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OPERATOR'S MANUAL

TRAILED DISC MOWER

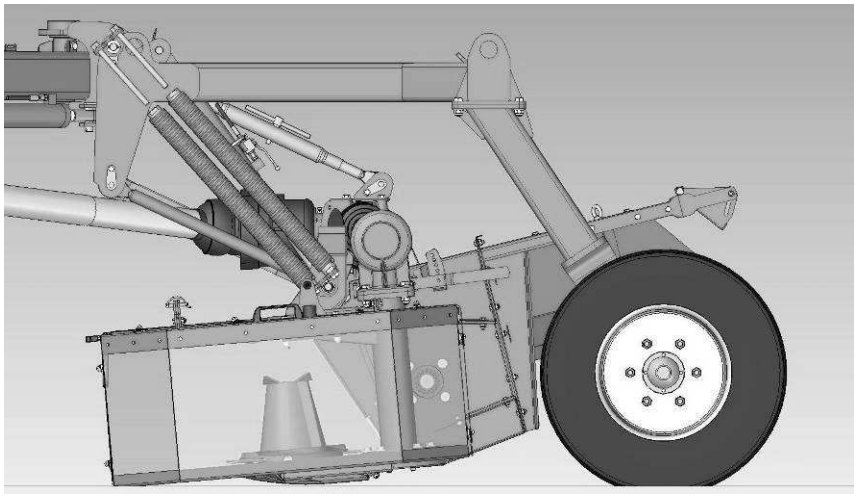
KDC 260	**- 8' 6"**
KDC 260 S	**- 8' 6"**
KDC 260 SL	**- 8' 6"**
KDC 260 S T	**- 8' 6"**
KDC 260 SL T	**- 8' 6"**
KDC 300	**- 9' 10"**
KDC 300 S	**- 9' 10"**
KDC 300 SL	**- 9' 10"**
KDC 300 S T	**- 9' 10"**
KDC 300 SL T	**- 9' 10"**
KDC 301 W	**- 9' 10"**
KDC 301 W T	**- 9' 10"**
KDC 340	**- 11' 2"**
KDC 340 S	**- 11' 2"**
KDC 340 SL	**- 11' 2"**
KDC 340 S T	**- 11' 2"**
KDC 340 SL T	**- 11' 2"**
KDC 341	**- 11' 2"**
KDC 341 W	**- 11' 2"**
KDC 341 W T	**- 11' 2"**
KDC 390	**- 13'**
KDC 430	**- 14'**

W – Roller conditioner
S – Tine conditioner
SL – Lightweight tine conditioner
T – Belt conveyor

Serial no.:

IN236USA003
30.05.2017
EDITION NO. 2

Original manual



It is recommended to incline cutterbar by approx. 5° towards mowing direction.
Operation on horizontal position is permissible.
Other position leads to serious damaging of cutterbar.

DO NOT

TURN MOWER'S
DRIVE ON UNTIL
IT IS IN OPERATING POSITION

DO NOT

OPERATE THE MOWER WITH UNAUTHORIZED
PERSONNEL PRESENT WITHIN 50 M OR LESS

ATTENTION:
Keep this manual for future reference.

Design and high quality of materials ensure high reliability and durability of SaMASZ machinery.

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1. IDENTIFYING THE MACHINE

Data plate is mounted to the mower's main frame in the place shown in **Fig. 1.**

Fig. 1. Data plate placement

Data plate includes:

- name and adress of the manufacturer,
- CE marking means, that the produce conforms to 2006/42/EC Directive and harmonized standards,
- machine symbol,
- date of manufacture,
- model year,
- version number,
- machine weight,
- id number,
- barcode.

NOTE:
In case the operator's manual is unclear or illegible all necessary information can be obtained from manufacturer or the dealer.

2. INTRODUCTION

- This operator's manual is essential for safe and proper use of this mower and should be read before anyone operates this mower. It should be kept near the mower for future use. If the mower is used by another operator, it should be in working condition and include this operator's manual and all other basic equipment.
- Operator's manual is attached to every machine in order that the operator can familiarize himself with design, working principles, service and adjustment of the mower. The operator should be familiar with common safety rules and procedures.
- The mower is manufactured according to international safety rules.
- Compliance with the safety precautions in this operator's manual will help to enable safe operation.
- This operator's manual is an indispensable part of any machine and is intended to familiarize future user with principles of proper operation and use of the machine as well as the risks involved.

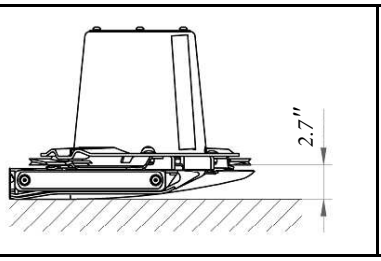
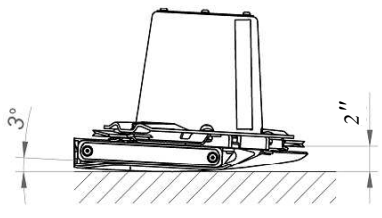
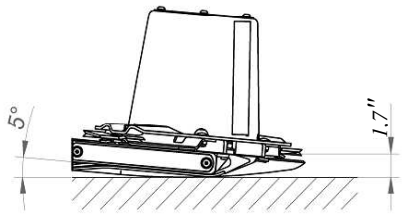
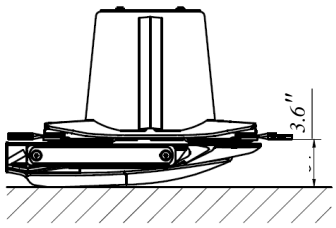
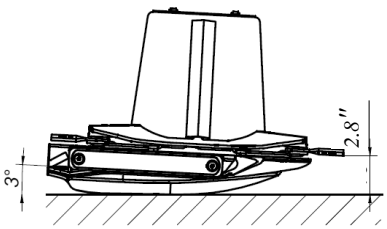
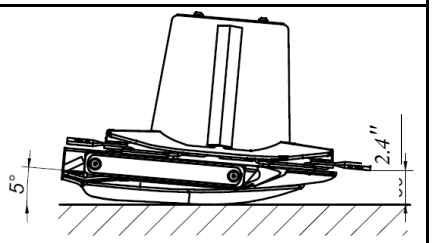
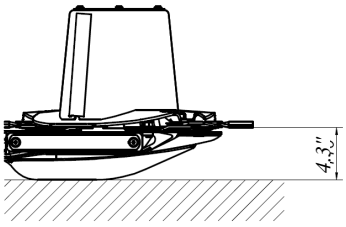
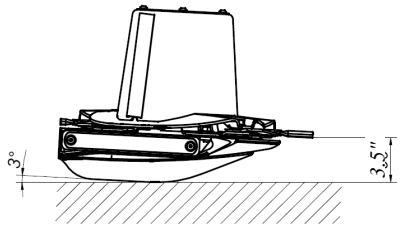
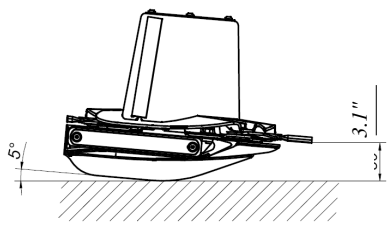
GENERAL PRECAUTION
When operating the mower warnings and safety rules marked with this sign herein should be respected.

NOTE:
Operating the mower without having been familiarized with its contents as well as by unauthorized personnel, particularly by children, is strictly forbidden.

3. PROPER AND INTENDED USE

1. Mower is equipped with **Perfect Cut** cutterbar. The mowing height differences, depending on the inclination angle of the cutterbar are shown in **Tab. 1**.

Tab. 1. Mowing heights depending on cutter bar's inclination angle.

„Perfect Cut" cutting bar		
No tilt	3° tilt	5° tilt
Standard mowing height		
		
Optional heights when using high mowing topping		
		
Optional heights when using high mowing double topping		
		

- Rotational suspended disc mower is intended mow green fodder such as grass and alfalfa on permanent grassland (pastures), on crop fields without rocks, and to form loose rows of cut fodder. The pasture or field being mown should be even and best if prepared by rolling. In the event there is a majority of tall grass, the first and second mowing should be done at a height of 2.4" - 2.8", while with a majority of short grass, at a height of 2". The last mowing should be done a little higher - at 2.8" - 3.1" from the ground.

- Trailed front mower with tine/roller conditioner is intended to mow green fodder such as grass and alfalfa on permanent grassland (pastures), on crop fields without rocks, and to form loose rows of cut forage. As a result of the passing of the layers of the green fodder through the flails or rollers, the grass stems are broken and a layer of wax is removed. This facilitates and speeds up the drying process of the fodder by approximately 30 to 40%. The use of rollers is especially recommended when mowing legumes such as alfalfa. Rollers are particularly recommended for mowing grass legume such as alfalfa.
- The pasture or field being mown should be even and best if prepared by rolling.

NOTE: Grass, which has not grown much should be mowed with zero angle inclination.

WARNING:
Use of the mower for purposes other than described above is forbidden. Improper use can be dangerous and may lead to voiding of the warranty. Mower should be operated and repaired only by people familiar with its detailed specifications and with all applicable safety rules and regulations and with the relative dangers. Unauthorized modifications to the mower will lead to voiding the warranty.

3.1. Technical data

Tab. 2. Specification of trailed disc mowers

Mower type	**KDC 260**	**KDC 300**	**KDC 340**	**KDC 341**	**KDC 390**	**KDC 430**
Working width	8' 6"	9' 10"	11' 2"	11' 2"	13'	14'
Number of knives [pcs]	12 (6x2)	14 (7x2)	16 (8x2)	16 (8x2)	18 (9x2)	20 (10x2)
Tractor's PTO rpm	1000 rpm – standard 540 rpm– option					
Minimal cooperating tractor power	45 kW (60 HP)	60 kW (80 HP)	67 kW (90 HP)	67 kW (90 HP)	74 kW (100 HP)	82 kW (110 HP)
Working capacity at V = 8 mph	~ 3,2 ha/h	~ 3,6 ha/h	~ 4,0 ha/h	~ 4,0 ha/h	~ 4,5 ha/h	~ 4,9 ha/h
Transport length	20' 4"	20' 4"	21' 1"	21' 1"	20' 4"	21' 1"
Transport width	8' 6"	9' 10"	11' 2"	11' 2"	13'	14'
Weight	3417 lbs.	3637 lbs.	3869 lbs.	3847 lbs.	4079 lbs.	4498 lbs.
3-point linkage category	II					
Admissible transport speed	17 mph					
Wheels	340/50/R16	340/55/R16	340/55/R16	340/55/R16	400/50/R15	400/50/R15
Recommended tire pressure	1,8 bar	1,8 bar	1,8 bar	1,8 bar	2 bar	2 bar
Noise level L_{pA}	75,6 ± 3,2 dB					
L_{Amax}	87,0 ± 3,2 dB					
L_{Cpeak}	87,0 ± 3,2 dB					

L_{pA} – noise level related to 8 hour working time. Averaged in time acoustic pressure level corrected by frequency characteristic **A**.

L_{Amax} – maximum value corrected by frequency characteristic **A** of acoustic pressure level.

L_{Cpeak} – peak level of acoustic pressure corrected by frequency characteristic **C**.

Tab. 3. Specification of trailed disc mowers with swath conditioner

Mower type		**KDC 260 S / KDC 260 SL**	**KDC 300 S / KDC 300 SL**	**KDC 340 S / KDC 340 SL**
Working width		8' 6"	9' 10"	11' 2"
Number of knives [pcs]		12 (6x2)	14 (7x2)	16 (8x2)
Tractor's PTO rpm		1000 rpm – standard 540 rpm– option		
Minimal cooperating tractor power		52 kW (70 HP)	67 kW (90 HP)	81 kW (110 HP)
Working capacity at V = 8 mph		~ 3,2 ha/h	~ 3,6 ha/h	~ 4,0 ha/h
Transport length		20' 4"	20' 4"	21' 1"
Transport width		8' 6"	9' 10"	11' 2"
Weight		4079 lbs. / 4013 lbs.	5180 lbs. / 5092 lbs.	5500 lbs. / 5390 lbs.
RPM conditioner's shaft		~ 700 rpm ~ 1100 rpm - option		
3-point linkage category		II		
Admissible transport speed		17 mph		
Wheels		400/50/R15	400/50/R15	400/50/R15
Recommended tire pressure		1,8 bar	2,2 bar	2,4 bar
Noise level	L_{pA}	75,6 ± 3,2 dB		
	L_{Amax}	87,0 ± 3,2 dB		
	L_{Cpeak}	87,0 ± 3,2 dB		

Tab. 4. Specification of trailed disc mowers with swath rollers and conveyor

Mower type		**KDC 301 W**	**KDC 301 W T**	**KDC 341 W**	**KDC 341 W T**
Working width		9' 10"	9' 10"	11' 2"	11' 2"
Number of knives [pcs]		14 (7x2)	14 (7x2)	16 (8x2)	16 (8x2)
Tractor's PTO rpm		1000 rpm – standard 540 rpm – standard			
Minimal cooperating tractor power		67 kW (90 HP)	74 kW (100 HP)	81 kW (110 HP)	89 kW (120 HP)
Working capacity at V = 8 mph		~ 3,6 ha/h	~ 3,6 ha/h	~ 4,0 ha/h	~ 4,0 ha/h
Transport length		20' 4"	23' 4"	21' 1"	24' 1"
Transport width		9' 10"	9' 10"	11' 2"	11' 2"
Weight		4630 lbs.	5512 lbs.	4927 lbs.	5875 lbs.
RPM conditioner's shaft		~ 800 rpm			
3-point linkage category		II			
Admissible transport speed		17 mph			
Wheels		400/50/R15	400/50/R15	400/50/R15	400/50/R15
Recommended tire pressure		2 bar	2,4 bar	2,2 bar	2,4 bar
Noise level	L_{pA}	75,6 ± 3,2 dB			
	L_{Amax}	87,0 ± 3,2 dB			
	L_{Cpeak}	87,0 ± 3,2 dB			

L_{pA} – noise level related to 8 hour working time. Averaged in time acoustic pressure level corrected by frequency characteristic **A**.

L_{Amax} – maximum value corrected by frequency characteristic **A** of acoustic pressure level.

L_{Cpeak} – peak level of acoustic pressure corrected by frequency characteristic **C**.

Tab. 5. Specification of trailed disc mowers with swath tine conditioner and conveyor

Mower type	**KDC 260 S T / KDC 260 SL T**	**KDC 300 S T / KDC 300 SL T**	**KDC 340 S T / KDC 340 SL T**
Working width	8' 6"	9' 10"	11' 2"
Number of knives [pcs]	12 (6x2)	14 (7x2)	16 (8x2)
Tractor's PTO rpm	1000 rpm – standard 540 rpm – standard		
Minimal cooperating tractor power	60 kW (80 HP)	74 kW (100 HP)	89 kW (120 HP)
Working capacity at V = 8 mph	~ 3,2 ha/h	~ 3,6 ha/h	~ 4,0 ha/h
Transport length	22' 12"	22' 12"	24' 7"
Transport width	8' 6"	9' 10"	11' 2"
Weight	4960 lbs./ 4916 lbs.	5181 lbs./ 5126 lbs.	5500 lbs./ 5423 lbs.
RPM conditioner's shaft	~ 1100 rpm		
3-point linkage category	II		
Admissible transport speed	17 mph		
Wheels	400/50/R15	400/50/R15	400/50/R15
Recommended tire pressure	2 bar	2,2 bar	2,4 bar
Noise level L_{pA}	75,6 ± 3,2 dB		
L_{Amax}	87,0 ± 3,2 dB		
L_{Cpeak}	87,0 ± 3,2 dB		

L_{pA} – noise level related to 8 hour working time. Averaged in time acoustic pressure level corrected by frequency characteristic **A**.

L_{Amax} – maximum value corrected by frequency characteristic **A** of acoustic pressure level.

L_{Cpeak} – peak level of acoustic pressure corrected by frequency characteristic **C**.

3.2. Design and working principle

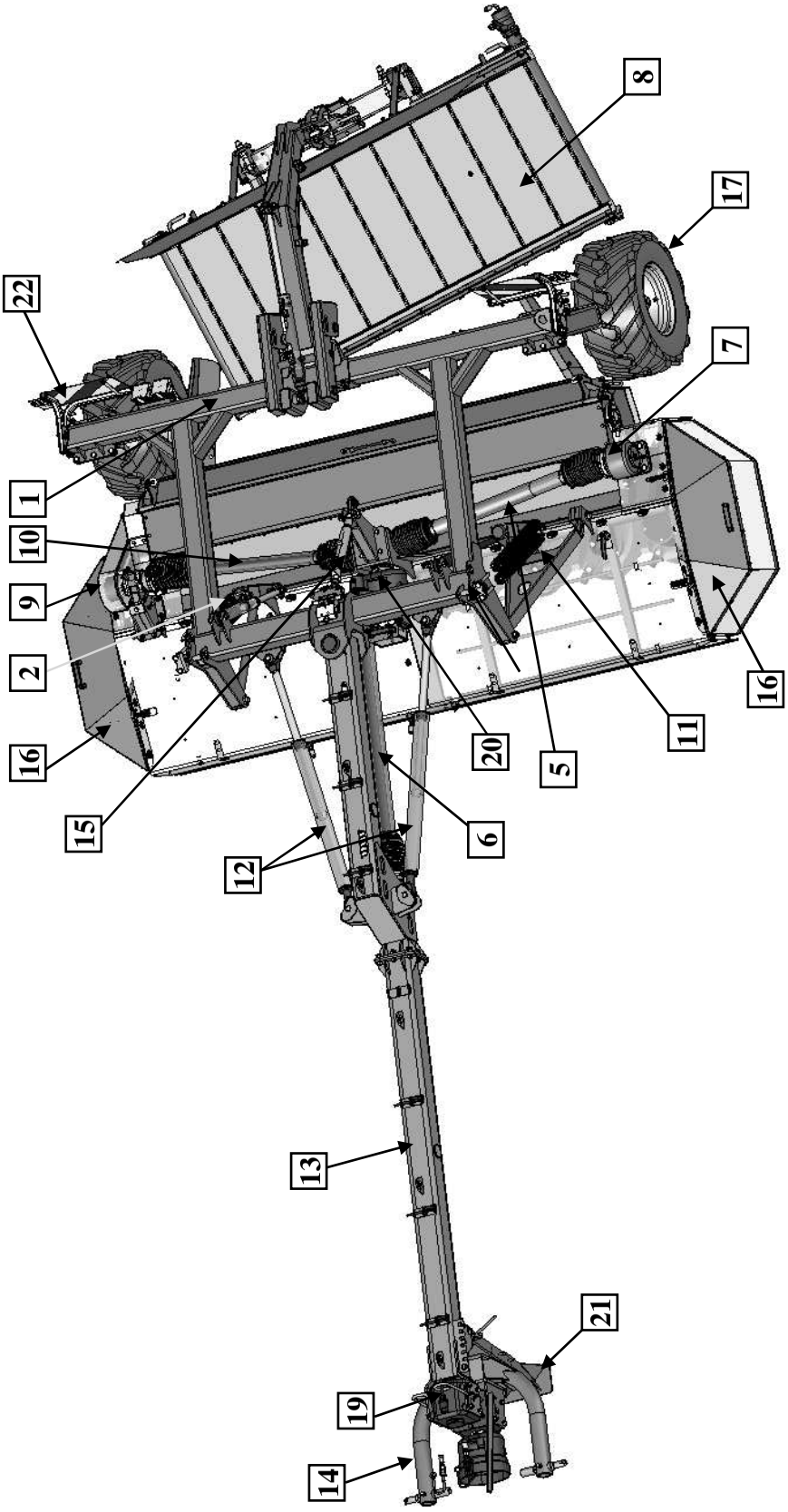


Fig. 2a. Overview of disk mower KDC

1 – Linkage
2 - Lifting hydraulic cylinders
3a – Swath conditioner, 3b - Swath rollers
4 – Cutterbar
5 – Cutterbar drive shaft
6 – PTO shaft
7 – Cutterbar drive's intersecting axis gear
8 – Conveyor
9– Belt gear of swath conditioner/roller
10 – PTO shaft of swath conditioner/roller
11 – Support springs
12 – Turning hydraulic cylinders
13 – Tiller
14 – Hitch
15 – Adjustment link
16 – Safety guards
17 – Wheels
18 – Swath guides
19 – Intersecting axis gear
20 – Intersecting axis gear
21 – Support leg
22 – Warning plate

