 Circlip	T000424	3
28.	6x16 Spring pin	T000086	6
29.	M10 Spring washer	T000450	10

Table no. 9 Main frame

9.5 Cutting unit cover

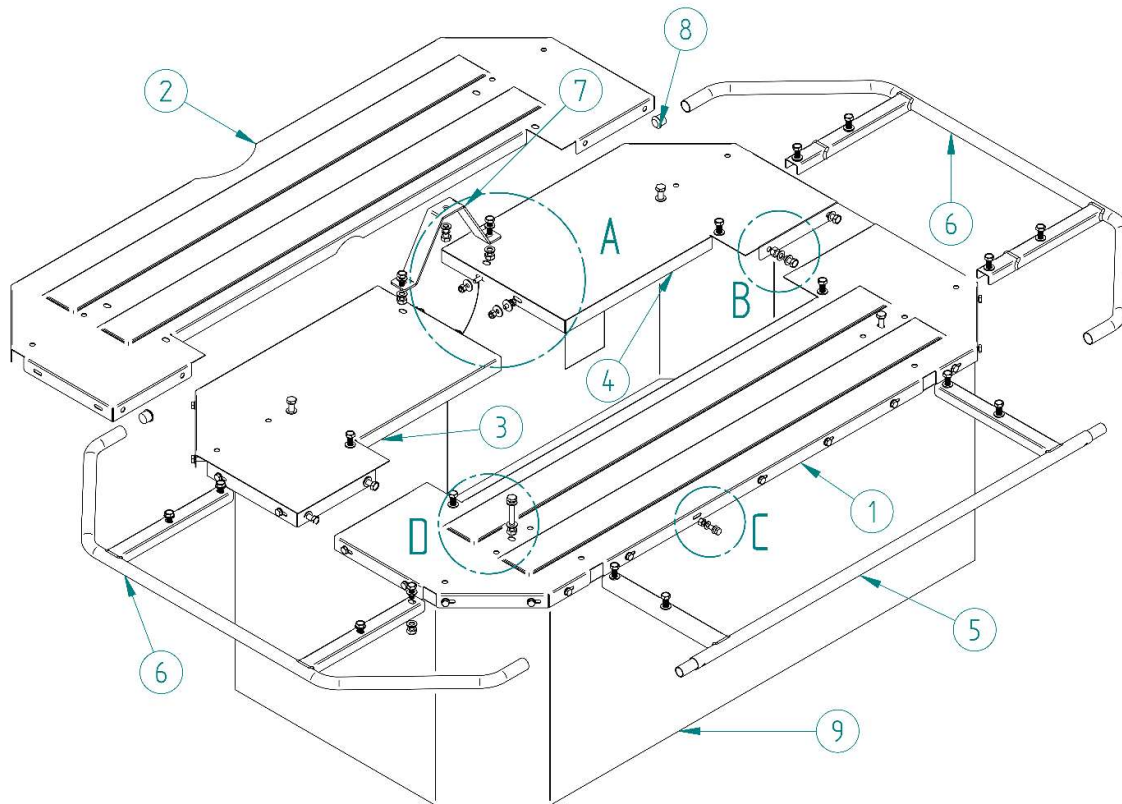


Fig 20. Cutting unit cover (pt.1 of 5)

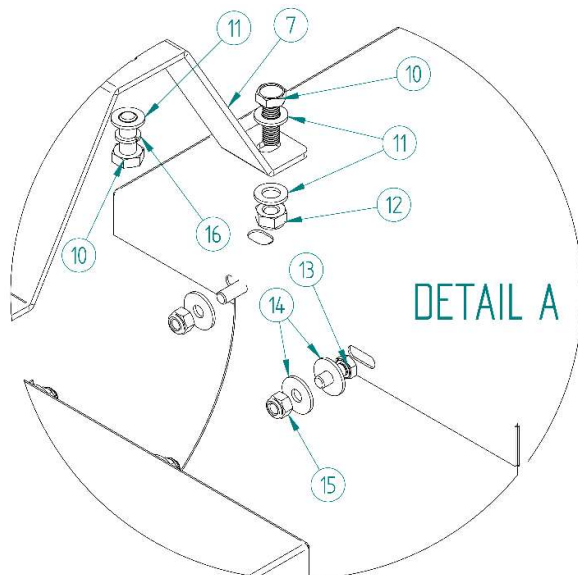


Fig 21. Cutting unit cover (pt.2 of 5)

