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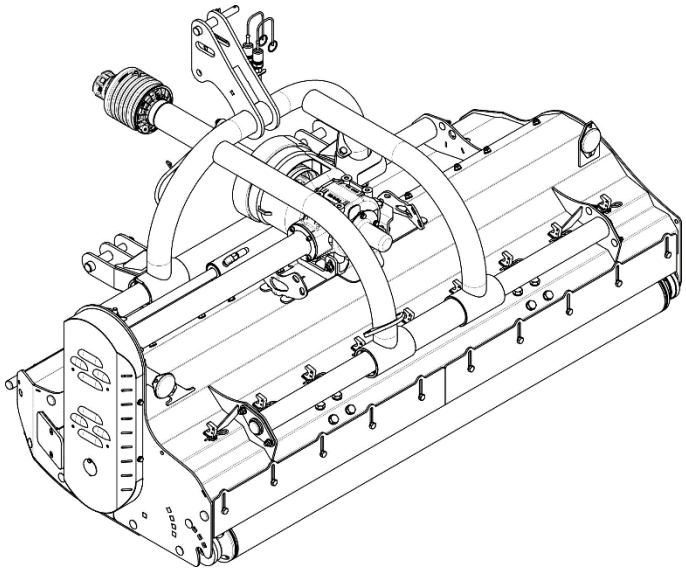
OPERATOR'S MANUAL



REAR – FRONT AND REAR FLAIL MOWERS

Light duty class	Medium duty class	Heavy duty class
MIDO 140 – 4' 7'' / 1,40 m	**GRINO 160 – 5'3'' / 1,60 m**	**MAMUT 250 – 8'2'' / 2,50 m**
MIDO 160 – 5'3'' / 1,60 m	**GRINO 180 – 5'11'' / 1,80 m**	**MAMUT 280 – 9'2'' / 2,80 m**
MIDO 180 – 5'11'' / 1,80 m	**GRINO 200 – 6'7'' / 2,00 m**	**MAMUT 300 – 9'10'' / 3,00 m**
MIDO 200 – 6'7'' / 2,00 m	**GRINO 220 – 7'2'' / 2,20 m**	**RIO 250 – 8'2'' / 2,50 m**
MIDO 220 – 7'2'' / 2,20 m	**VINO 180 – 5'11'' / 1,80 m**	**RIO 280 – 9'2'' / 2,80 m**

Serial no:

IN341USA010
2018.07.31
Edition 10

Translation of the original manual

IT IS FORBIDDEN
FOR PEOPLE NOT INVOLVED IN OPERATION OF THE MOWER TO REMAIN WITHIN 170' / 50 M FROM THE MOWER

DO NOT
START THE MOWER UNLESS IT IS IN THE CORRECT WORKING POSITION

NOTE:
Keep this manual for future use.

Well-proven design with thousands of machines in regular use in many countries and quality materials used ensure high durability and reliability of SaMASZ mowers.

We congratulate you on the purchase of your new SaMASZ mower and wish you much pleasure and the very best work results through the years to come.

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1. IDENTIFYING THE MACHINE

Data plate is attached on the mower's main frame as shown below in **Fig. 1**.

Fig. 1. Data plate location

Data plate includes:

- full name of the manufacturer,
- id number,
- mower symbol,
- date of manufacture,
- version number,
- machine's weight,
- quality management sign,
- CE marking means, that the machine is conform with Directive 2006/42/EC and harmonized standards,
- country of manufacture,
- bar code.

NOTE:

Should the contents of the herein manual be unclear, ask the manufacturer or your dealer for more detailed information on the machine.

2. INTRODUCTION

- This operator's manual should be considered the mower's basic equipment and should be kept for further reference. If the mower is handed over to another user, it should be serviceable, and include this operator's manual, CE declaration of conformity and its required basic equipment.
- Before operating the mower its user must familiarize himself with this manual as well as current work safety rules.
- The mower is manufactured according to international safety rules.
- Respecting recommendations herein shall ensure use safety.
- Should you have any questions relating to the operation and service of the mower, please contact the manufacturer

GENERAL PRECAUTION

When operating the machine always respect warnings and safety rules marked with this sign.

NOTE:

Operating the mower without reading the contents of the manual, and by unauthorized personnel, children in particular, is strictly forbidden.

3. INTENDED USE

Light duty class flail mowers MIDO are designed for mulching squares, pitches, lawns, central reservations, roadsides and parks.