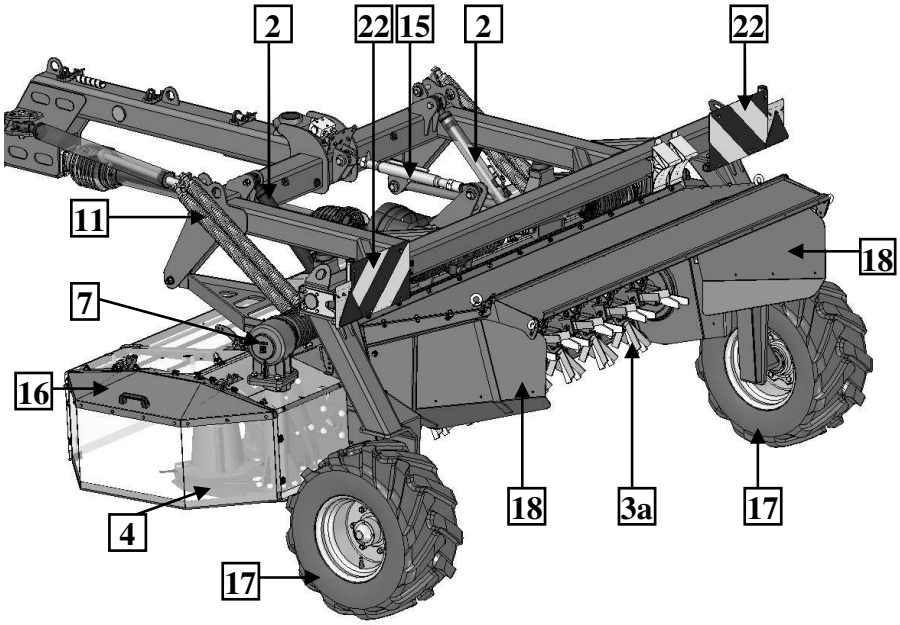


Fig. 2b. Design of the trailed disc mower with swath conditioner

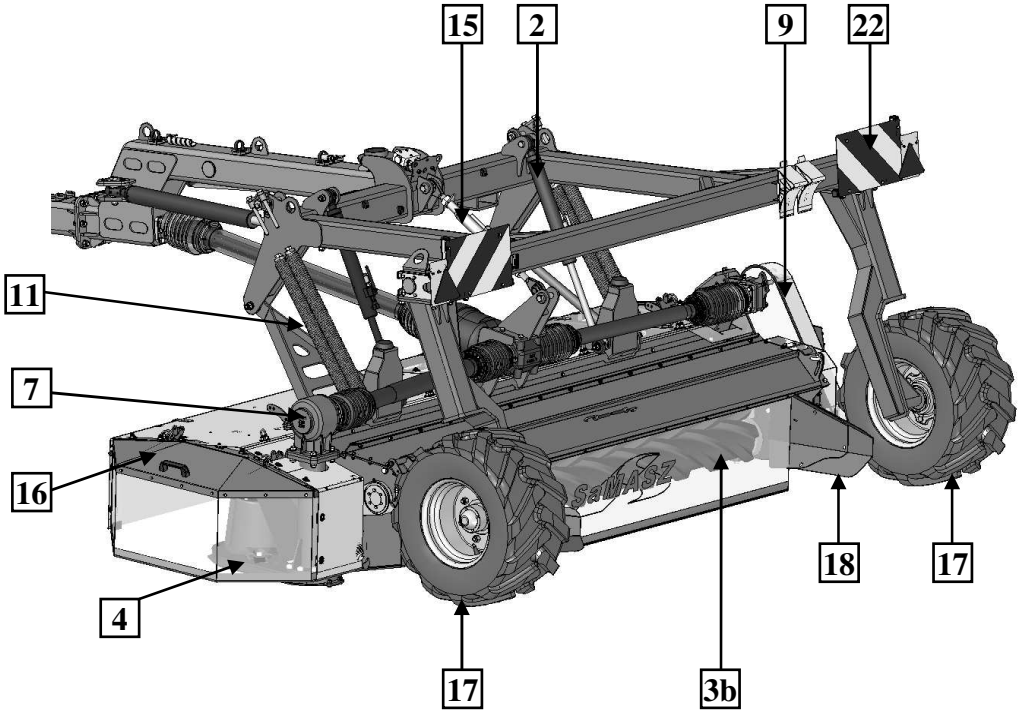


Fig. 2c. Design of the trailed disc mower with swath rollers

Hitch (**14**) enables attachment of the mower to a tractor. Drive onto cutterbar (**4**) is transmitted from the tractor's rpm through PTO shaft onto intersecting axis gear (**19**), drive shaft located on tiller (**13**), wide-angle PTO shaft (**6**) onto intersecting axis gear (**20**), cutterbar drive shaft (**5**) and intersecting axis gear (**7**). Cutterbar has discs mounted with two rotary knives each. Extreme most discs have additionally mounted swath guiding drums. Moreover drive from tractor's rpm through intersecting axis gear (**20**), drive shaft (**10**) and belt gear (**9**) is transmitted onto swath tine conditioner (**3a**) or rollers (**3b**). Cutterbar is attached to linkage (**1**). Protective guard (**16**) is mounted over the cutterbar. Maneuvering with the mower when driving is possible owing to two hydraulic cylinders (**12**) which connect tiller to mower's linkage.

3.3. Standard equipment and spare parts

The mowers are sold with the following standard equipment:

- warranty card,
- operator's manual with spare part catalogue and declaration of conformity,
- cutting knives: two sets per mower – left and right knives,
- PTO shaft,
- spray paint (150 ml),

Optional equipment:

- warning triangle,
- high mowing toppings / double toppings.

Tab. 6. Recommended PTO shafts for KDC mowers - Bondioli & Pavesi

Mower	Power	Length	Momentum	Symbol	Clutch	Remarks
	HP	mm	Nm			
KDC 260 S (T) KDC 300 S/W (T) KDC 301 W(T) KDC 340 S/W (T) KDC 341 W(T)	74	650-885	710	8G7T065CE007003	Friction clutch = 1200 Nm	1000 rpm
KDC 260 S (T) KDC 300 S/W (T) KDC 301 W(T) KDC 340 S/W (T) KDC 341 W(T)	47	650-885	830	8G7T065CE007002	Friction clutch = 1450 Nm	540 rpm

PTO shaft end without clutch – To be mounted on the tractor side

PTO shaft end with overload friction clutch – To be mounted on the mower side

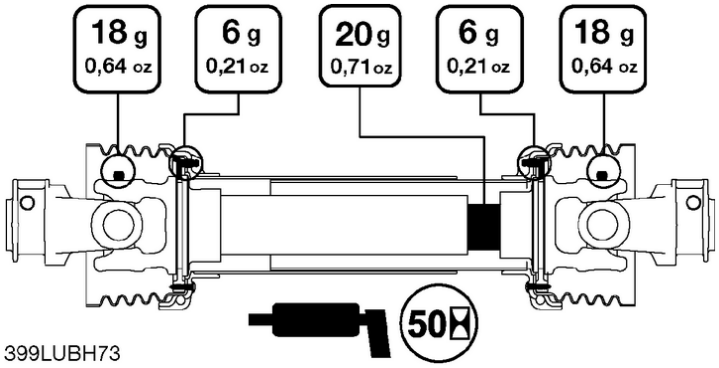


Fig. 3. PTO shaft lubrication points; Mounting directions.

NOTE:
PTO shaft lubrication frequency must be respected. Lubrication points marked on **Fig. 3**should be lubricated every 50 hours.
PTO shaft shall also be lubricated before and after longer idleness periods.

PTO shafts of other brands with equivalent parameters could be used after first obtaining SaMASZ permission.

NOTE:
Optional extra equipment should be ordered separately.

4. SAFETY PRECAUTIONS

⚠ WARNING The following precautions are for your safety. They must be read carefully and followed by every person who operates or maintains the machine. Failure to follow these safety precautions could result in serious injury or death to the operator, maintenance person or bystanders and property damage to the machine and surrounding property.

Safety Signal Words

This manual and the safety labels attached to this equipment utilize signal words that signify safety hazards with different levels of severity. Below are the words used and the definitions for these words:

- **DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION** indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTE** is used to address practices not related to physical injury.

4.1. General safety rules and regulations

The following descriptions are for your safety: They must therefore be read carefully and applied every time you use the machine.

- The machine has been designed for use by one single operator.
- When using, servicing, repairing, moving or storing the machine, the operator must wear safety footwear, safety gloves plus ear protection and dusk mask if necessary.
- During use, the machine may give rise to dust, especially if the soil is dry. You are advised to use a tractor with a cab fitted with filters in the ventilation system. Failing this, wear a dust mask with filter to protect your respiratory tract
- Front axis of the tractor should be weighted to keep the balance. If need be, use front wheel weights.
- In order to keep steering conditions, impact on front axis should be at least 20% of the complete tractor.
- Be extremely careful whenever using hydraulic lift lever or buttons. Any operation with hydraulic lift lever should be done from operator's seat; DO NOT move the lever from outside of a tractor.
- In case of tractors equipped with EHR, operating with hydraulic lift is done by the buttons mounted outside the tractor's cabin. When operating be extremely careful.
- When switching from mowing to transport position, remove the entire PTO shaft or at least one end of the shaft from the tractor's PTO so it cannot turn.
- When attaching the mower to a tractor, the operator should wear protective gloves.
- DO NOT operate the mower unless all safety guards are in place and operational. In addition, any damaged protective aprons should be replaced with a new one
- Start mowing only when tractor's PTO reaches its normal 1000 rpm. DO NOT exceed 1050 PTO rpm.
- No person (except operator) should stand within danger area which is a minimum of 164' 1" from any operating part, especially when operating near roads and in areas with stones and other debris. Be certain that children and animals are at a safe distance away from the machine.

IMPORTANT: Maintenance and adjustment should ONLY be done after the following has occurred:

1. tractor's engine has been stopped and ignition key has been taken out,
2. all rotating parts have come to complete standstill (NOTE: cutting knives will rotate for several minutes after engine is turned off),
3. the cutterbar is on the ground.

- Never tamper with or remove safety devices on the machine or make them inoperable.
- Before starting work and periodically thereafter, replace any damaged, missing and/or worn knives and knife holders.
- When driving on public roads always comply with local traffic regulations, especially those concerning warning lights.
- When the mower is lifted for repair on 3-point linkage, it should be secured against falling by mechanical support or by chain.
- The bolts and other fasteners have to be periodically checked and, if necessary, tightened or replaced. DO NOT work with damaged or worn fasteners.
- Never lift the mower on tractor linkage when the drive is operating and the cutting discs are rotating.
- When operating the mower, the tractor should always be equipped with operator protection that is required by laws and regulations.
- Never start the mower when the mower blades are off the ground.
- Before you start the tractor make sure that all drives are turned off and the levers that turn the hydraulics are in neutral position.
- Never leave tractor's engine running without supervision. Before you leave the tractor, turn off the engine and remove the key from tractor's ignition.
- DO NOT operate the mower when driving the tractor backwards.
- Permissible inclination of the mower on a slope when working and during transport is 8°. Exceeding this incline can result in mower tipover.
- Never stand between tractor and mower unless tractor and mower are secured against moving by the tractor's brake.
- If any maintenance must be done under an elevated mower, it must be blocked or otherwise secured against falling.
- When the parts of the mower need replacement, use only original spare parts as described in the spare parts list. Pay particular attention to PTO shaft's guards and mower's and tractor's spline shaft guards.

Hydraulic hoses are potentially very dangerous. Do the following to minimize any hazards:

1. Hydraulic hoses should be periodically checked and if any damage to the hoses have occurred or if they have been used more than 5 years, replace with new ones.
2. Never use scotch tape to repair hydraulic hoses.
3. When connecting hydraulic hoses to tractor's hydraulic connectors, make sure that the tractor's or mower's hydraulic system is not under pressure.

- The mower should be stored under a roof and in a way as to not be hazardous bot people or animals.
- In case of a fatal failure, stop the machine's drive, turn the tractor's engine off and take out the ignition key. Next, please contact technical service, and if an accident (here: road accident) occurs, respect first aid rules and contact responsible authorities.
- In the event of an accident involving this mower in a field or on a road, follow all applicable first aid procedures and contact SaMASZ technical service.
- Mower should be kept clean, so as to avoid danger of fire.

4.2. Qualifications of operator

To provide safe machine operation each person being the machine operator must meet the following requirements:

- Operator should hold driving license, have ability to drive vehicles safely and know road traffic rules.
- Operator must be in proper physical condition to be able to operate the machine.
- Operator must not be under the influence of alcohol, drugs and medicines, which all have influence on vehicle driving and machine operation.
- Operator should be familiarized with this manual and follow its provisions.
- Operator should be familiar with working principles of both the tractor and the machine, and be able to recognize and avoid hazards resulting from operation of the aggregate.

4.3. Conditions of mounting mower on tractor

- Prior to the mounting operation, be sure that the tractor and mower hitches are compatible and that the tractor's hitch load is adequate for the machine which is to be mounted or attached.
- Prior to mounting the machine, examine the technical condition of the mower's hitch assembly and tractor's 3-point linkage.
- Use only genuine cotter pins to mount the mower on a tractor.

4.4. Transport

The lifting, handling and transporting operations can be very dangerous unless they are carried out with the utmost caution. Have all persons not involved in the actual work move away from the area and limit the zone where the operations are to be carried out. Also make sure that the area in which the operations take place is clear and that there is a sufficient escape route, i.e. a free, safe zone to which the operators can quickly move if the load should fall.

The safety hooks and ropes used to lift the machine must be of an adequate carrying capacity.

To minimize the risk of serious injury or death, do the following:

- When the machine is converted from the transport position to the work position and vice versa, you could be pinched or crushed by some of its parts. Take extra care when carrying out these maneuvers and have all persons keep well clear of the danger zone.
- Do not change position of the mower until there are no people or animals around (pay particular attention to children).
- While transporting the mower, put a warning plate with combined lights and reflectors and warning triangle on the mower.
- During transport, always put the mower in its proper and safe transport position. See section 5.3.
- Before putting the mower in transport position, make sure that the tractor’s PTO is turned off and all rotating parts have come to a complete stop.
- Do not drive over 30 km/h (17 mph). Drive slower if road conditions are poor, especially on irregular surfaces or steep slopes.
- The behavior of the tractor on the road, such as its turning and braking capacities, are affected by the implements mounted.
- No person and no objects must remain on the mower when driving or transporting.
- When taking turns pay particular attention and consider the machine's weight and dimensions.
- When driving on the road after work, check to make sure that the tires and soil working tools are clean to prevent the road surface from becoming dirty.
- Make sure that the machine is not damaged during transport.

NOTE:
It is forbidden to drive on public roads, if the mower's transport width is more than 3 m (for: KDC 340, KDC 340 S/SL (T), KDC 341, KDC 341 W (T), KDC 390, KDC 430).

4.4.1. Putting the mower onto another vehicle for transport

The driver and the carrier are responsible for the mower's transport safety. Equipment and parts must be secured during transport. To put the mower onto another vehicle in a safe way, please obey the following rules.

- Transport should be done by qualified and specifically trained personnel,

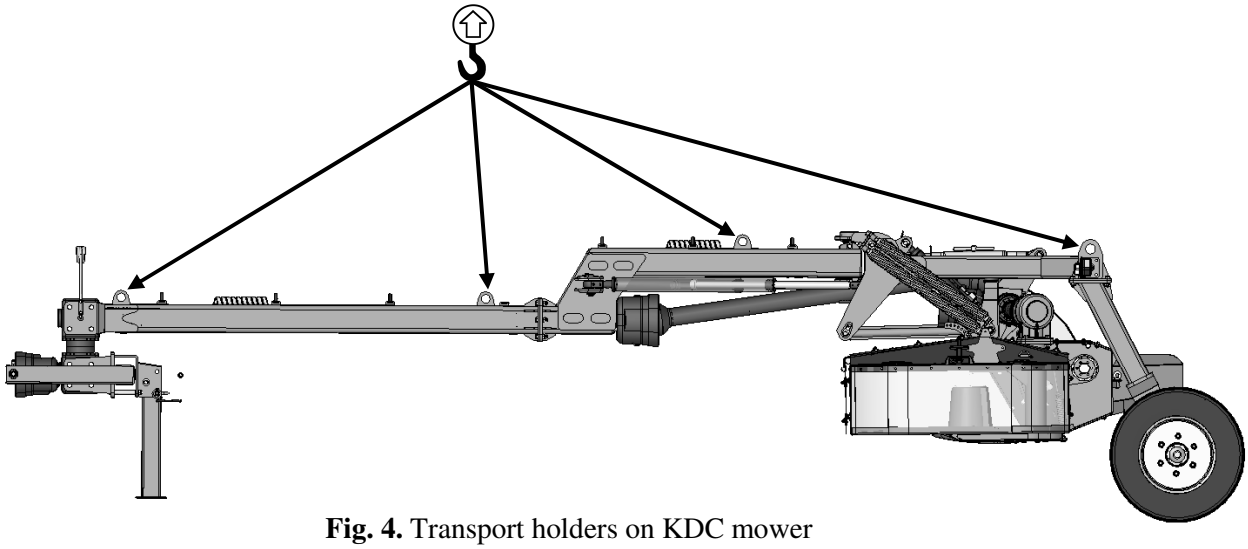


Fig. 4. Transport holders on KDC mower

- Grab the mower by any lifting devices only in places indicated by hook sign (**Fig. 4**),
- For mower lifting, use only lifting devices with hoisting capacity larger than mower's weight shown in data plate. This also applies to ropes and chains used for lifting,
- Do not lift if transport belts, belt suspensions, ropes are damaged. Whenever damage to these parts occurs, replace with new ones,
- When mounting slings, chains, handles etc., always set the machine's center of gravity properly,
- To safely support the machine, use ropes of adequate length so that the angle between them is no greater than 120°, and the angle between the strand and the vertical is no greater than 60°,
- Lift the machine with the utmost caution and move it slowly,
- No one should be within the range of action of the lifting equipment when any transporting operations are being carried out,
- Collapsible parts should be blocked in transport position,
- When the mower is on the vehicle's trailer, the machine should be secured against moving.