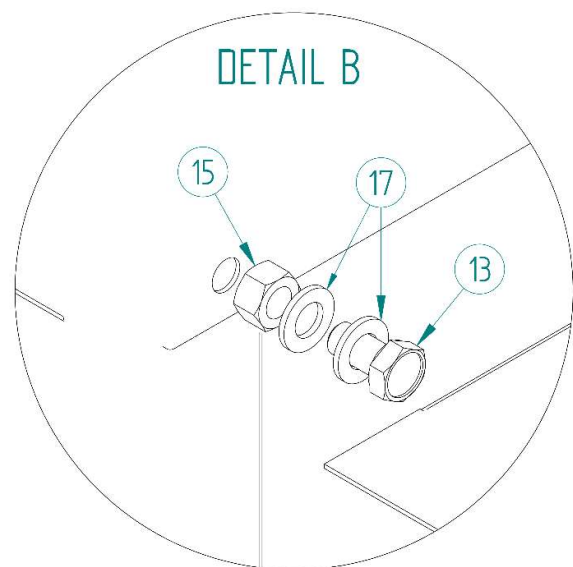


Fig 222. Cutting unit cover (pt.3 of 5)

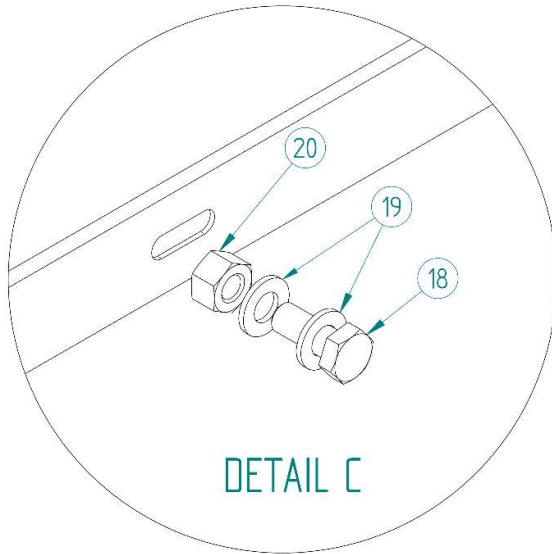


Fig 233. Cutting unit cover (pt.3 of 5)

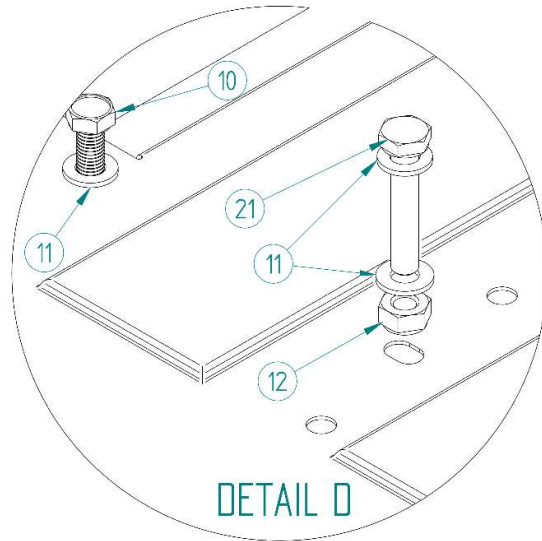


Fig 244. Cutting unit cover (pt.5 of 5)