Middle duty class flail mowers GRINO 160/180/200/220, VINO 180 heavy duty class MAMUT 250/280/300 and RIO 250/280 are designed for mulching soil fertilisation aiding plants (lupinus, phacelia, sinapis, rapeseed, field pea, rye) before tillage, as well as plant remnants like thick stalks of e.g. corn. Machines are used for shredding of thin branches, moderately thick small scrubs and weeds.

WARNING!
Do not use the mower for purposes other than those listed in this manual. Otherwise it will be classified as misuse and could release the manufacturer from responsibility for any damages. The mower should be used, serviced and repaired only by personnel familiar with its characteristics and with safety regulations. Tampering with the mower may release the manufacturer from responsibility for any resulting malfunctions or damages.

3.1. Technical data

Tab. 1. General specification MIDO / VINO

Mower type:		**MIDO 140**	**MIDO 160**	**MIDO 180**	**MIDO 200**	**MIDO 220**	**VINO 180**
Mowing width [ft in / m]		4′ 7″ / 1.40	5′ 3″ / 1.60	5′ 11″ / 1.80	6′ 7″ / 2.00	7′ 3″ / 2.20	5′ 11″ / 1.80
Number of blades (flails) [pcs.]		18	20	22	24	26	20
Tractor PTO speed [rpm]		540 / 1000					
Tractor power [HP]		from 45	from 50	from 60	from 70	from 80	from 60
Transport length [ft in / mm]		3′ 7″ / 1080					
Transport width [ft in / mm]		5′ 6″ / 1680	6′ 2″ / 1880	6′ 10″ / 2080	7′ 4″ / 2230	8′ 2″ / 2480	6′ 6″ / 1985
Height [ft in / mm]		940					
Weight [lbs / kg]		816 / 370	915/ 415	959 / 435	992 / 450	1058 / 480	1036 / 470
3-point linkage category		I / II					
Emitted noise level	LpA	73.5 ± 3.0 dB					
	LAmax	85.0 ± 3.0 dB					
	LCpeak	87.0 ± 3.0 dB					

Tab. 2. General specification GRINO

Mower type:		**GRINO 160**	**GRINO 180**	**GRINO 200**	**GRINO 220**
Mowing width [ft in / m]		5′ 3″ / 1.60	5′ 11″ / 1.80	6′ 7″ / 2.00	7′ 3″ / 2.20
Number of blades (flails) [pcs.]		20	24	30	36
Tractor PTO speed [rpm]		540 / 1000			
Tractor power [HP]		from 50	from 60	from 70	from 80
Transport length [ft in / mm]		3′ 9″ / 1150			
Transport width [ft in / mm]		6′ 1″ / 1850	6′ 9″ / 2050	7′ 5″ / 2250	8′ / 2450
Height [ft in / mm]		3′ 3″ / 1000	3′ 5″ / 1040	3′ 5″ / 1040	3′ 5″ / 1040
Weight [lbs / kg]		1213 / 550	1345 / 610	1411 / 640	1466 / 665
3-point linkage category		I/II			
Emitted noise level	LpA	73.5 ± 3.0 dB			
	LAmax	85.0 ± 3.0 dB			
	LCpeak	87,0 ± 3,0 dB			

Tab. 3. General specification MAMUT, RIO

Mower type:	**MAMUT 250**	**MAMUT 280**	**MAMUT 300**	**RIO 250**	**RIO 280**
Mowing width [ft in / m]	8′ 2″ / 2.50	9′ 2″ / 2.80	9′ 10″ / 3.00	8′ 2″ / 2.50	9′ 2″ / 2.80
Number of blades (flails) [pcs.]	30	36	36	30	36
Tractor PTO speed [rpm]	1000				
Tractor power [HP]	from 100	from 120	from 130	from 100	from 120
Transport length [ft in / mm]	4′ 1″ / 1235			3′ 12″ / 1210	
Transport width [ft in / mm]	9′ 2″ / 2800	9′ 10″ / 3000	10′ 6″ / 3200	9′ 2″ / 2800	9′ 10″ / 3000
Height [ft in / mm]	3′ 5″ / 1055			3′ 4″ 1035	
Weight [lbs / kg]	3′ 2″ / 975	3′ 5″ / 1040	3′ 6″ / 1060	3′ 3″ / 980	3′ 5″ / 1050
3-point linkage category	II				
Emitted noise level LpA	73.5 ± 3.0 dB				
LAmax	85.0 ± 3.0 dB				
LCpeak	87.0 ± 3.0 dB				

LpA – noise level related to 8 hour working time. Averaged in time acoustic pressure level corrected by frequency characteristic A.