NOTE:
Securing both the danger area and providing activity performance in a safe manner shall lie under the responsibility of the person in charge of the mower transportation.

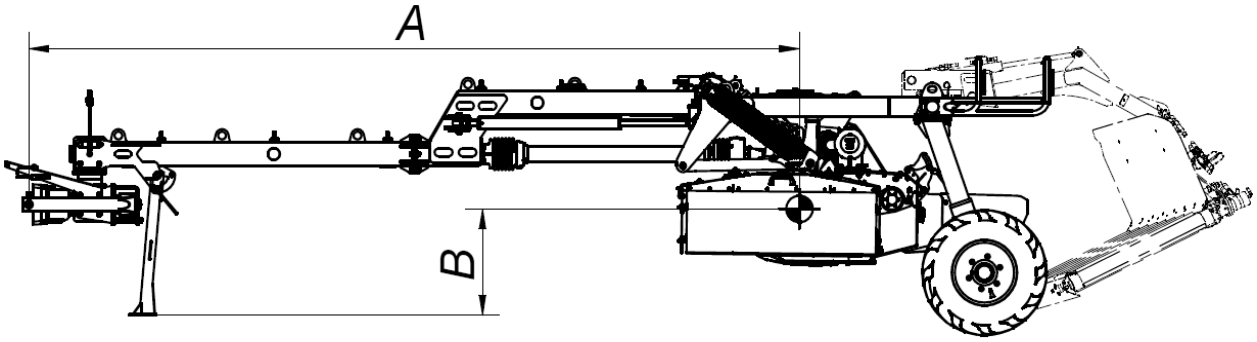


Fig. 5. Location of centre of gravity

Tab. 7. Location of centre of gravity

Dimension [mm]	Mower type				
	KDC 260	**KDC 260 S**	**KDC 260 SL**	**KDC 260 ST**	**KDC 260 SLT**
A	4150	4420	4415	4720	4720
B	810	825	830	800	805

Dimension [mm]	Mower type						
	KDC 300	**KDC 300 S**	**KDC 300 SL**	**KDC 300 ST**	**KDC 300 SLT**	**KDC 301 W**	**KDC 301 WT**
A	4180	4440	4435	4750	4750	4460	4820
B	830	850	855	800	800	820	800

Dimension [mm]	Mower type				
	KDC 340	**KDC 340 S**	**KDC 340 SL**	**KDC 340 ST**	**KDC 340 SLT**
A	4610	4865	4860	5200	5200
B	830	850	855	795	795

Dimension [mm]	Mower type				
	KDC 341	**KDC 341 W**	**KDC 341 WT**	**KDC 390**	**KDC 430**
A	4610	4920	5270	4190	4700
B	830	805	795	815	805

4.5. Working parts

- Before operating the mower, check knife's, knife mounting's and knife holder's condition.
- Worn or damaged knives, knife mountings or knife holders should be immediately replaced with new ones.

4.6. PTO shaft

- Before operating, read bar manufacturer's manual placed on the bar. Follow all safety precautions in that manual.
- Use only PTO shafts recommended by mower's manufacturer with guards in good condition.
- In order to operate safely, use only undamaged PTO shafts and shields. Damaged PTO shafts and shields must be repaired or replaced with new ones before use.

4.7. Hydraulic assembly

- Hydraulic assembly is under high pressure. Hydraulic oil under pressure may penetrate skin and cause serious injury or death. Skin and eyes should be protected when working around this assembly.
- In case of injury caused by a liquid under pressure, call a doctor immediately.

- Hydraulic hoses can be connected to the tractor's hydraulics provided that both the tractor's and the mower's hydraulic assemblies are not under pressure. To remove the pressure from the hoses, start the tractor's hydraulic valves several times with the tractor off.
- When unmounting the machine from the tractor, put the equipment aside, deflate the pressure from hydraulics and turn tractor's engine off.
- When looking for oil leaks, do so safely. Use a cardboard card. Do not touch any potential leaks until the entire hydraulic assembly has been relieved of pressure.
- Use only hydraulic oil featuring oil purity class 9 - 10 in accordance with NAS 1638.

When using hydraulic hoses:

- Avoid stretching the hoses when operating.
- Do not allow hydraulic hoses to get deflected.
- Do not expose hydraulic hoses to contact with any sharp edges.
- If damaged or worn, replace the hoses with new ones.
- Useful life for hydraulic hoses is 5 years from their production date.

4.8. Safety curtains

SaMASZ mowers feature standard safety curtains (**1**) for self-fitting. In order to put the curtain properly put it on the mower and secure with catches (**2**) and with front guard (**3**) **Fig. 6**. Examine condition of curtains and their mounting on a regular basis. Fix immediately if damaged and replace if missing. Do not operate mower without safety curtains.

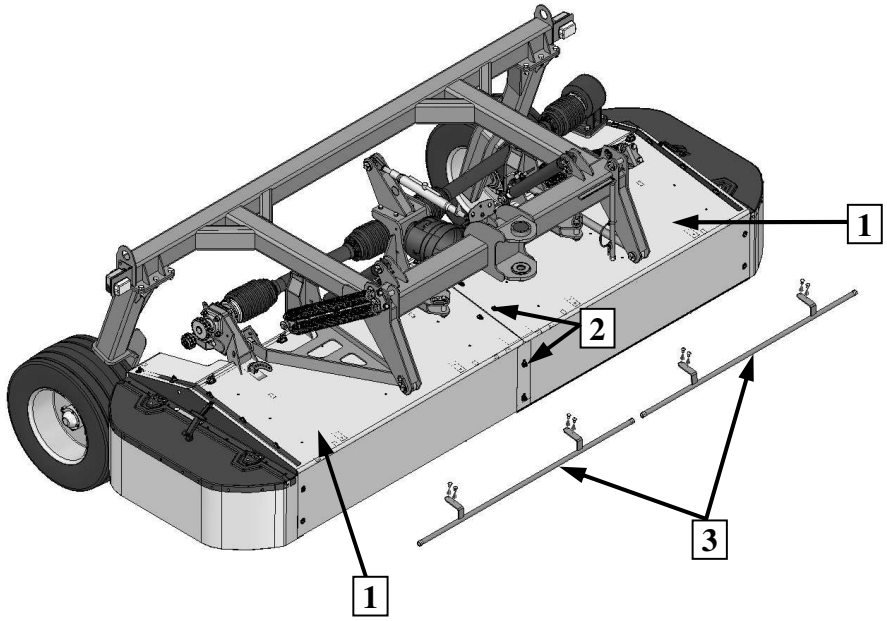


Fig. 6. Mounting safety curtain guard on the mower

4.9. Residual risk

Despite the fact that SaMASZ Białystok, the manufacturer of the mower, has taken great care in the design and manufacturing of the mower, certain risks during mower operation and maintenance are unavoidable. A major source of risk that could result in serious injury or death can occur during the performance of these operations.

Major source of risk follows performance of these operations:

- operation of mower by minors,
- operation by individuals who have not read the operator's manual and safety labels,
- operation of mower by persons under influence of alcohol or other substances,
- not being cautious during transportation and moving mower during operation,
- transport of persons who are on the machine,
- presence of persons and animals within the mower operation range,
- performing servicing and machine adjustments with the engine on.

4.9.1. Danger of machine entanglement

This risk occurs when (1) changing position of a mower, (2) operating near rotating parts, and (3) working without safety guards. During operation, maintenance and adjustment, always wear protective gloves, shoes and clothes without loose parts, belts and so on. Always comply with safety labels placed on the mower.

4.9.2. Danger of cutting injury, abrasion and damage of skin

This risk occurs during replacement of working parts with sharp edges cleaning the machine and removal of any clogging and jams.. During any maintenance work, always use safety gloves.

4.9.3. Danger of injury from liquid ejection out of hydraulic system

During connection of hydraulic hoses to hydraulic connectors, be sure that tractor's or mower's hydraulic system is not under pressure. Regularly check hydraulic hoses for leaks.

4.9.4. Forbidden actions

During mower's operation, do not do the following:

- never unblock the mower, make any regulations or repairs of the mower while it is in motion,
- never change order of operation and maintenance activities described in operator's manual,
- never operate the mower when it is not in working order or has damaged safety guards,
- never get your hands and legs close to rotating parts of the mower,
- during repair and maintenance of the mower, always comply with descriptions included in operator's manual. Always do these activities when the tractor's drive is off,
- never operate the mower under influence of alcohol, drugs, or strong medicine that impair your attention,
- do not wear clothes or jewelry that are too loose or too tight. Too loose clothing or jewelry may be pulled in by the rotating parts of the mower,
- the mower should not be operated by children or by handicapped people,

When describing residual risk, the mower complies with the state of the art in technology on the date it was manufactured.

4.9.5. Residual risk assessment

Residual risk occurs from not complying with the instructions and safety precautions. Such risk can be minimized by doing the following:

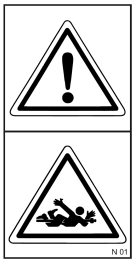
- thorough familiarizing yourself with operator's manual,
- allow no persons on the machine when operating,
- allow no persons within the mower operation range,
- adjust, maintain and lubricate the machine with the engine off,
- only skilled persons should perform repairs of the machine,
- children and strangers must keep away when the machine is operating

When the risk of exposure to noise cannot be avoided or eliminated by any protective means or organization of work, employer (farmer) must:
1) provide the operator with individual means of noise protection, if the noise level in work place exceeds 80 dB.
2) provide the operator with individual means of noise protection and supervise the correctness of its usage, if the noise level in work place reaches or exceeds 85 dB.

4.10. Safety labels and their meaning

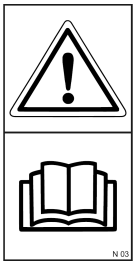
Safety labels are critical to safe use of this mower. They must be read, understood and followed. Also, be sure that:

- All warning decals are clean and legible,
- All lost or damaged decals are replaced by ordering new decals from your dealer or supplier,
- All persons using this mower have read the section of this manual explaining the meanings of these labels,
- All spare part used for repair of the mower should have all safety labels provided by the manufacturer.

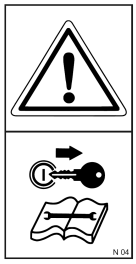


N-01
Be extremely careful when PTO shaft is rotating

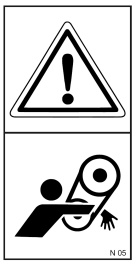
N-02
Warning: cutting knives! Do not get near to the operating mower



N-03
Prior to operation commencement read the operator's manual carefully



N-04
Prior to approaching any maintenance or repair works, turn the machine off

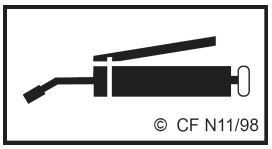


N-05
Warning: belt gear, keep particular attention

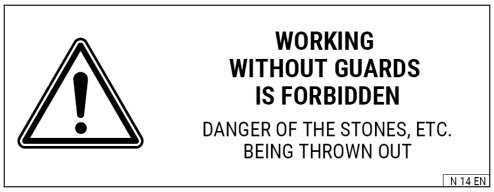
N-06
Warning: pulling-in parts

N-07
Operating the mower is forbidden with presence of any unauthorized personnel within the danger area of 170 ft

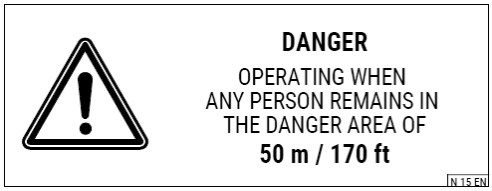
N-09
Warning: rotor



N-11

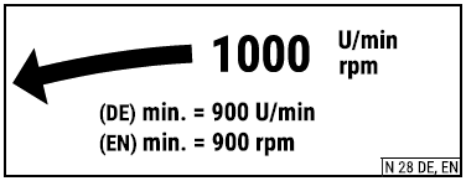


N-14

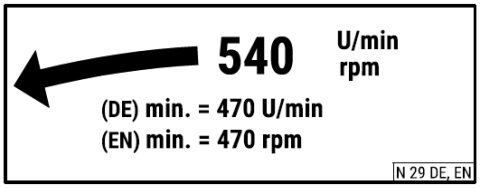


N-15

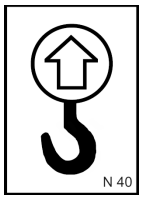
N-23
Warning: power lines



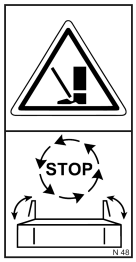
N-28



N-29



N-40
Transport holder for moving the mower

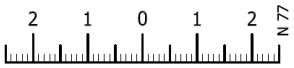


N-48
Stay away from mower's inclination area

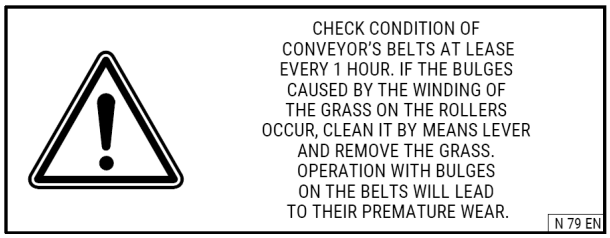
N-49
Never stand near tractor's 3-point linkage while steering tractor's lift

N-50
Do not remain in the mower swinging area

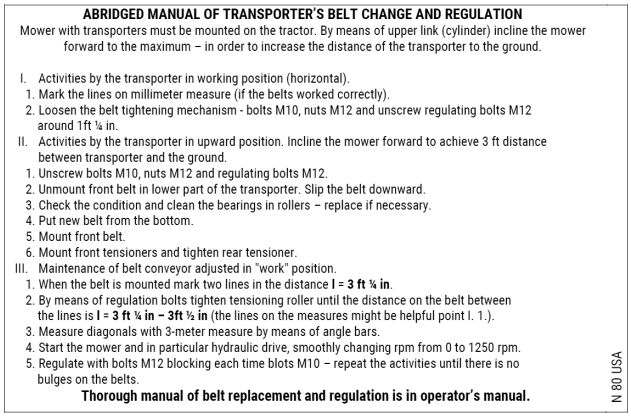
N-55



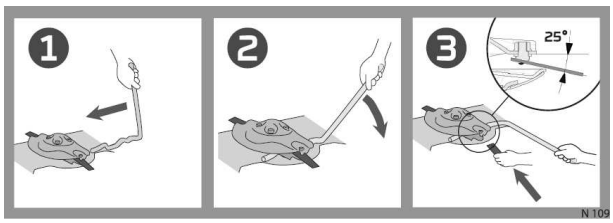
N-77
Tightening of conveyor's belt



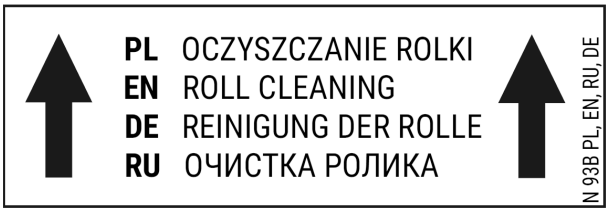
N-79



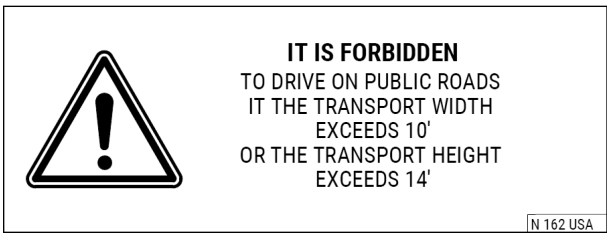
N-80
Adjustment and replacement of conveyor's belt



N-109



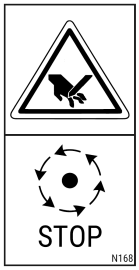
N-93



N-162

N-117
Avoid contact with liquid coming out under pressure

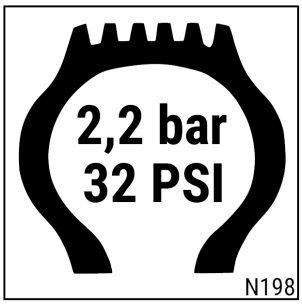
N-167
Do not go onto safety brackets and guards



N-168
Do not touch the machine before the rotating parts have not come to a complete standstill

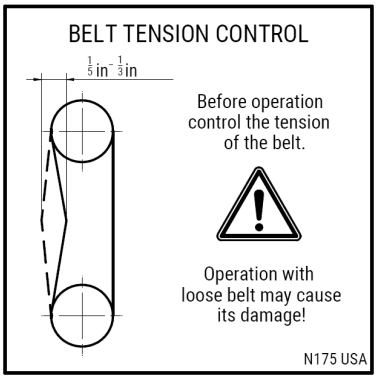
N-196
Recommended tire pressure mower KDC 260, KDC 260 S/SL, KDC 300, KDC 340, KDC 341

N-197
Recommended tire pressure mower KDC 260 S/SL T, KDC 301 W, KDC 390, KDC 430



N-198
Recommended tire pressure mower KDC 300 S/SL (T), KDC 341 W

N-199
Recommended tire pressure mower KDC 301 W T, KDC 340 S/SL (T), KDC 341 W T



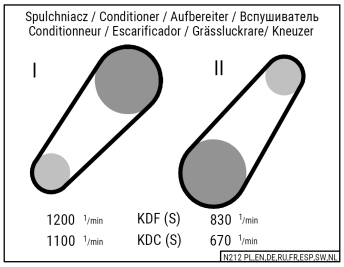
N-175 Belt tension control

N-202
Admissible transport speed

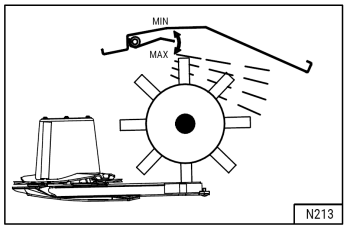
N-204
Use the required Personal Protective

N-205
Use the required Personal Protective

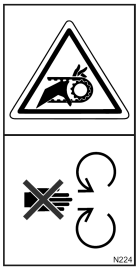
N-206
Use the required Personal Protective



N-212 – for KDC(S/SL)



N-213 – for KDC (S/SL)