CUTTING UNIT COVER			
Pos.	Name	Index	Qty. Mech/Hyd
1.	Top cover	P001106	1
2.	Bottom cover (Mechanic drive mower only)	P001107	1/0
3.	Right bottom cover (Hydraulic drive mower only)	P300139	0/1
4.	Left bottom cover (Hydraulic drive mower only)	P300138	0/1
5.	Central barrier	P001110	1
6.	Side barrier	P001114	2
7.	Cover support	P001122	1
8.	Round plug Fi 25 x 1.0-3.0	T000970	2
9.	Protective skirt	T000045	1
10.	M10x25 galv. cl.8.8 DIN 933 Bolt	T000740	19
11.	M10 galv. DIN 125 Washer	T000456	45
12.	M10 galv. DIN 985 Self-lock nut	T000292	22
13.	M8x20 galv. cl.8.8 DIN 933 Bolt	T000804	4/8
14.	M8 galv. DIN 9021 Large washer	T000443	0/8
15.	M8 galv. DIN 985 Self-lock nut	T000256	4/8
16.	M10 galv. DIN 7980 Spring washer	T000450	1
17.	M8 galv. DIN 125 Washer	T000471	8
18.	M6x16 galv. 8.8 DIN 933 Bolt	T000800	29
19.	M6 galv. DIN 125 washer	T000469	58
20.	M6 galv. 8 DIN 934 Nut	T000283	29
21.	M10x55 galv. 8.8 DIN 933 Bolt	T002282	4