N-224
Do not open and remove safety guards with motor operating

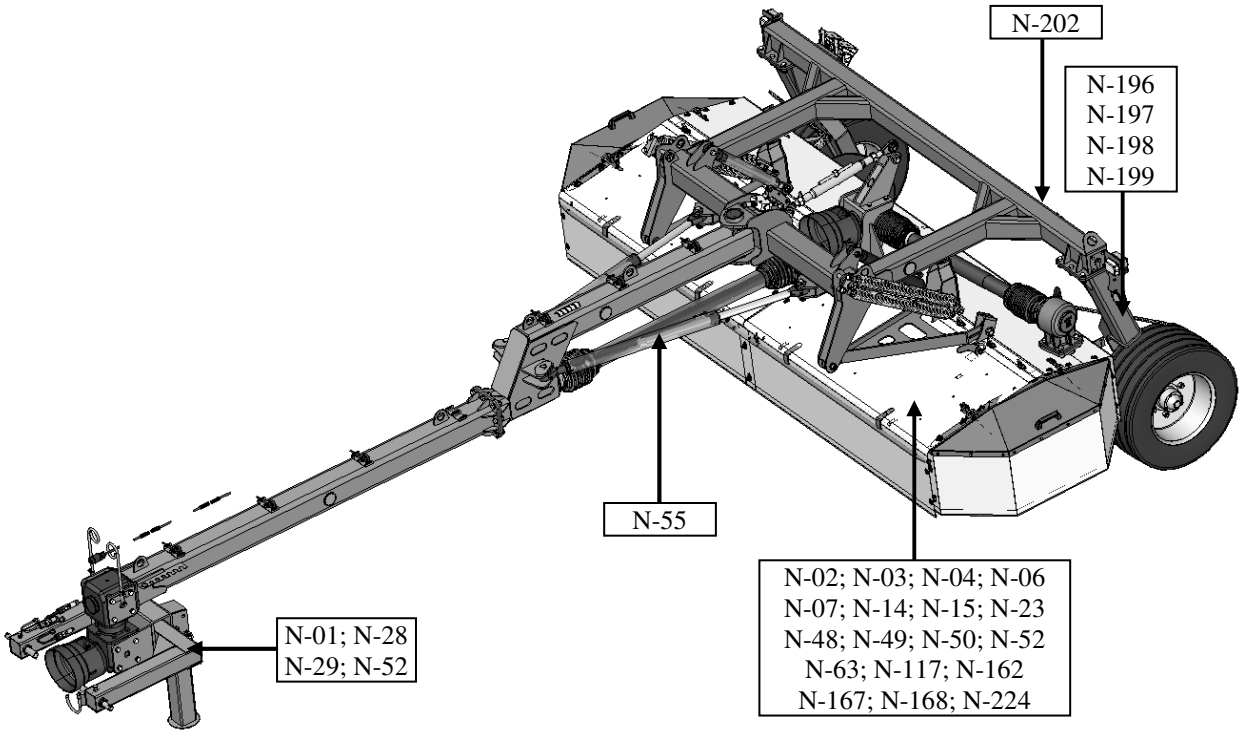


Fig. 7. Placement points of warning signs on trailed disc mowers

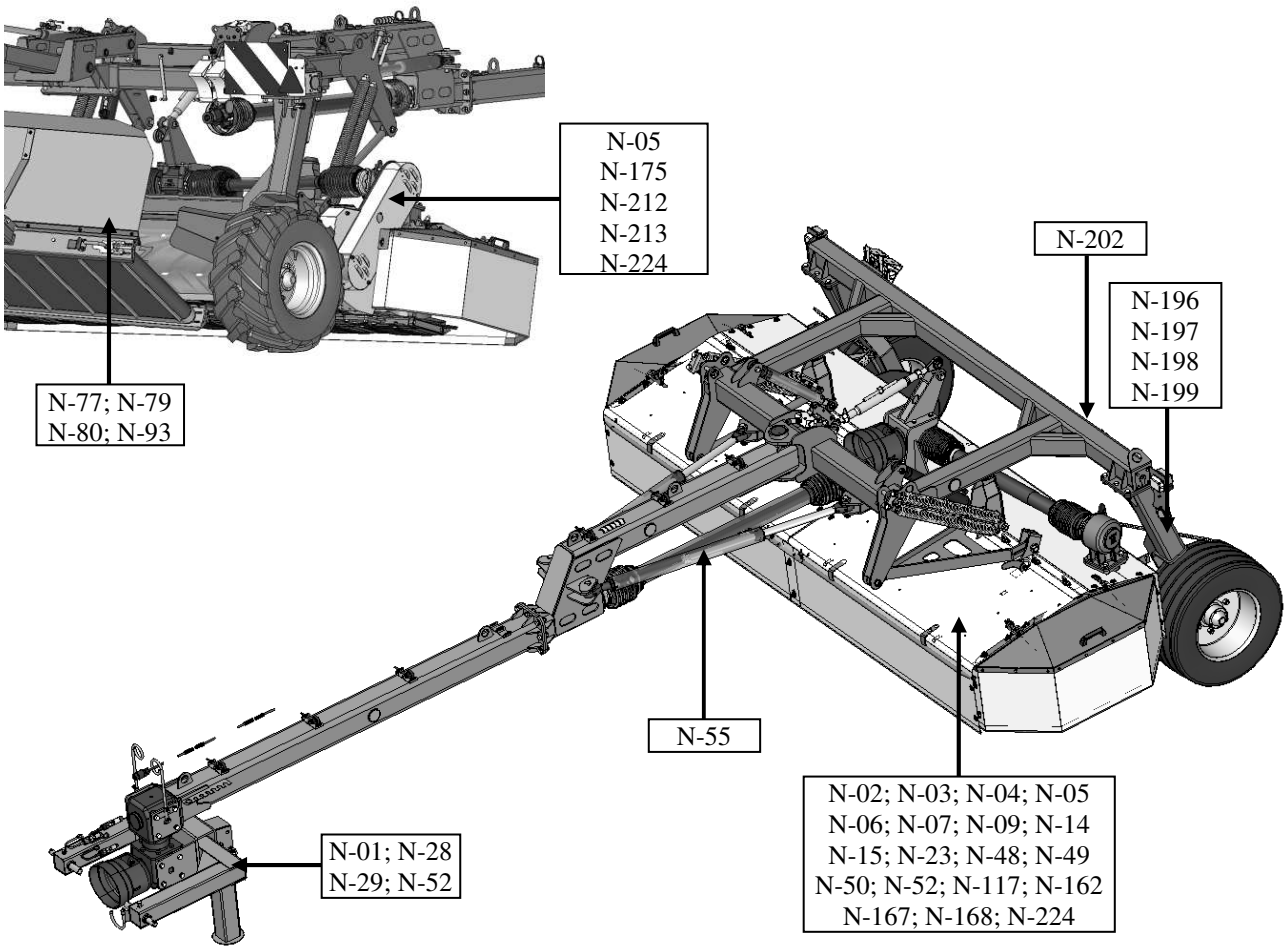


Fig. 8. Placement points of warning signs on trailed disc mowers

CAUTION:
Any spare part used for repair of the mower should have all warning decals provided by the manufacturer.

5. OPERATION

WARNING:
Before beginning to use this machine, do the following:
- Read manual, especially safety precautions in section 4.
- Make sure you are familiar with all controls and functions.
- Make sure all safety devices are in place and working. Fix or replace if not working or damaged.
- Replace protective cover if damaged.

5.1. Attaching the mower to the tractor

WARNING:
- Only hitch and unhitch machine on a flat surface with compact dirt.
- Keep everyone away from area between mower and tractor.
- Be careful near link road zone of tractor's rear power lift. Contains sharp parts.

- Attach the mower to the tractor with use of 3-point linkage frame Therefore drive the tractor near the mower's catch and connect pins (**P**) on the catch with links (**C**) on the tractor, and then secure them with cotters as shown on **Fig. 9**.
- Next lift up support leg (**S**) and secure it with pin.
- Connect hydraulic hoses.
- Connect the machine's lighting cables to the tractor and check the lights for operation.
- Connect telescopic articulated shaft. If need be shorten the shaft as per item 5.4.

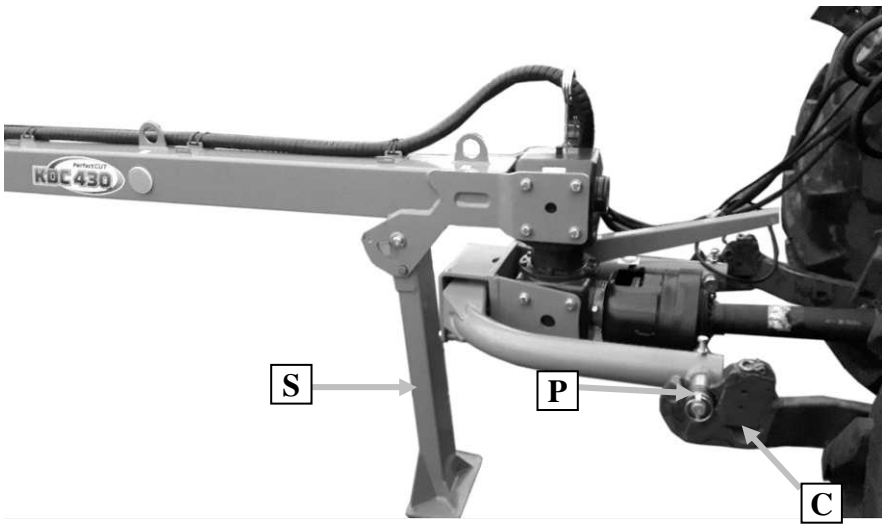


Fig. 9. Connecting mower to the tractor

5.2. Preparing mower for transport

In order to prepare mower for transport:
- With use of hydraulic cylinders get mower behind tractor.
- Lift mower's side guards to vertical position (**Fig. 10**).
- Lift cutterbar by means of cylinders and to protect it, use hydraulic valves (**Fig. 11**)
- Lift the swath conveyor by means of cylinder (**Fig. 13**) and protect it, using hydraulic valves (**Fig. 12**).
- Check protection of supports and all elements lifted for transport.
- When maneuvering, pay special attention to area around tractor-mower aggregate.

NOTE:
When transporting the machine, levers of cut-off valves must be closed. Thanks to it, the mower is protected from accidental dismantling on unexpected motion of both the tractor and the mower – in worst case, it might cause cracks to hydraulic hose and lead to an accident.

Fig. 10. Mower's side guard lifted for transport

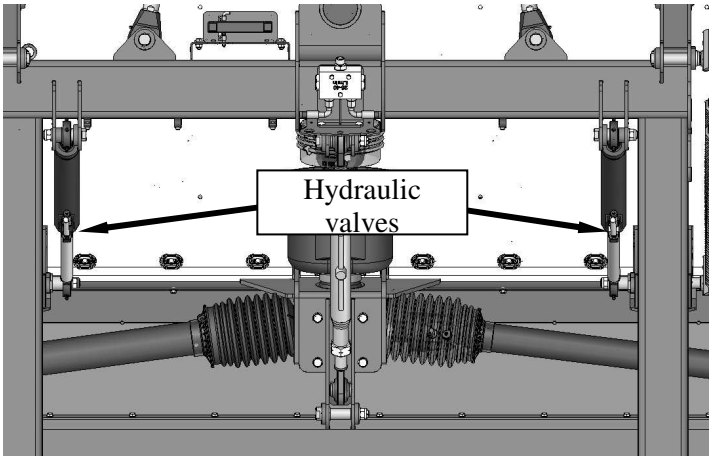


Fig. 11. Mower's hydraulic valves

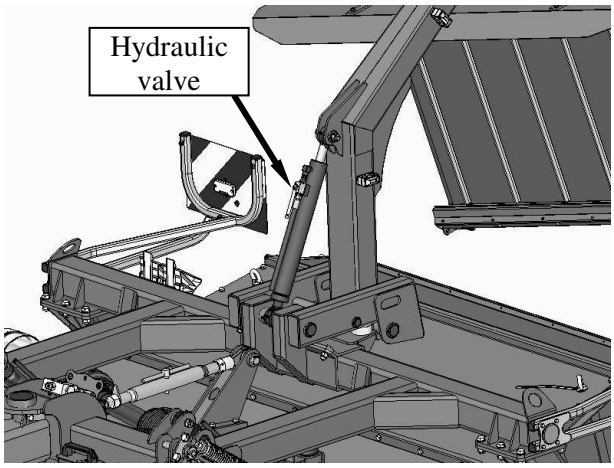


Fig. 12. Conveyor's hydraulic valves

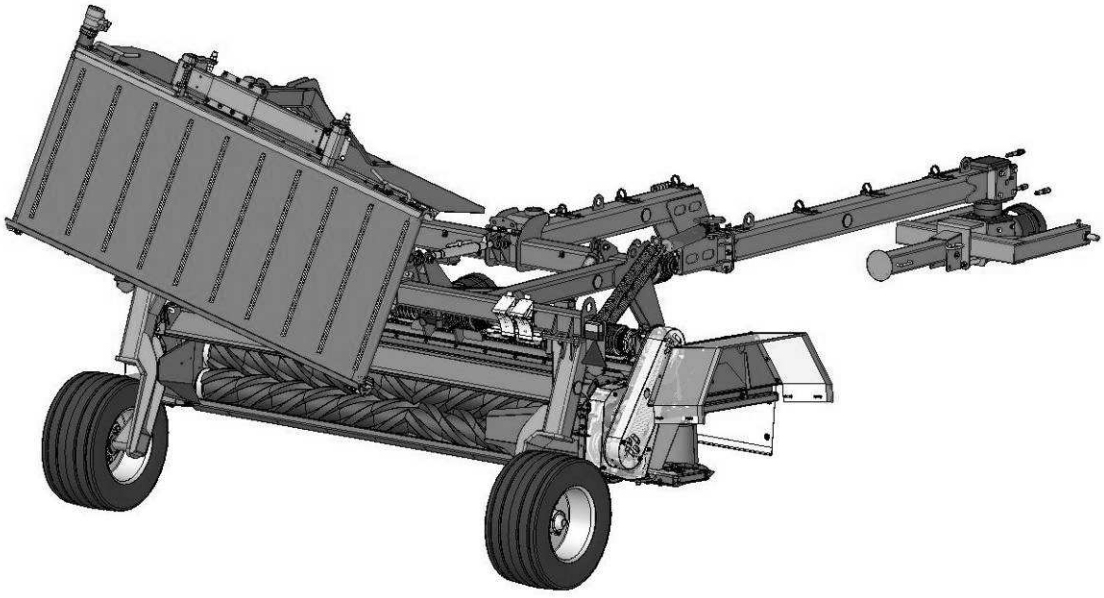


Fig. 13. Mowers in transport position

5.3. Preparing the mower for transport

To meet safety precautions concerning transport the mower should be equipped with warning triangle, attached at the mower's rear (the plates are standard-delivered with the machine). To improve safety during the transport the machine should be fitted with a warning triangle – to be purchased at the manufacturer.

When transporting respect traffic provisions valid in the country of use.

NOTE:
If the mower does not have the above warning lights and plates, these can be ordered at the manufacturer.

WARNING:
Legal requirements for transport on public roads may differ from state to state. Check your location's requirements and comply.

WARNING:
Do not drive on public roads if the machine's transport height is more than 13' 2" (when transported, transport height should be lowered on the tractor links.

5.4. Mounting PTO shaft

PTO shaft's end with overrunning clutch should be mounted on mower's side.
When connecting PTO shaft between tractor and mower make sure that external guard tube of the shaft is on the tractor's side. The PTO shaft plastic guards have to be secured by fastening their small chains to immovable parts of tractor and mower. The PTO shaft must operate at the lowest possible angle. This will ensure that both shaft and the machine last as long as possible.

CAUTION:
If need be, shorten the PTO haft according to its operator's manual given by the shaft's manufacturer (**Fig. 14**).

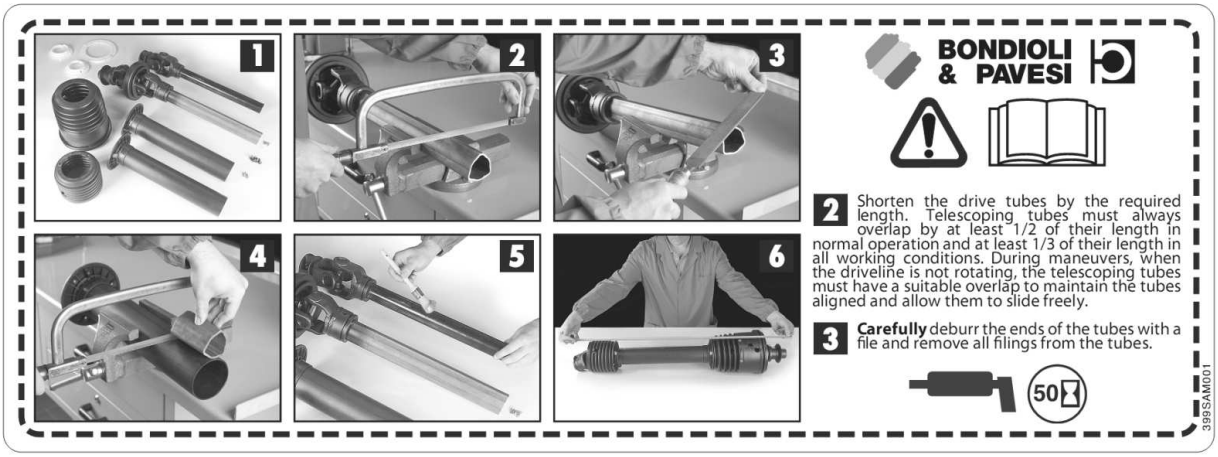


Fig. 14. Instruction of PTO shaft shortening

CAUTION:
Handle all parts with utmost care. Never place your hands or fingers between one part and the other. Wear safety clothes such as gloves, protective footwear and goggles. The operation of shortening must be carried out with the utmost care as the PTO shaft will have to be replaced if the telescopic shafts are shortened to an excessive extent.

CAUTION:
The PTO shaft should be mounted only during operation time and disconnected from tractor PTO for transport and service.

NOTE:
The manufacturer declines all liability for damage caused by an incorrectly fitted or used PTO shaft.

CAUTION:
Use the machines with PTO shafts designed to drive them. Before the work begins, check the safety guards (in tractor, mower and PTO shaft), if they are placed correctly and are not damaged. Damaged or lost parts must be replaced with genuine ones. Make sure the PTO shaft is properly mounted. It is forbidden to approach the rotating parts, because it may lead to serious injuries or even death. All service and repair operations must be done only after the tractor engine has been stopped and ignition key off, all rotating parts have come to the complete standstill and the cutterbar is on the ground. Before the operation begins, read operator's manuals of both the machine and PTO shaft.

5.5. Preparing the mower for operation

NOTE:
SaMASZ protects the cylinders with special grease against weather which may cause premature wear. Before operating the mower, remove the excess grease from the cylinder piston.

Follow items 5.1, 5.2, 5.4, upon performing these activities the mower is ready for operation. Then:

- open hydraulic valves (**Fig. 11**),
- lower cutterbar freely until cutterbar touches the ground,
- adjust the cutterbar setting with mower's upper connector onto desired mowing height. Optimal angle of cutterbar in relation to the ground should be between 0° and 5°. This angle is result of tightening or extending the link,
- with hydraulic cylinders mount the mower on either tractor's left or right,
- set the desired cutting width by folding guides back (**Fig. 15**) under proper angle,
- slowly engage the mower's PTO shaft drive until cutting discs reach their nominal rotating speed.

NOTE:
DO NOT pull the cutterbar towards the tractor, because it will lead to cutterbar's premature wear or even its damage.

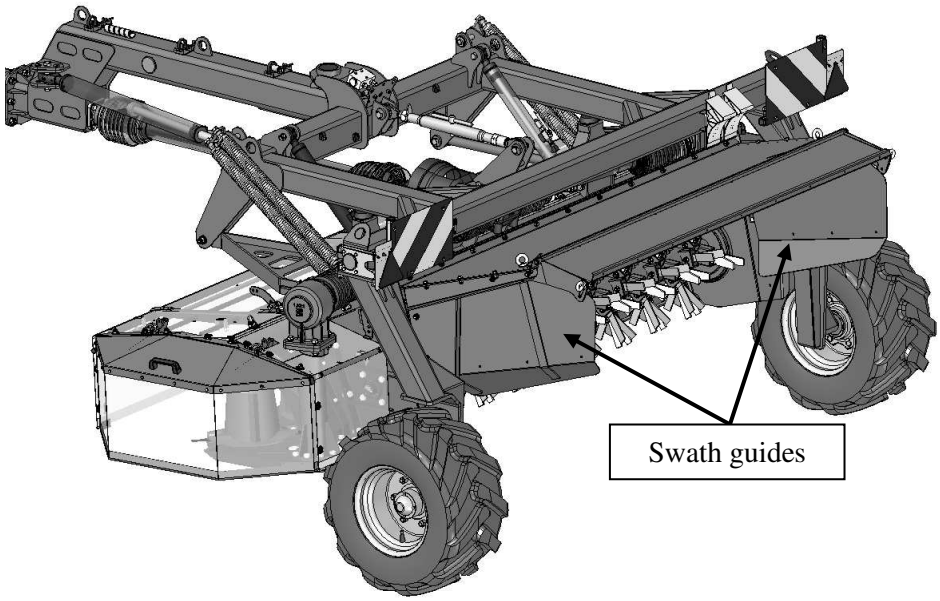


Fig. 15. Swath guides

5.6. Operation (mowing)

WARNING:
The operator must be seated in the tractor's driver's seat when the machine is operating since only from that position is he able safely and properly operate the mower. Before he leaves the driver's seat, the operator must stop the engine, apply the parking brake and turn off the tractor engine.

Always use appropriate protective equipment (safety footwear, gloves, ear protection and dust mask).

Before using the machine, make sure that all the safety devices are in their correct positions and in a good condition. These safety devices must be immediately replaced if they are faulty or damaged.
In particular, the protective cover must be checked regularly. It must be immediately replaced if it is missing or damaged in any way.

1. Main advantage of disc mowers is their small power demand – 20% less tractor power, small moment of inertia and possibility to manufacture mowers with large working width.
2. There is however a certain disadvantage - creased stubble, especially when it comes to lying grass. Straight grass may be mowed with horizontal adjustment of the mower and then the stubble will be even, but it will not look as attractive as with 2-drum or 4-drum mowers, because the knives work horizontally to the ground and inclined grass bends because of wind blasts. After the grass is mowed, it stands up, which makes an impression of inaccurate mowing. Every mower may leave stripes of uncut grass when it comes to the knives which cut the grass towards the grass direction.
   It is a normal phenomenon. Practically, it is not possible to achieve such attractive stubble as in 2-drum mowers, because the knives work horizontally or at an angle of up to 8° to the ground, and when it comes to 2-drum and 4-drum mowers, slantwise through the ground (even 23°).
   Despite these 'disadvantages', disc mowers are 'winning farmers' trust' and modern technologies give an opportunity to manufacture very durable mowers.
3. The most even stubble with very low grasses is obtained with disc mowers when half of the discs rotate to the right and half to the left. A disadvantage of this system is a narrow and thick windrow which needs to be spread out.

Fig. 16a. Mower in operating position

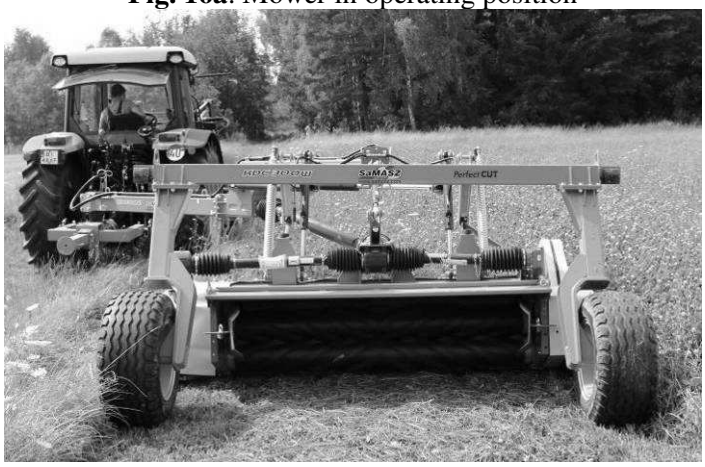


Fig. 16b. Mower in operating position

5.6.1. Essential information concerning mowing

Optimum work parameters

1. Inclination towards the front 0-5 degrees which equates to 1.8" - 2.8" of mowing height.
2. Operation speed around 6 mph or more, if the conditions allow.
3. PTO rpm = 950-1000 rpm. PTO rpm less than 1000 may cause stripes of uncut grass between the disc. On Client's special request: PTO rears = 470 ÷ 520 rpm. PTO rears > 540 rpm may lead to leaving pieces of uncut grass between discs.

High and inclined grass

4. Heighten the cutterbar's inclination to H = about 1.8".
5. If there is no inclination the grass will be wedged on the forming drums.
6. Speed can be more than 8 mph (the faster – the better)
7. Do not turn in the mowed grass.

- Optimum inclination of the cutterbar towards the ground is between 0° to 5°. If the inclination exceeds 5°, there might be a slight unevenness of mowed grass. It impairs slightly the quality of mowing and has an influence on the mower's operation. Inclination of the cutterbar to the other side quality of mowing is significantly impaired and in extreme situations, it may lead to damaging the cutting unit. When higher mowing heights are required, use optional toppings for high mowing.
- When high grass prevails, first and second cut should be mowed at height level 2.4" - 2.8", but when the grass grows low it should be mowed at 2". The last cut should be mowed a little bit higher, 2.8" - 3" above the ground.
- Too high a PTO rpm whirls the air, which may cause inclination of the grass in front of discs, which impairs the quality of mowing.
- Too low a PTO rpm impairs the quality of mowing and in some cases the mower stops mowing (too low linear velocity of the knife).

- In contrast with 2-drum mowers, straight mounting of the mower and full speed are not always possible. Adjust inclination of the mower, PTO rpm, speed and correctness of knife-mounting to get the best results.
- In case of mowing soft meadows, the pressure of the cutterbar on the ground should be reduced by adjusting support springs.
- Always check to make sure that the ground speed suits the conditions or work and that it does not create a potential source of danger.
- Do not take sharp turns anytime and do not operate in reverse.

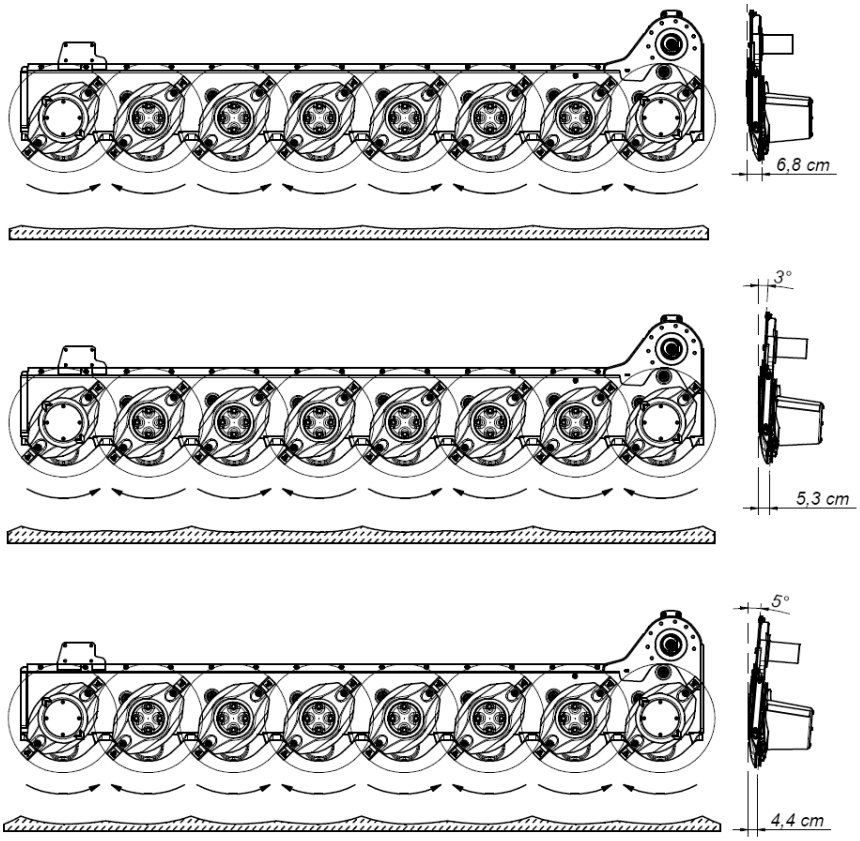


Fig. 17. Shape of the stubble 0°, 3° and 5° slope of the cutter bar

NOTE:
Improperly relieved cutting unit of the mower will cause increase of cutterbar pressure on the ground which will lead to faster wear of sliding skids, overload of cutterbar, higher fuel consumption, damage to the stubble and contamination of the fodder.

5.6.2. Mower clogging and jams

When operating the mower pay attention to variable conditions on field, which may influence the mower clog, such as: terrain unevenness, height and density of grass as well as other objects in the grass. In order to avoid clogging, mowing speed should be adjusted to the mentioned conditions. In order to prevent any clogging, also inspect tensioning of belt on belt gear.

In order to remove the machine clogging, lower the cutterbar onto the ground, disconnect the drive, take ignition key off and pay particular attention, remove excess material using sharp tool. After clearing the machine check if nothing has been damaged. When eliminating the mower's clogging, use also safety means for operator, so protective gloves and tight wear, due the risk wound, abrasion and damage of skin.

5.6.3. Taking turns on headlands.

Lift the cutterbar by means of hydraulic cylinders (**2**) (**Fig. 2a**, **Fig. 11**) and take a turn.

5.7. Unmounting the machine from tractor

WARNING:
When dismounting, make sure there is no person in between the machine and the tractor.

To dismount the machine from the tractor:

- Set the machine onto an even, stable ground,
- deactivate cutterbar drive, ignition of tractor and removing the key of the tractor's ignition lock,
- reduce the pressure in the tractor's hydraulics,
- Secure the machine against moving by placing wedges at wheels,
- Fold out the support leg and protect with safety pin,
- Disconnect the machine's hydraulics and electrics from the tractor,
- Dismount the telescopic articulated shaft and place it on the shaft holder, which is standard-delivered with the machine,
- disengage the machine from hangers of the tractor's lower links by lifting the three-point linkage,
- carefully drive the tractor away.

5.8. Storing

Mower should be stored on a hard, flat and level surface, under dry, roofed place to protect it from atmospheric precipitation. It is forbidden to remove a support preventing tilting single-axis equipment to the front or to the rear, if this is not required for work purposes.

6. MOUNTING AND ADJUSTMENTS

6.1. Mounting knives and timing of the knives

The knives should be mounted as shown on **Fig.18, Fig. 20**. Mount the knives so that cutting edges are directed towards the ground, so that a knife lifts the grass after cutting.

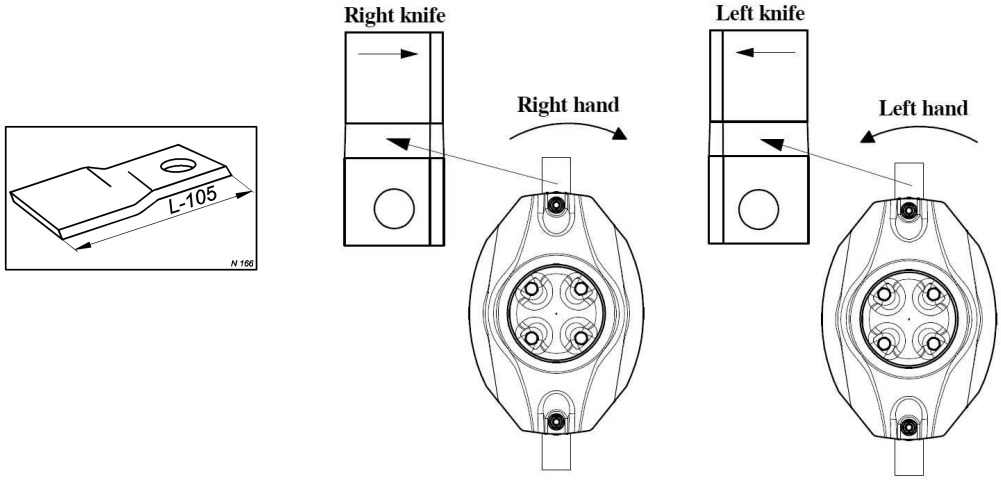


Fig. 18. Mounting of the knives on mowing discs

WARNING:
- Use only knives recommended by manufacturer.
- Check condition of knives before each operation. Worn or damaged knives should be replaced immediately.

6.2. Controlling condition of knives and holder pins

All knives should be of the same length and weight. Replace them, if necessary, only in sets of the same length and weight.

Knife holder pin cannot be worn more than provided in **Fig. 19**. Too big a pin wearing is enough for a knife holder to be replaced.

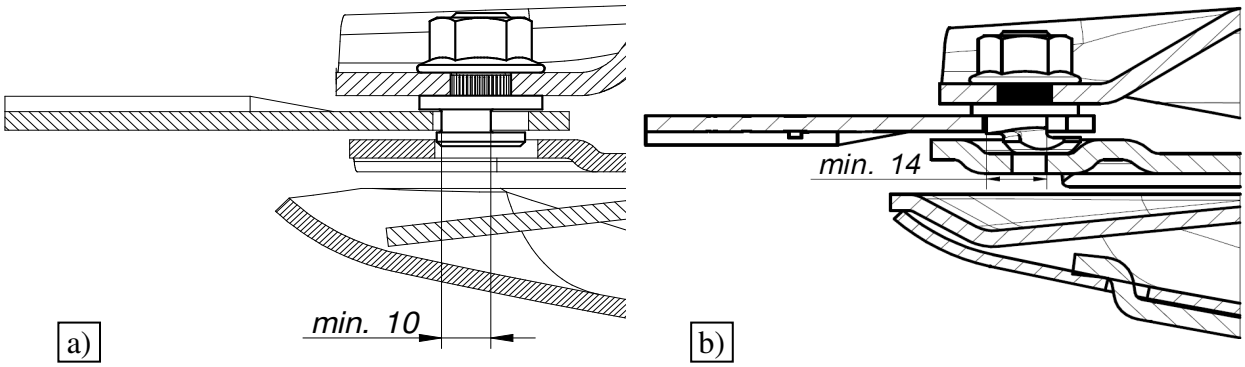


Fig. 19. Permissible wear of knife holder pin on disk a) knife base M12 b) knife base M12 with claw

WARNING:
- Use only holder pins recommended by manufacturer.
- Check condition of holder pins before each operation. Worn or damaged holder pins should be replaced immediately.

6.3. Replacing the knives and holder pins

Replace knives, if necessary, only in sets. as shown on **Fig. 20**. Knives should be replaced in pairs so proper disk balance is kept. On replacing knives pin of knife's holder shall be examined carefully. If holder's pin is worn (**Fig. 19**), both holders or the pins must be replaced with new ones.

NOTE:
Pay attention, whether the mower is not vibrating when operating for this proves, that disc (discs) operates only for 1 knife. Long-term operation will lead to serious damaging of the cutterbar. This is not covered by warranty. Have breaks while operating and check whether the knife set is complete.

WARNING:
When replacing knives, the engine must be stopped and the cutterbar must lie on the ground. PTO shaft must be disconnected. Discs should be perpendicular to cutterbar.

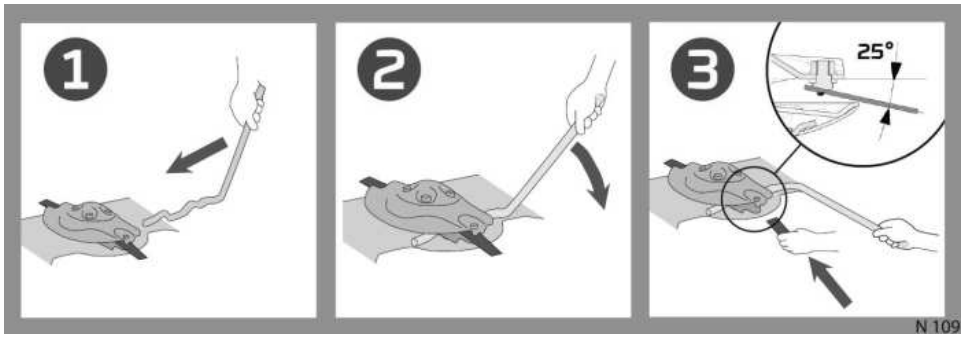


Fig. 20. Cutting knife quick replacement

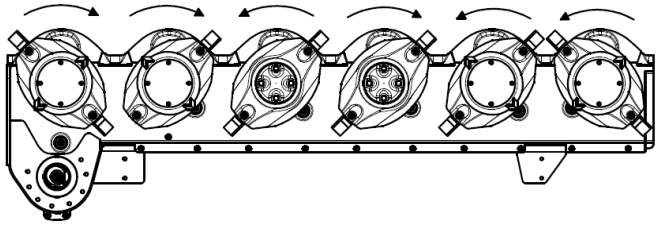


Fig. 21. Disc rotation directions on mower's cutterbar with cutting width of 8' 6"

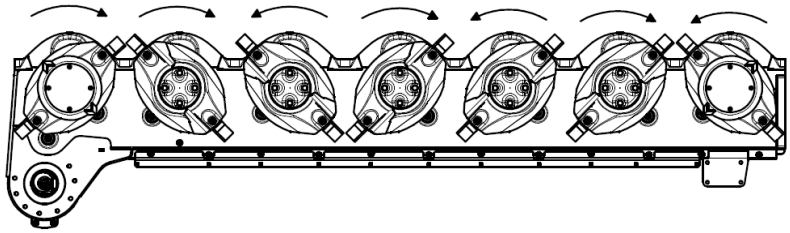


Fig. 22. Disc rotation directions on mower's cutterbar with cutting width of 9' 10"

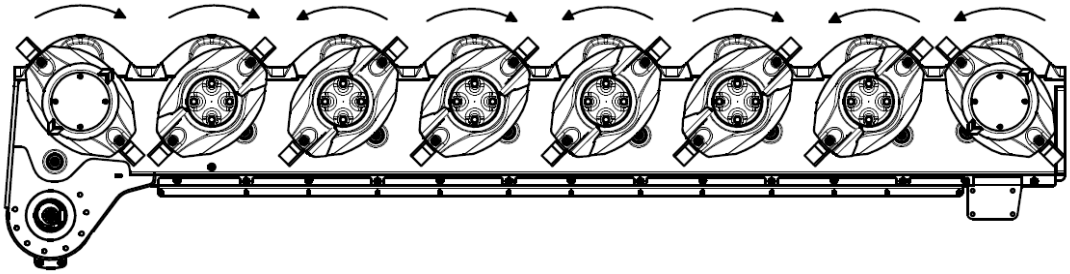


Fig. 23. Disc rotation directions on mower's cutterbar with cutting width of 11' 2"

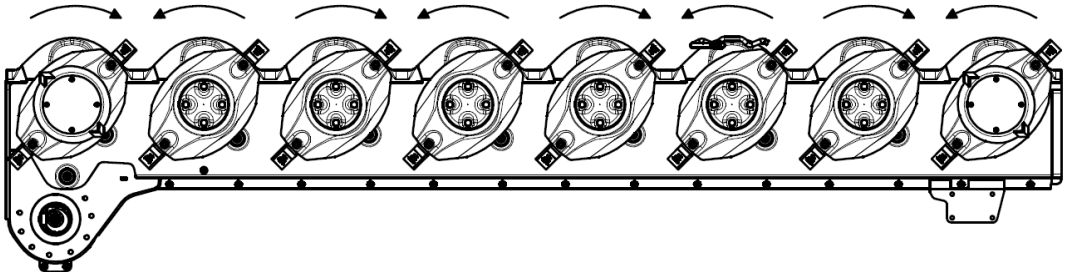


Fig. 24. Disc rotation directions on mower's cutterbar KDC 341 (wide swath)