Table no. 10 Cutting unit cover

9.6 Suspension adapter

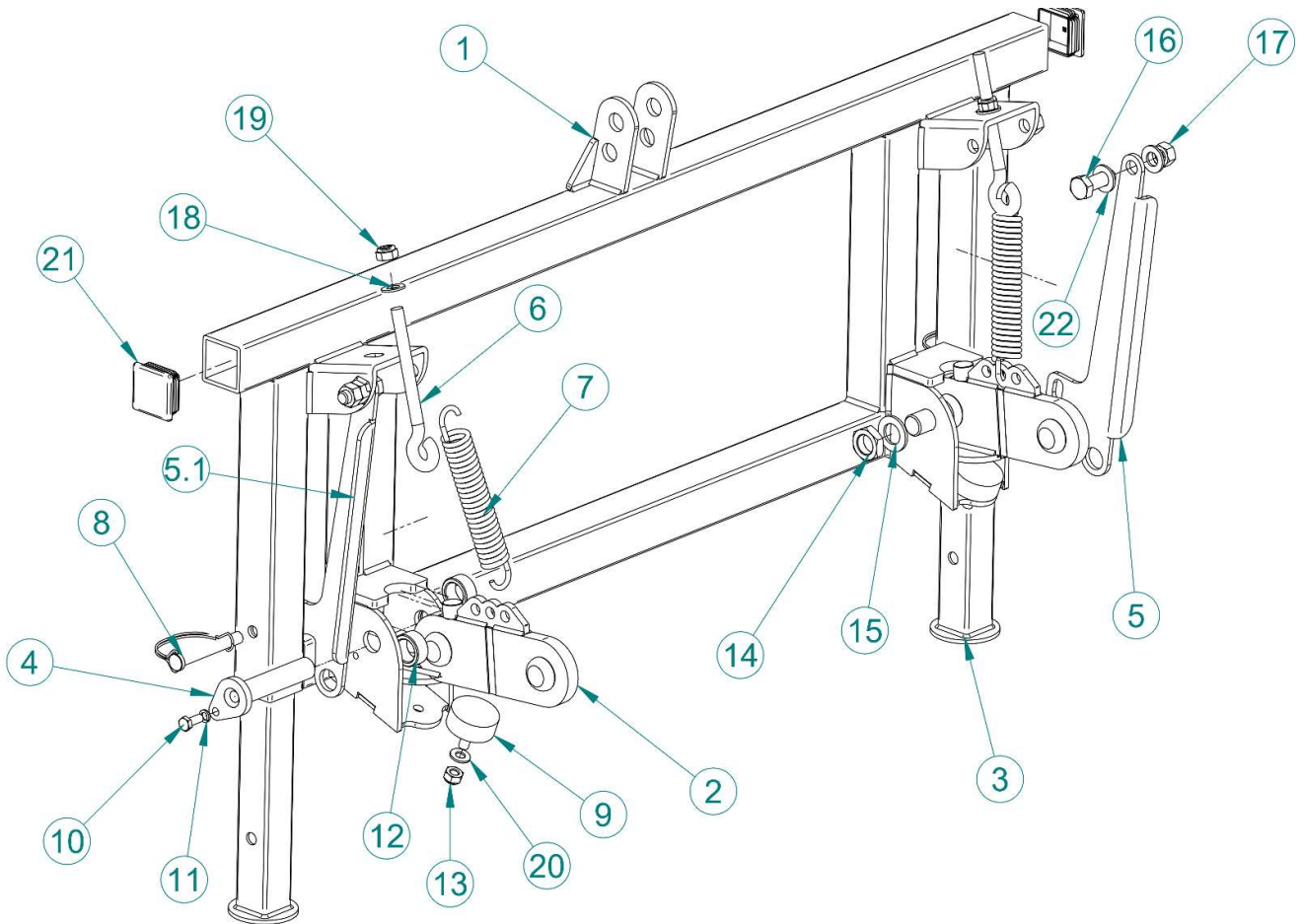


Fig 25. Suspension adapter

SUSPENSION ADAPTER			
Pos.	Name	Index	Qty.
1.	Bracket	P300136	1
2.	Ball joint link	P300140	2
3.	Support stand	P300143	2
4.	Arm pin	P610029	2
5.	Left transport lock	P300148	1
5.1	Right transport lock	P300150	1
6.	Hook 12*170	T000064	2
7.	Relief spring	T001296	2
8.	Split pin	T000992	2
9.	Rubber bumper	T002706	2
10.	M8x20 galv 8.8 full thread DIN 933 Bolt	T000804	2
11.	M8 galv. DIN 7980 Spring washer	T000455	2
12.	Spacer	P300147	4
13.	M10 galv. DIN 985 Self-lock nut	T000292	2
14.	M22 x 1,5 galv. DIN 934 Nut	T000277	2
15.	M22 galv. DIN 125 Washer	T000463	2
16.	M14 x 40 galv 8.8 DIN 933 Bolt	T000767	2
17.	M14 galv. DIN 934 Nut	T000269	2
18.	M12 galv. DIN 125 Washer	T000458	2
19.	M12 galv. DIN 985 Self-lock nut	T000291	2
20.	M10 galv. DIN 125 Washer	T000456	2
21.	50x50x5 Plug	T000966	2
22.	M14 galv. DIN 125 Washer	T000459	4