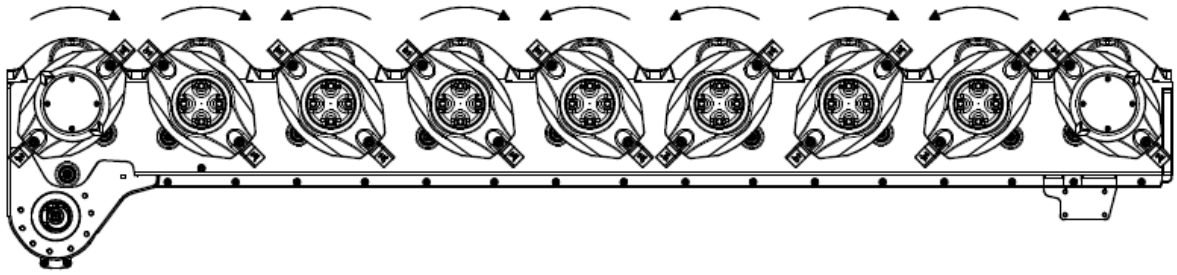


Fig. 25. Disc rotation directions on mower's cutterbar KDC 390

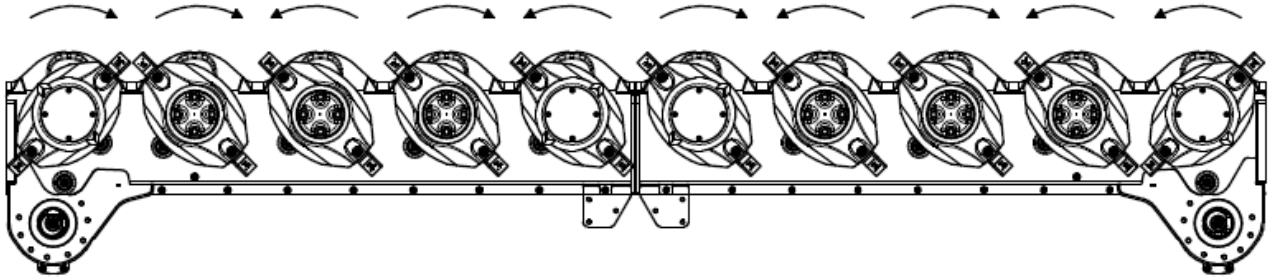


Fig. 26. Disc rotation directions on mower's cutterbar KDC 430

NOTE:
Due to various swath widths in offered mowers (and therefore various turns of discs), before mounting the knives first check turns of each disc (**Fig. 21**–**Fig. 26**).

NOTE:
Improper mounting of knives will lead the mower to choke. When mounting pay particular attention to knife rotating freely on the holder's pin.

NOTE:
Due to high rotary speed of discs, knife holders should be replaced in sets and feature the same weight – each holder has its own weight marked. Otherwise, it is highly likely that due to improper balancing, disc vibrations and damages to bearings will occur.

6.4. Swath width adjustment

In order to set swath width adjust swath guides (**1**) (**Fig. 27**) (Models: : KDC S/SL):
- loosen eye screw (**2**) on swath guide,
- set swath guide (**1**) as required,
- tighten bolt (**2**).

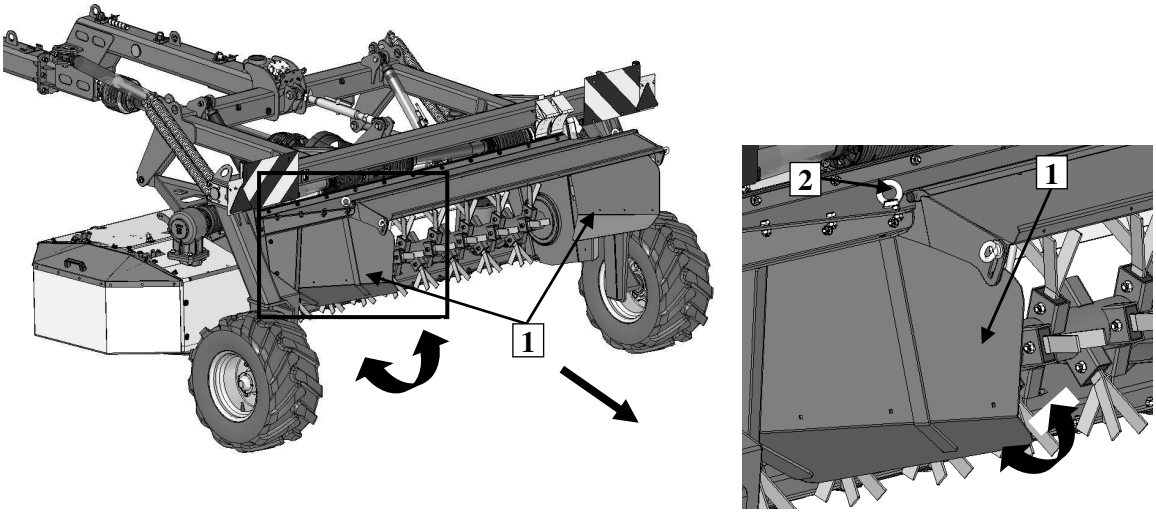


Fig. 27. Adjusting of swath guides: 1- swath guide, 2 - adjustment bolt

In order to set swath width adjust swath guides (**1**) (**Fig. 28**) (Models: KDC W):
- loosen eye screw (**2**) of swath guide,
- set swath guide (**1**) as needed,
- tighten bolt (**2**).

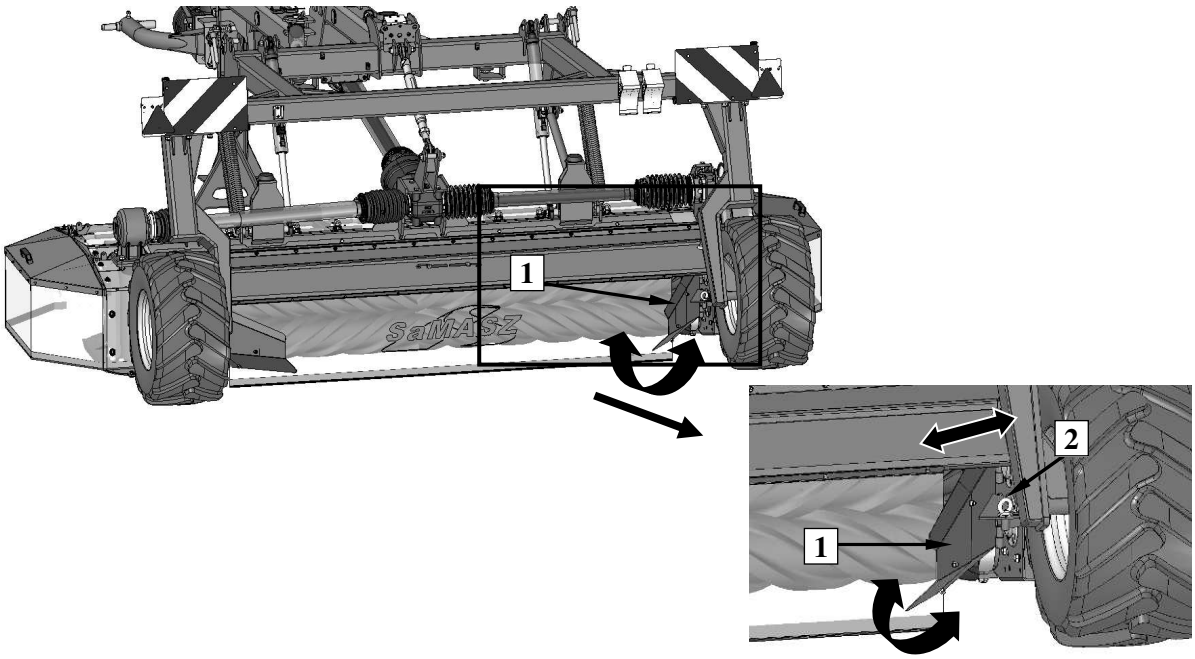
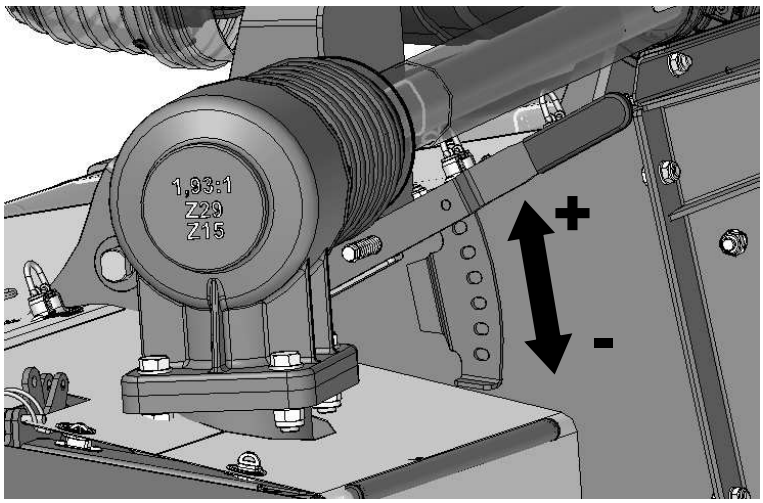


Fig. 28. Adjusting of swath guides: 1- swath guide, 2 - adjustment bolt

6.5. Adjusting space between tine conditioner's mask and its shaft

(Models: **KDC S**)

Depending on size and thickness of the mowing grass, it may be necessary to adjust the tine conditioner's mask. The higher and thicker the grass, the bigger the space between the tine conditioner's mask and its shaft should be. Proper adjustment should be based on experience, in so as not to block the tine conditioner and not to activate the friction clutch of PTO shaft. The mask is regulated as shown in **Fig. 29**.



„**+**" - increasing mask – conditioner space width
„**–**" - reducing mask – conditioner space width

Fig. 29. Conditioner plate adjustment

6.6. Replacing tine conditioner's tines

(Models: **KDC S**)

Prior to commencing any operation, check condition of bolts on which flails are set, as well as condition of flails themselves. If flails or bolts are worn or damaged, it is necessary to replace them. **Bear in mind, that flails should be replaced in pairs (opposite) featuring the same weight in order to keep shaft well balanced.** Not keeping the shaft well balanced may lead to premature wear of the bearings and the shaft.

To replace flails **(2)** unscrew nuts **(4)** by means of wrench, remove bolts (**3)** and mount brand new flails **(3)** (**Fig. 30**).

1. Conditioner roller
2. Welded flail
3. Bolt M16x60 gal. cl. 10.9
4. Nut M16 self-protecting gal. cl. 8
5. Key 12x8x45

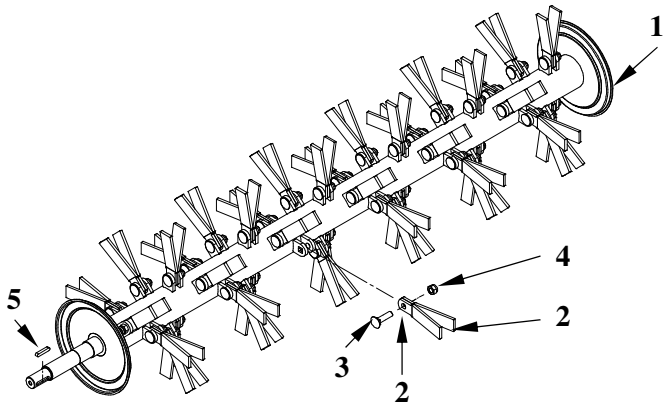
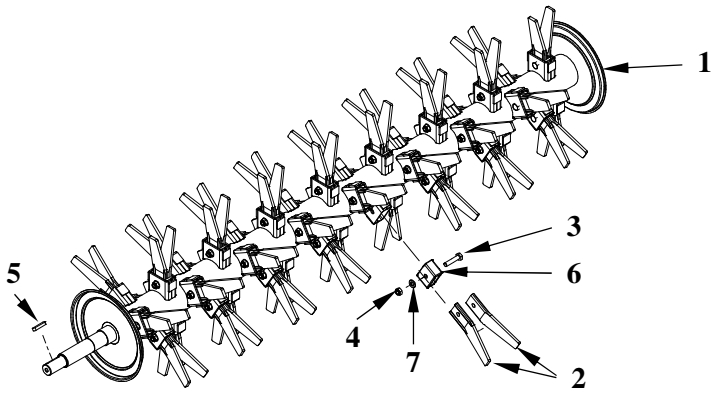


Fig. 30. Replacement of welded flails in conditioner roller



1. Conditioner roller
2. Plastic flail
3. Bolt M12x55 cl. 8.8
4. Nut M12 self-protecting gal. cl. 8
5. Key 12x8x45
6. Flail's insert
7. Plain washer ∅12

Fig. 31. Replacement of flails in light-weight conditioner roller

1. Conditioner roller
2. Steel flail
3. Bolt M12x55 cl. 8.8
4. Nut M12 self-protecting gal. cl. 8
5. Key 12x8x45
6. Flail's insert
7. Plain washer ∅12

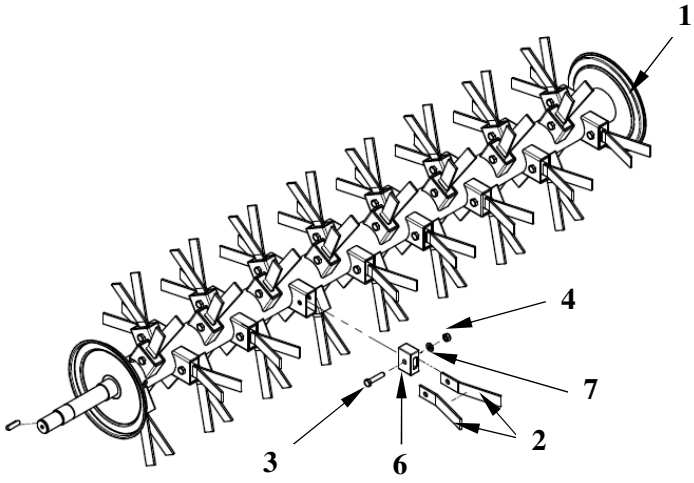


Fig. 32. Replacement of steel flails in conditioner roller

6.7. Adjusting force of the pressure of roller conditioner

(Models: **KDC W**)

If need be, the force of roller conditioner's pressure can be regulated by changing the tension of springs **S** (**Fig. 33**) by means of nut **N**. Adjustment should be done on both sides of the conditioner.

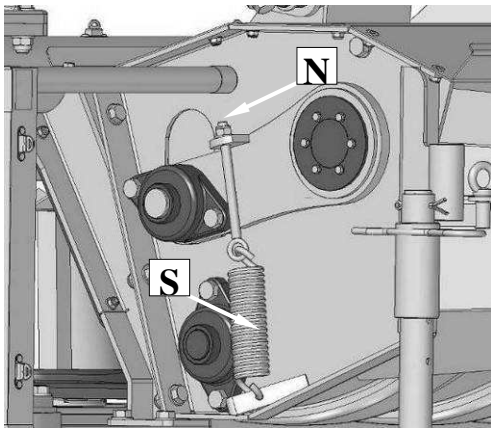


Fig. 33. Adjustment of impact force of rollers

6.8. Adjusting speed of conveyor belt

Speed adjustment is possible by means of manual adjusted throttle valve. Throttle valve is located by EURO plug of hydraulic section for hydraulic drive. Direct adjustment is possible by means of a graduated knob. Turning the knob to the left will increase conveyor speed, while to the right – will reduce conveyor speed.

6.9. Maintenance and service

6.9.1. Checking the condition of cog belt and tension

(Models: KDC S / KDC W)

Drive from conditioner and rollers driving shaft is transmitted by cog belt onto conditioner's axis. Constant belt tension is provided by tightener, adjusted with tensioning bolt **B.**

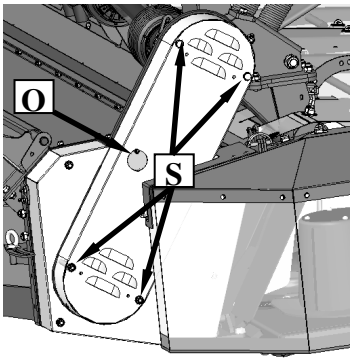


Fig. 34a. Protective guard of drive belt

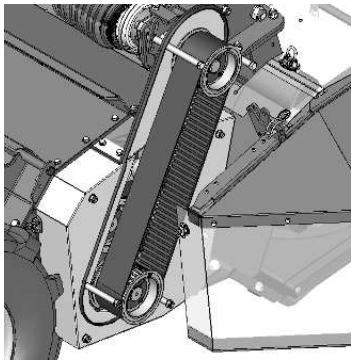
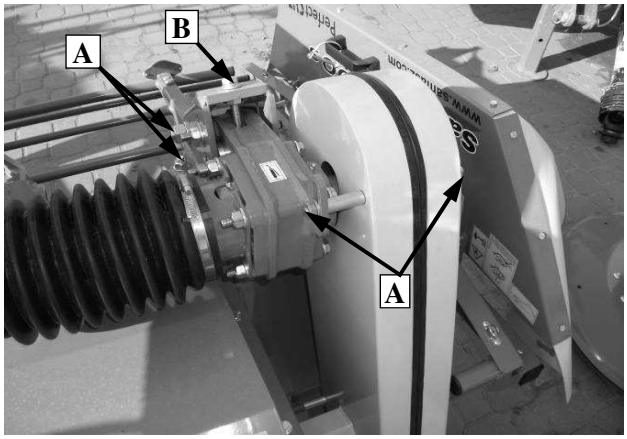


Fig.34b. View of properly tightened drive belt

When starting for the very first time after ca. 2 hours of operation, control tension of cogbelt transmitting the drive onto the conditioner or rollers. If cogbelt tension is too low, tighten it as per label N175.



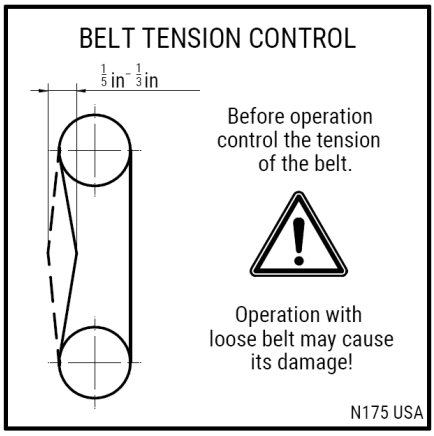


Fig. 35. Control and tension of cogbelt

Procedure for tensioning the cogbelt:
1. Loosen nuts and bolts (**A**).
2. Tighten cogbelt by means of tightening bolt (**B**) and check the belt deflection as per label N175.
3. Tighten nuts and bolts (**A**).

6.9.2. Daily maintenance

When you finish each day of operation carry out the following maintenance:
- check all visible parts and components and their connections; tighten all loose bolts and nuts and replace all damaged and/or worn parts with new genuine ones,
- clean the mower, especially between discs and cutterbar, because grass with mud may damage bearings in disc module,
- remove grass and mud,
- check the cutterbar,
- grease PTO shaft tubes with STP grease,
- if necessary, lubricate the parts and components according to lubrication instructions (chapter7).

Parts which may cause risk to operator's health and safety are as follows: damaged discs, missing or damaged safety covers, worn or damaged hydraulic hoses, PTO shaft guides, worn knives and knife holder pins.

6.9.3. After-season maintenance and storing of machine

It is recommended for the operator to wear protective gloves when performing maintenance works.

At the end of mowing season the following shall be performed:
- lower the mower's cutterbar onto the ground,
- take the PTO shaft extension out of the tractor rpm or dismount the complete PTO shaft and install it into corresponding holder at the 3-point linkage frame,
- unmount hydraulic and electrical hoses from the tractor and hang them onto corresponding holders on the 3-point linkage frame,
- unmount the mower from the tractor (reverse procedure as in case of attaching the mower to the tractor item 5.1), and then drive the tractor away.

Mower should be stored in standstill position, so it is supported onto supporting leg and the cutterbar. It is recommended to store the set on paved ground, preferably in roofed places, inaccessible to unauthorized personnel or animals.

If the machine is stored for a long period of time before first operation, its technical condition should be examined and special attention should be paid to the hydraulics and the drive. Paint the area where the paint is missing, hydraulic hoses checked and lubricated.

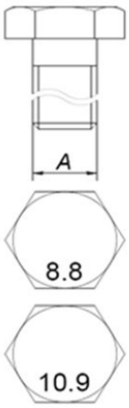
Additionally:
- remove any traces of rust and paint the area,
- check the oil level in the angle drives and the cutterbar (Section 7). If leaks are discovered, they should be repaired immediately and lost oil replaced. If water in oil is discovered, immediately change the oil as it could cause corrosion of internal mechanisms such as gear wheels, bearings, or shafts, and cause breakdowns,
- periodically inspect the mower and lubricate moving parts in order to protect them from corrosion which adversely affects the proper operation of the mower,
- check hydraulic hoses regularly. Replace any damaged or old hoses. In any case, you should replace hoses that have been in use more than 5 years from the date of their manufacture printed on the hose.

After storage period, before the machine is used:

- check the mower's technical condition, and the transmission in particular,
- supplement the paint where missing,
- make sure that all nuts and screws are tightened properly,
- make sure that all guards are in place,
- protect all moving parts with grease in order to prevent their baking and creating any sources of corrosion, which significantly influences mower's proper operation,
- check oil level in axis gears and cutterbar. If leaks are found remove them immediately and refill the oil. If water in oil is found, immediately change the oil as it could cause corrosion of internal mechanisms such as gear wheels, bearings, or shafts, and cause breakdowns.

Tab. 8. Torque values for bolts

A	6.8		8.8		10.9		12.9	
	Maximum torque							
	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm
M4	1.5	2.2	2	3.0	3	4.4	4	5.1
M5	3.5	4.5	4.5	5.9	6.5	8.7	7.5	10
M6	5.5	7.6	7.5	10	11	15	13	18
M8	13	18	18	25	26	36	33	43
M10	27	37	37	49	55	72	63	84
M12	47	64	63	85	97	125	111	145
M14	74	100	103	135	151	200	177	235
M16	118	160	159	210	232	310	273	365
M18	162	220	225	300	321	430	376	500
M20	229	310	321	425	457	610	535	710
M22	314	425	435	580	620	820	726	960
M24	395	535	553	730	789	1050	926	1220



In the absence of specific torque values, the following chart can be used as a guide to the maximum safe torque for a particular size and grade of fastener. There is no torque difference for fine or coarse threads. Torque values are based on clean, dry threads. Reduce value by 10% if threads are oiled before assembly.

6.10. Conveyor control and adjustment

6.10.1. Cleaning belts and rollers

NOTE:
Check the condition and the conveyor belts condition after each hour of operation. If you find bulges caused by rolling the grass onto rollers, clean them by using the lever and remove the grass. Using conveyors with bulged belts may lead to their premature wearing.
NOTE: Conveyor belts are not covered by warranty.

1. In order to clean roller switch lever **D**, rotate belt to **1** and hold down until bulges disappear (**Fig. 35**). This should also be performed from the other side of conveyor if necessary.

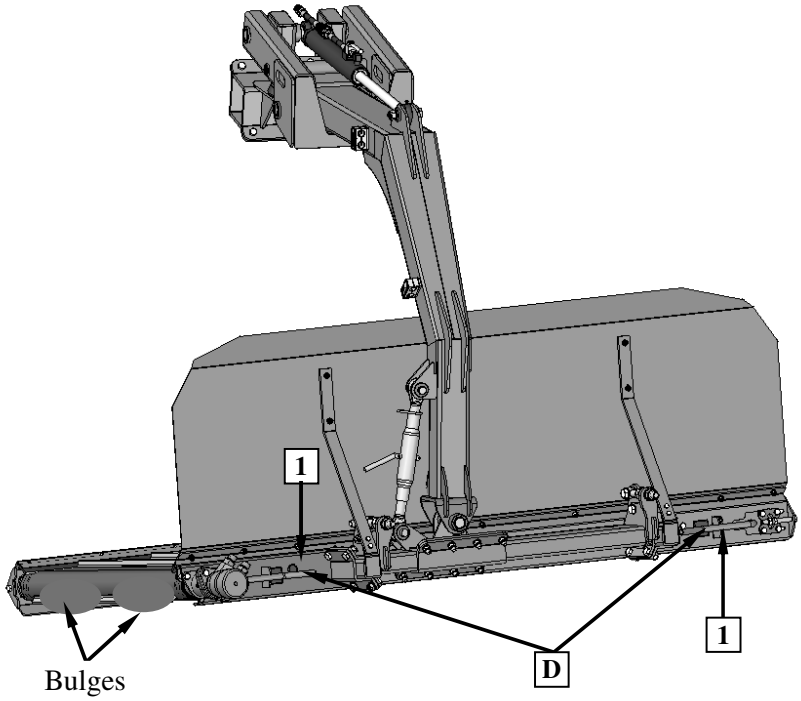


Fig. 35. Cleaning conveyor rollers

2. Impurities inside belt are removed once conveyor is in vertical position. Belt is deflected with hand and then impurities are removed with a hook wire.

Fig. 36. Removing impurities from inside belt

6.10.2. Conveyor belt replacement and adjustment instruction

KDC mower with conveyors must be suspended onto tractor.

I. The adjustment of the belt conveyor should be done only when the conveyor is in its working position (horizontal)

1. Using a marker, mark lines on millimeter measures – decal N-79 (if belts worked well).
2. Loosen tightening roller mechanism – bolts M10 - **S_1**, nuts, M12 – **N_2** and loosen adjustment bolt M12 – **S_2** by approx. 1.2" (**Fig. 37**).

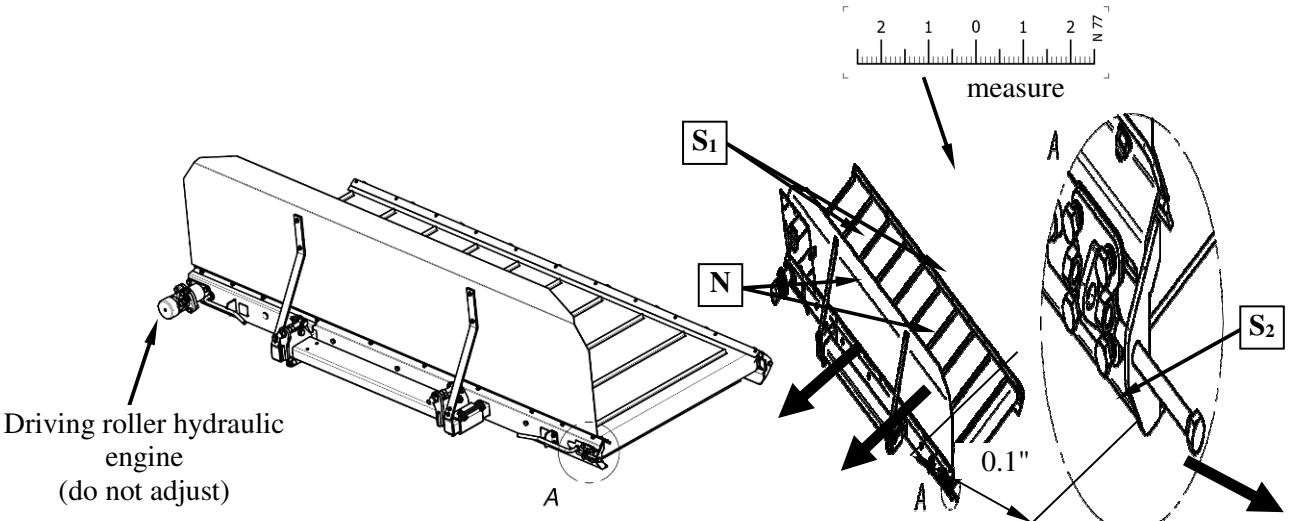


Fig. 37.

Steps to be taken when transporting in vertical position. Mower shall be leaned to the front so the distance between conveyor and the ground is approx. 3' 3".

1. Loosen bolts M10 – **S1**, nuts M12 – **N2** adjustment bolts M12 – **S2** of front tensioners (**Fig. 38**).

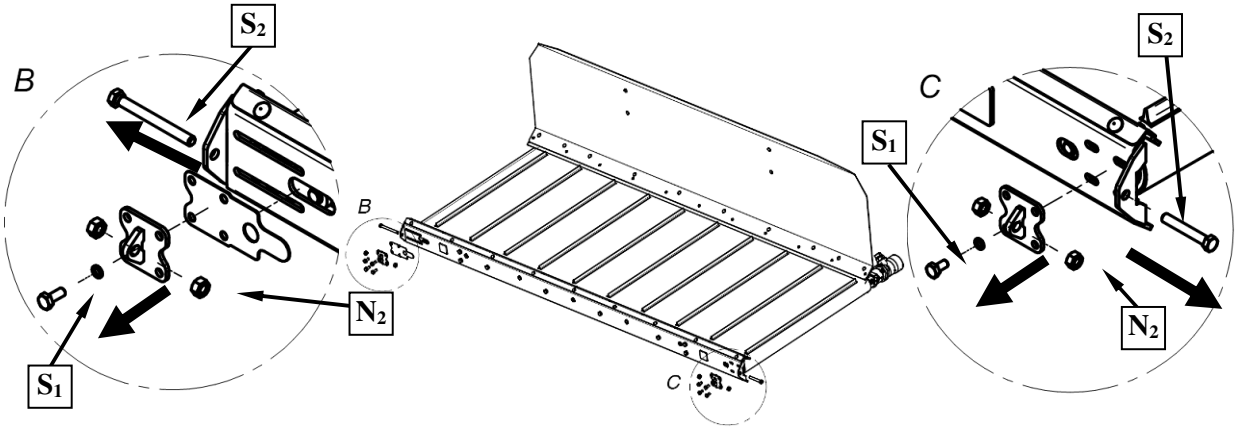


Fig. 38.

2. Dismount front belt in lower part of the conveyor **P** (**Fig. 39**). Slide belt **T** down (**Fig. 40**).

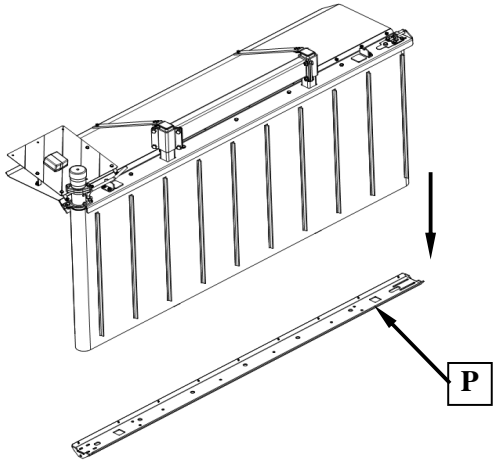


Fig. 39.

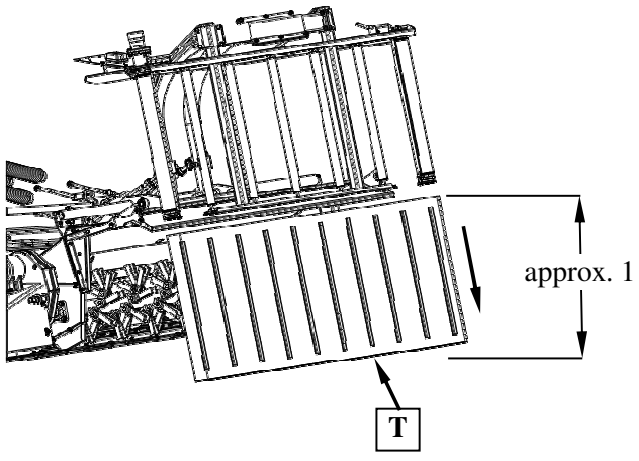


Fig. 40.

3. Clean and check condition of bearings in rollers – worn ones shall be replaced.
4. Mount the new belt upwards.
5. Mount front belt **P**.
6. Mount front tensioners and tighten rear tensioner.

II. Maintenance of belt conveyor adjusted in "work" position.

1. Mark two lines on newly mounted belt in intervals of l = **3.9"** (**Fig. 41**).
2. With adjustment screws **S2** tighten the roller so the distance on belt between marked lines is l **= 3' 4" - 3' 4.2"** (lines on measures from item I. 1 may prove to be helpful). The distance between the lines may differ on both edges of conveyor's belt.

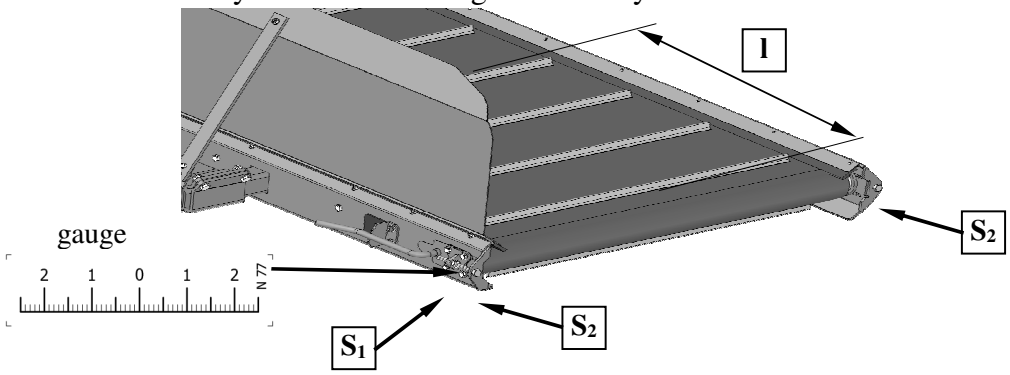


Fig. 41.

3. Measure diagonals with use of 9' 10" measure using angle bars.
4. Start the mower and in particular hydraulic drive, gradually increasing rpm.
5. Adjust with screws **S2**, locking screws **S1** each time – to be repeated until fine-tuned, so there are no bulges on the belt.

IMPORTANT:
Precision is recommended, so belts and their edges work symmetrically on rollers. Well-adjusted belts cannot bulge in places where v-belt is guided inside the roller channel.

7. LUBRICATION

7.1. Cutterbar

Refilling oil in the cutterbar is done through the inlet **A** (**Fig. 42**). Adequate oil level is 0.2" - 0.3" from the cutterbar bottom. In order to drain oil from the cutterbar dismount the cutterbar enclosure by releasing bolts (**B**). The best time to drain the oil is immediately after the operation, if still warm. Amount of oil to be filled is provided in table.

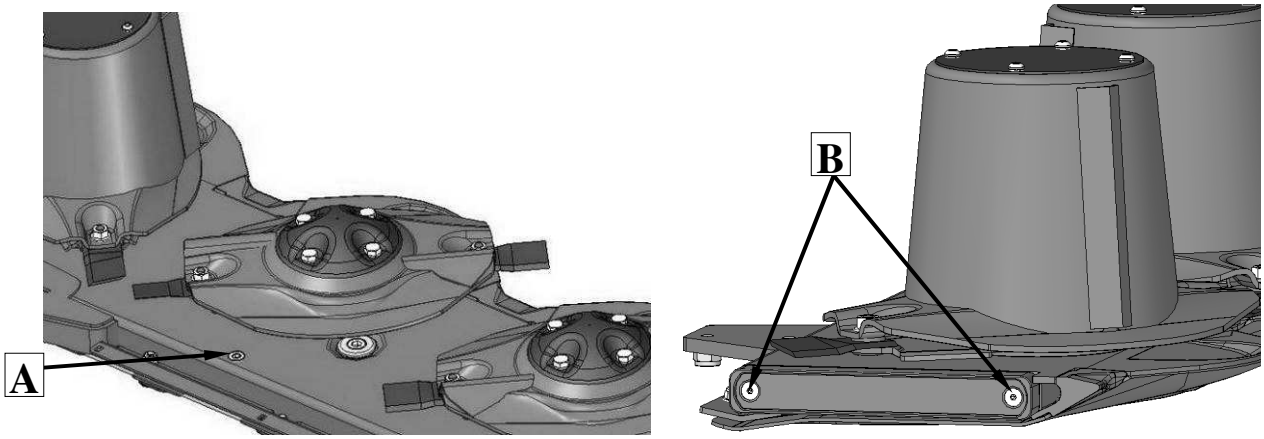


Fig. 42. Points of oil inspection and replacement in cutterbar

Tab. 9. Amount of oil to be filled in cutterbar

Mower type	Oil volume [US gal lqd]	Oil type	Replacement frequency
KDC – 2,60 m	1.3	80W90	Once every 3 seasons (with intensive operation)
KDC - 3,00 m	1.6		
KDC – 3,40 m	1.7		
KDC – 3,90 m	1.85		
KDC – 4,30 m	2 x 1.2		

7.2. Intersecting axis gears

Every day before starting work check the oil level and, if needed, refill after having removed the vent **A** on the top of the gear (**Fig. 43**). The oil level can be checked through check opening **B** on the side of the gear. Please refill the oil until it is visible in the check opening. Oil level in gear: approx. 0.25 U.S.gal. Removing the old oil from the gearbox is done through the outlet **C**.

Tab. 10. Amount of oil to be filled in gear

Mower type	Oil volume [US gal lqd]	Oil type	Replacement frequency
All types	approx. 0.25	SAE 80W/90, API GL-4	Once every 3 seasons (with intensive operation)

IMPORTANT:
The above instructions should be strictly followed. If the discs in the cutterbar rotate loosely, do not worry about high intersecting axis gear temperature; after long working time, it may reach as much as 60-80°C.