Table no. 11 Suspension adapter

9.7 Hydraulic drive system

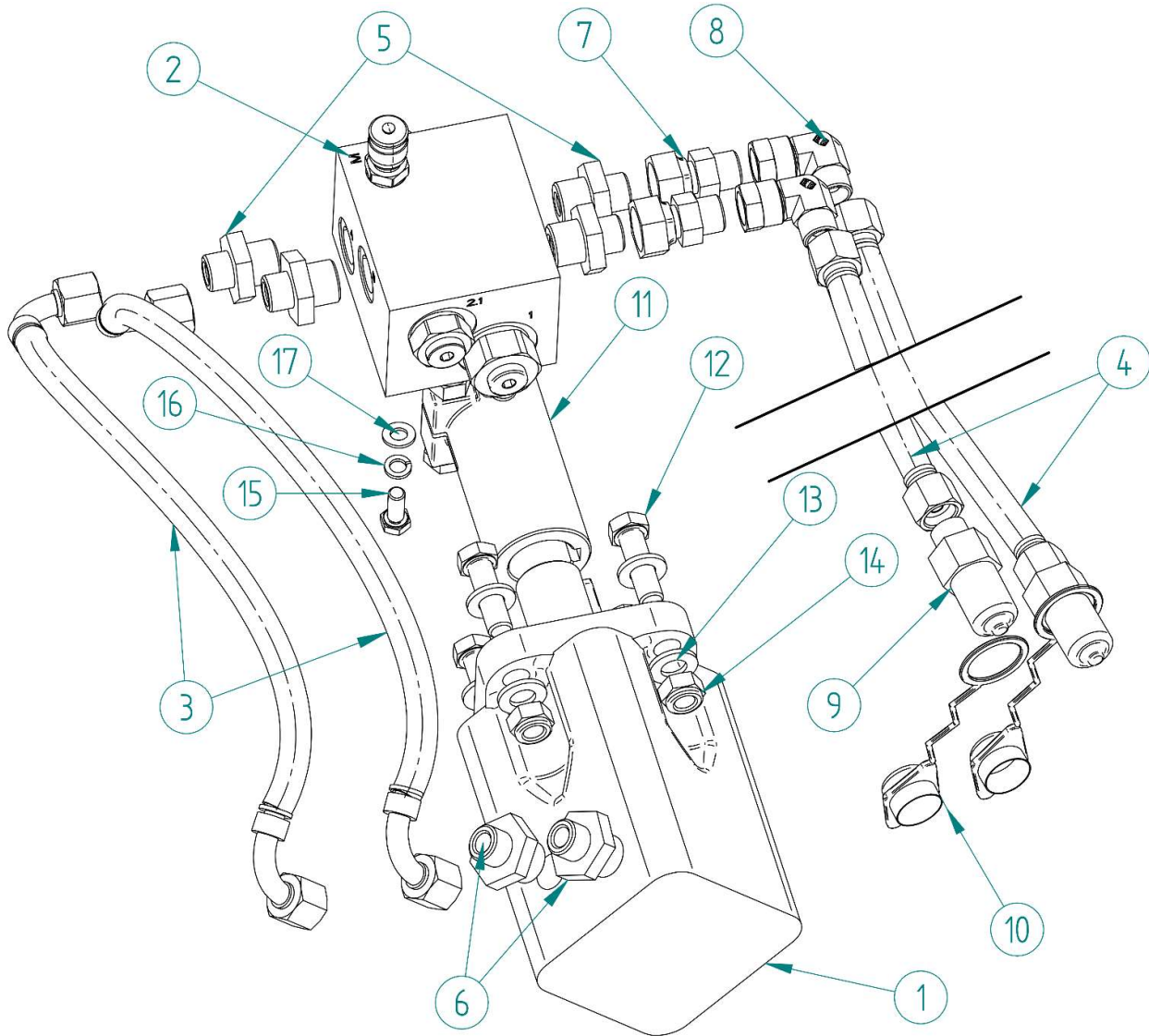


Fig 26. Hydraulic drive system

HYDRAULIC DRIVE SYSTEM			
Pos.	Name	Index	Qty.
1.	Hydraulic motor BM3-80 (SMS-80)	T003064	1
2.	Hydraulic block	T002228	1
3.	Hydraulic hose P51/P52 M18*1,5 1SN DN8 L-400	T000561	2
4.	Hydraulic hose P51/P51 M18x1,5 DN10 L-1500	T003087	2
5.	Coupler ZN-140 G1/2 M18x1,5 ED/12L S27	T000578	4
6.	Coupler ZN-140 G3/4 / M22x1,5 ED/15L	T000581	2
7.	Thread fitting AB M22x1,5/M18x1,5 15L/12L	T001037	2
8.	Elbow fitting AB M18x1,5 12L/12L	T001032	2
9.	EURO coupler ISO 12,5 M18x1,5	T000995	2
10.	Coupler cover	T000488	2
11.	Reduction buch, 1 x 1-3/8 Z	T003013	1
12.	M12 x 40 galv. cl. 8.8 DIN 933 Bolt	T000757	4
13.	M12 galv. DIN 125 Washer	T000458	8
14.	M12 galv. DIN 985 Self-lock nut	T000291	4
15.	M8x20 galv. 8.8 full thread DIN 933 Bolt	T000804	2
16.	M8 galv. DIN 7980 Spring washer	T000455	2
17.	M8 OC DIN 125 Washer	T000471	2

Table no. 12 Hydraulic drive system



11. Warranty card

WARRANTY CARD

Serial number	Type
Year of built	qc

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 guarantee does not cover normal wear and tear of parts such as bearings, support wheels, roller brushes, side brushes, elements of hydraulic installations (hydraulic couplings, hydraulic motors, rubber hoses, valves, regulators, etc.), elements of the irrigation installation (water pump, water filter, spray nozzles), rubber cover, fasteners, etc.