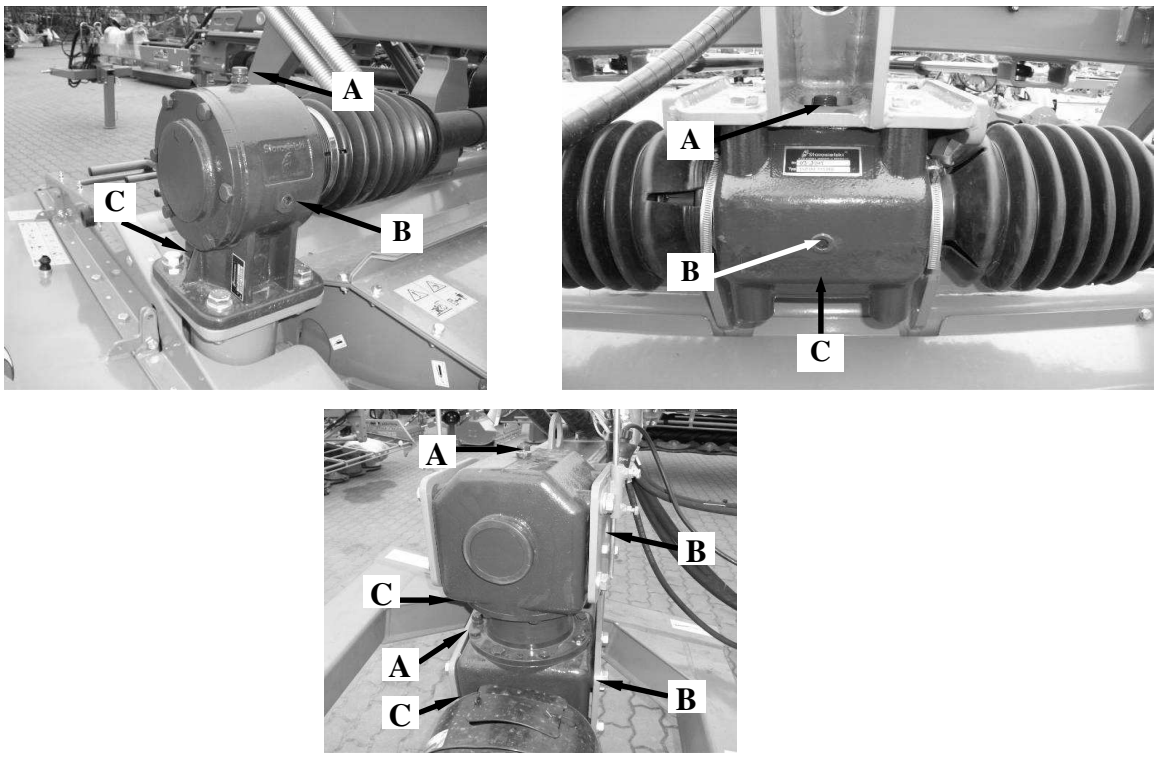


Fig. 43. Points of check and oil replacement in intersecting axis gears

7.3. Roller conditioner's gearbox

Before you check the lubrication of the gearbox, remove the safety guard. Every day before starting work, check the oil level and, if needed, refill after having removed the vent **A** (**Fig. 44**) on the top of the gearbox. The oil level can be checked through the check opening **B** at back wall of the gear. Refill the oil until it is visible in the check opening **B**. The oil level: about 0.13 U.S.gal. Check oil level when the cutterbar is on the ground. Removing the old oil from the gearbox is done through the outlet **C**.

Tab. 11. Oil capacities in roller conditioner's gearbox

Model	Oil capacity [US gal lqd]	Oil type	Lubrication frequency
All types	0.13	80W90	Once every 3 seasons (if working intensively)

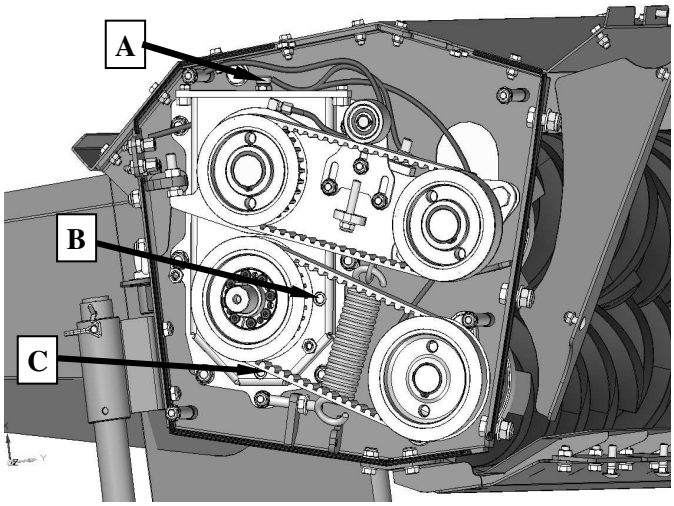


Fig. 44. Roller conditioner's gearbox lubrication points

7.4. Bearings and joints

Every 50 hours of mower's operation, lubricate bearing beds on conditioner rollers as well as mower's main joints (**Fig. 45** – **Fig. 48**). Manufacturer recommended lubricant is **ŁT43** grease or other equivalent lubricant for rolling and sliding bearings which operate in temperatures between -30° and +130°C.

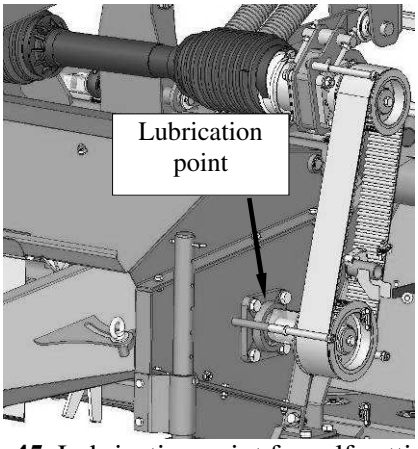


Fig. 45. Lubricating point for self-setting bearing

Conditioner lubrication points:

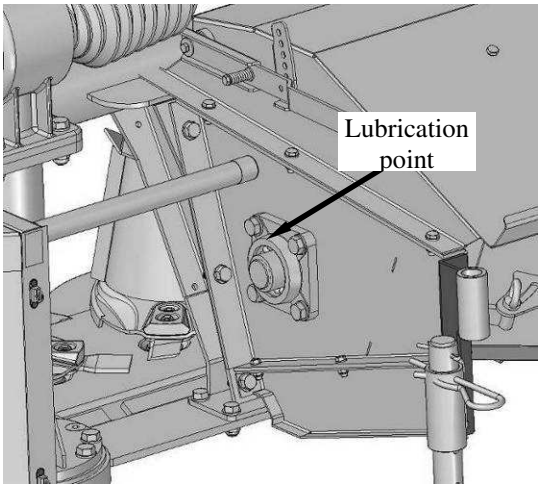


Fig. 46.Non-locating bearing lubrication point

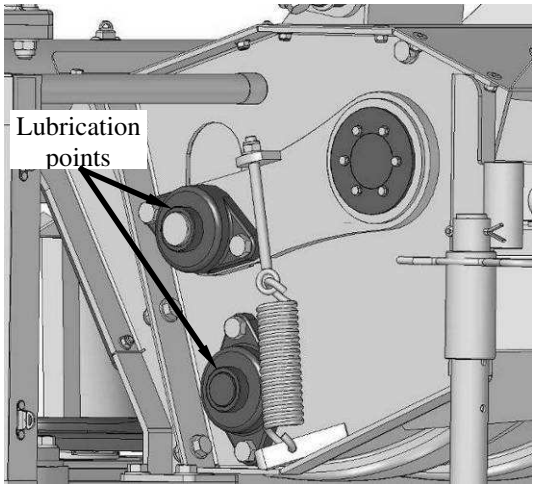


Fig. 47. Non-locating bearing lubrication point

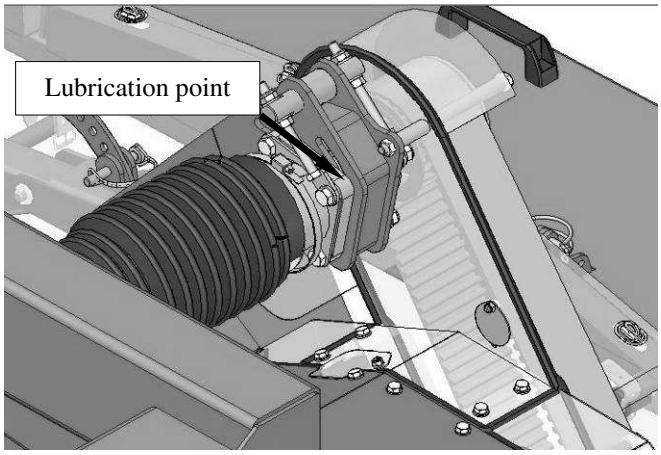


Fig. 48. Non-locating bearing lubrication point on conditioner and shafts to be lubricated with grease ŁT 43

7.5. Risks present when lubricating

- If risk of splashing is present, make sure to wear protective eyewear with side guards.
- When lubricating protect eyes and skin against contact with the substance. Therefore use adequate protective wear with long sleeves and protective shoes. Also use protective gloves. In case of a contact with skin, immediately wash the infected area with plenty of soap water.
- Do not allow the product to contaminate water outlets, water courses and soils.
- In case of an unintentional release to the environment plug the leak, limit the spillage, and then collect the oil with non-flammable absorbent material (e.g. sand).
- The product is flammable. In case of fire, use adequate fire-extinguishing means (e.g. foam, water mist, extinguishing powders). Do not use water jets.
- Disposal of the used product must be made according to official regulations. Improper disposal of the used oil poses danger to the environment.

8. MALFUNCTIONS AND THEIR REPAIRS

Tab. 12. Malfunctions and their repairs

Malfunction	Reason	Repair
Mower stops working or leaves stripes of uncut grass between the discs	Lack of knives	Put on knives
	Worn knives	Replace knives
	Improperly mounted knives (left – right)	Put on knives strictly according to instructions
	Too high tractor's engine rpm (The most frequent mistake)	Reduce rpm
	Too low work speed	Speed up to V ≥ 6 mph or more
	Damaged tractor's PTO shaft, drive not transmitted	Repair
	Lying grass	The inclination – the angle zero
	Mower with either tine or roller conditioner may mow improperly in case of very short grass or after rain	
Mower is blocked	Damaged bearings in the disc hub	Replace bearings
	Damaged cogs in the cutterbar	Check all cogs
Mower does not work even though drive is transmitted from tractor	Worn roller in the gear	Replace the gear
	Worn or cut down hollow on cutterbar drive shaft	Put a new hollow
Excessive loudness during work	Too low oil level in the cutterbar	Check oil level and refill
Mower slows down even though rpm value is stable	Damaged friction clutch in the cutterbar	Replace the clutch
Conveyor is being blocked with grass	Too low speed	Increase – adjust to the grass weight
Mower is blocked with grass – no grass guiding or guiding is uneven	Too low mowing speed	Increase driving speed to 6 mph or more
	Swath guides set too narrow	Widen swath guides to the maximum
Leaking cylinder	Contaminated oil in the tractor hydraulics	Replace oil in the tractor hydraulics (recommended oil purity class according to NAS 1638 is minimum 9-10). Provide brand new cylinder repair kit and replace worn gaskets
Excessive vibration during work	Damaged PTO shaft	Check the condition of PTO shaft and if need be replace
Oil leak in gear	Not tight assembly	Examine tightness and check oil level

9. DISASSEMBLY AND WITHDRAWAL FROM USE

9.1. Scrapping

If the mower cannot be repaired anymore, it should be withdrawn from use.

To do so, oil from intersecting axis gear and cutterbar should be drained and delivered to a proper waste treatment company. Clean the mower parts, dismantle and dispose properly of all plastic parts. After that, the mower can be scrapped.

NOTE:
Prior to commencing repair works the mower should be disconnected from the tractor.

NOTE:
It is forbidden to make any repairs under farming machine, or its individual components, which is lifted and unprotected against a free fall.

9.1.1. Restarting the machine after repairs or longer storing periods

- Make sure that all nuts and screws are tightened with correct torque.
- Make sure that all guards are installed in place.
- As the storing period is over lubricate the whole machine.
- Check pressure in tires.

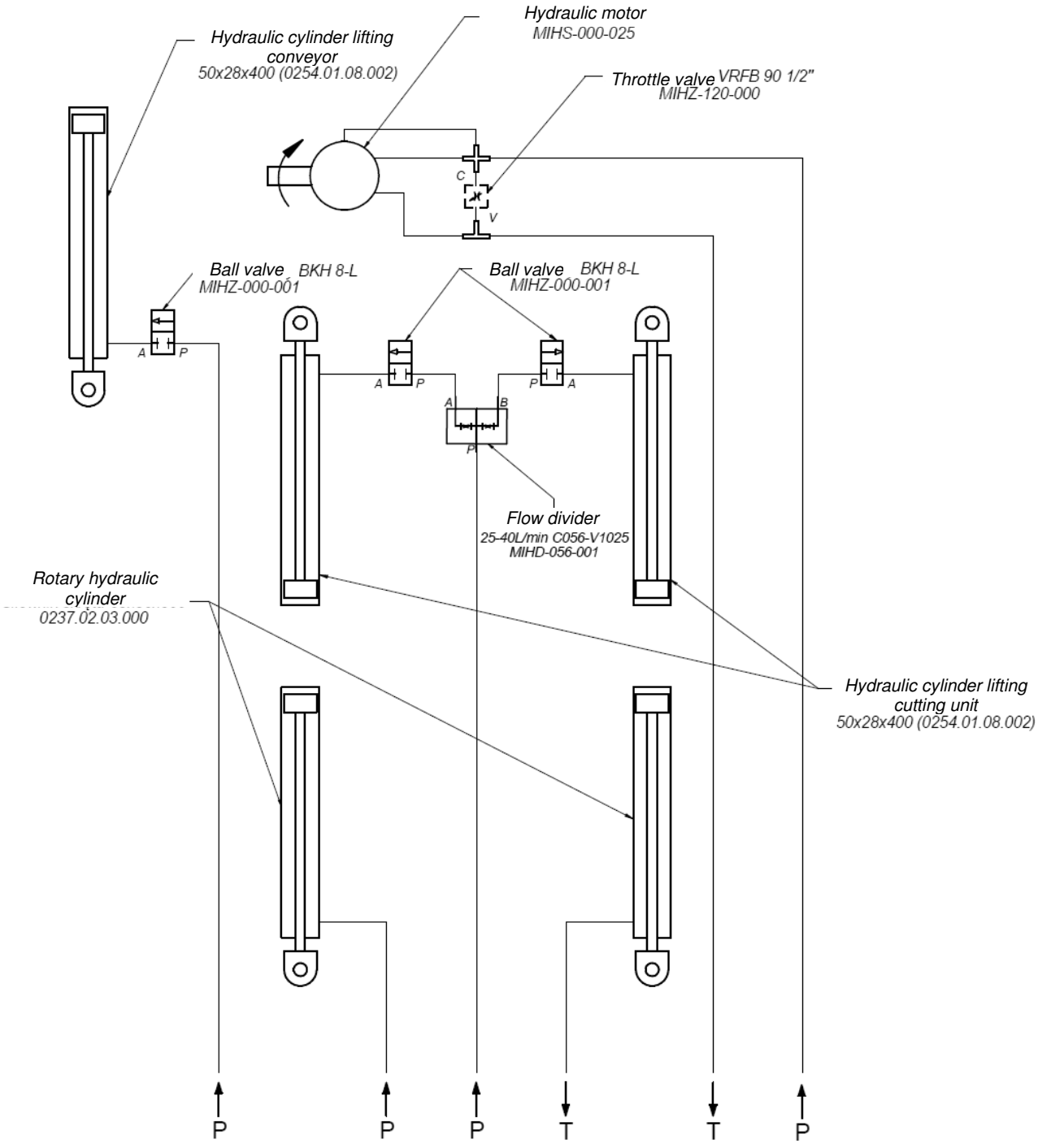
9.2. Demontage and withdrawal from use

If the mower cannot be repaired anymore, it should be withdrawn from use. For this purpose oil from intersecting axis gear and the 3-point linkage frame should be drained and thoroughly clean any excess oil with cleaning agent, take v-belts and any elements made of plastic. These should be delivered to a proper waste treatment company.

Remaining metal parts should be sold to breaker's yard.

NOTE:
When dismounting the machine pay particular attention to and additional dangers, as crushing, cutting, wounding, concussion and abrasion. Special protective equipment must be used: gloves, protective clothing, glasses etc. Pay attention not to allow the machine lose its stability and therefore protect it with supports.

10. HYDRAULIC SCHEME



11. WARRANTY CARD

TRAILED DISC MOWER

	Serial number Date of manufacture Manufacturer stamp QC signature
	Date of purchase Dealer stamp Dealer signature

The product quality has been checked and meets the required standards and regulations and is permitted for use.

NOTE: A warranty card without the required information or with corrected or illegible information – **is invalid.**

12. WARRANTY TERMS

12.1. Warranty claim procedures

1. The manufacturer guarantees its products against faults in materials or production.
2. Warranty period is for two years from the date of sale to the purchaser, stated above.
3. Any repair which is subject to warranty should be carried out by an authorised SaMASZ dealer. Upon completion of the repair, the dealer must submit a warranty claim within 14 days.
4. Warranty claims regarding replacing of the product are considered if received within 14 days after it is completed by the manufacturer.
5. The following situations are not covered by the warranty:
   a) **use of the mower for any purpose other than described in the operator's manual,**
   b) **fortuitous events or other occurrence, for which the Manufacturer does not bear any responsibility,**
   c) **normal wearing of parts such as: mowing discs, slides, knife holders, intersecting axis gears and parts within, bushings and sliding bushes, clutches, joints, cutting knives, v-belts, cogs, driving chains, conditioner flails, rubber elements, rubber and metal dampers, bearings, lower hubs, canvas covers, tires, conveyor belts, guide rubber elements, fastening elements, etc.**
      These repairs may be carried out only at the purchaser's cost.
   d) **operation on stoney fields and results such as: damage tine conditioner's shaft, discs, bending of cutterbar (stone with its diameter of 5.5" will not move between the discs and conditioner's shaft),**
   e) **running into any obstacle,**
   f) **too fast lowering of the cutterbar to the ground,**
   g) **transport and accidental damage,**
   h) **breaking, damage of tine conditioner's shaft, conveyor's belt.**
6. The Purchaser bears the costs of technical evaluation - when the manufacturer finds that a claimed product is free of defects and a technical report confirms that.
7. The Manufacturer has the right to cancel the warranty in the following cases:

a) **interference of the interior of the mower, changes of its mechanical design or intentional damages, bending parts of the mower and so on,**
b) **operating with only 1 knife on the disc or without disc cover plates,**
c) **damage caused by accidents, running into obstacles or other events, for which the warrantor is not responsible,**
d) **use of knives, knife holders and mountings other than originally delivered by SaMASZ,**
e) **negligent maintenance,**
f) **use of non-genuine spare or replacement parts that are not specifically designed for the model in question,**
g) **lack of needed records in the warranty card or filling in the warranty card independently,**
h) **use of the mower not in accordance with operator's manual or for incorrect purpose, or use of the machine by untrained persons.**

8. Manufacturer can break the service agreement with immediate effect when the user does not pay the invoice according to that agreement in a timely manner and the delay in payment is longer than 30 days from maturity date. Breaking the service agreement caused by the user also invalidates the warranty.

NOTE:
Please ask your dealer to complete and return the warranty card, otherwise you may lose your warranty rights.

The warranty card is valid only when it contains the following information: address, date and place of purchase, mower type and invoice number.

12.2. Warranty repairs record

Repairs description and changed spare parts:

Date, stamp and signature of repair shop.

Date, stamp and signature of repair shop.

Date, stamp and signature of repair shop.