Date of sale: _____
(Day, month, year) (signature and stamp of the point of sale)



12. Warranty repairs record

WARRANTY REPAIRS RECORDS

Filled in by the manufacturer

Date of complaint claim: _____

The scope of repair and parts used: _____

Date of complaint processing: _____

Warranty extended until: _____

(signature and stamp of the service)

Date of complaint claim: _____

The scope of repair and parts used: _____

Date of complaint processing: _____

Warranty extended until: _____

(signature and stamp of the service)

Date of complaint claim: _____

The scope of repair and parts used: _____

Date of complaint processing: _____

Warranty extended until: _____

(signature and stamp of the service)

Date of complaint claim: _____

The scope of repair and parts used: _____

Date of complaint processing: _____

Warranty extended until: _____

(signature and stamp of the service)



13. Warranty form



WARRANTY FORM NO.

Full name :

Address :

Postcode:.....

City :

Telephone number:.....

Email address :

Means of complaint claim:.....

Name of the subject of complaint:.....

Name of the dealer :

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

Description of fault damage:.....

.....

.....

Complaint resolution date :

Complaint resolution method and form:.....

.....

.....

Date the fault occurred / was discovered:20.....

.....
Date, full name

Declaration of conformity WE

Within the meaning of the Machinery Directive 2006/42/WE, enclosure II,1.A

Manufacturer: **TALEX Sp. z o.o.** address: *ul. Dworcowa 9C 77-141 Borzytuchoń*

The undersigned hereby declares that the product

Brand (trade name): *Rotary mover*

Function: mowing grass, cutting weeds and small bushes

type/model: *RATA HYDRO 1,35; MINI MINI 1,35* serial number:

Meets the requirements of the following EU directives:

- **Machine directive 2006/42/WE** from 17.05.2006 r. (Dz.U. L 157 from 9.06.2006 r. p.24) and its modification 2009/127/WE from 21.10.2009 r. (Dz.U. L 310 from 25.11.2009 r. p.29).

Meets the requirements of the following harmonized standards:

- **PN-EN ISO 4254-1:2016-02** Agricultural machinery. Safety. Part 1: General requirements
- **PN-EN 15811:2015-04** Agricultural machinery – Fixed and locked guards, with or without locking guards for moving transmission parts.
- **PN-EN ISO 14120:2016-03** Machinery safety – Guards – General requirements for the design and construction of fixed and movable guards
- **PN-EN 12100/2012** Machinery safety. General principles of design .Risk assessment and risk reduction
- **PN-ISO 11684/1998** Safety signs and hazard pictograms
- **PN-EN ISO 4413:2011** Hydraulic drives and controls – General rules and safety requirements for systems and their components
- **PN-ISO 17101-1:2017-03** Agricultural machinery specifications and acceptance criteria for the thrown-object testing of rotary mowers used in agriculture.
- **PN-ISO 17103:2017-03** Agricultural machinery. Rotary disc mowers, rotary drum mowers and flail mowers. Test methods and acceptance criteria for protective gowns

Meets the requirements of other applied technical standards and specifications

- **Welding manual** Welding instruction MIG/MAG 2022/08 edition 02
- **Painting manual** Painting manual, application of wet lacquered covers 2022/08 edition 2
- **KJ manual** Quality control manual 2022/08 edition 02

*Conformity with directives and standards requirements was stated on the basis of tests carried out by the company:
 SIMP Stowarzyszenie Inżynierów i Techników Mechaników Polskich w Gdańsku.
 The tests were carried out by: M.A. Eng. Zbigniew Myszko –Expert SIMP Nr cert. 9763*

Person responsible of preparing the technical documentation: Karol Jaworski. Address: Dworcowa 9c, 77-141 Borzytuchoń

Borzytuchoń 24.11.2023

Karol Jaworski
 PRZEPISZ PARZĄDU

Place and date of issue

First name, surname and signature of person authorized by the manufacturer