LAmax – maximum value corrected by frequency characteristic A of acoustic pressure level.

LCpeak – peak level of acoustic pressure corrected by frequency characteristic C.

3.2. Design and working principle

The front-rear flail mower (**Fig. 2**) is constructed of the suspension frame (**1**), which is used to connect the mower to the three point hitch, at the front and at the rear of the tractor (RIO – at the rear of the tractor).

Drive from the vehicle PTO shaft is transmitted through jointed telescopic shaft (**2**) and intersection angle gear (**6**) onto driving shaft (**3**), and then the belt gear (**5**) is driven by the flail shaft (**12**), on which flail knives (**13**) are mounted.

Clevis feet of the flail blades (cutting) functions as a safeguard of the operating elements from overloading and damage. During operation if the value of resistance force of the obstacle exceeds the value of the centrifugal force of the blade, the blades tilts back and avoids the obstacle.

The mowing height is regulated by adjusting the position of the copying shaft (**11**).

Steel skids (**14**) protect the machine when passing through an obstacle.

In VINO flail mower, cleaning plate (**9**) helps remove winding grass and dirt on the copying shaft (**11**). Counter knives (**10**) keep the comminuted material for re-mulching. Please adjust the position of counter knives according to mowing height – do not set below the ground level.

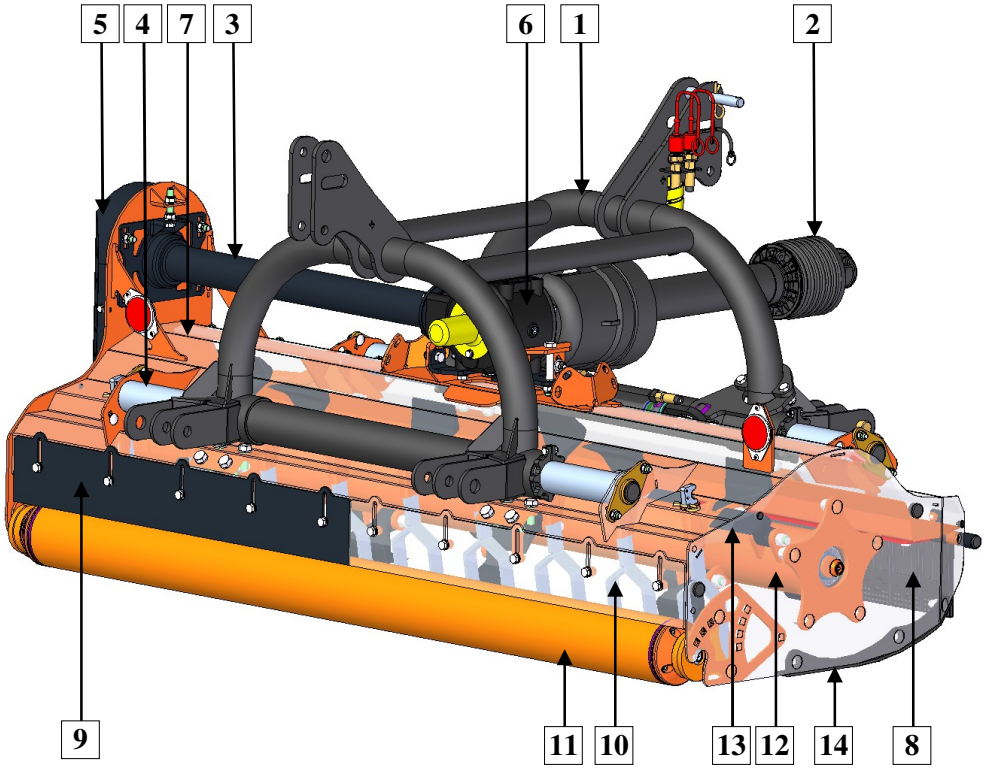


Fig. 2. Overview of the mower

1 – Suspension frame
2 – PTO shaft
3 – Driving shaft
4 – Runner
5 – Belt gear
6 – Angle gear
7 – Guards
8 – Plate
9 – Cleaning plate (re: VINO)
10 – Counter knife (re: VINO)
11 – Copying shaft
12 – Flail shaft
13 – Flail blade
14 – Steel skid

3.3. Equipment and spare parts

The mowers are sold with the following standard equipment:

- warranty card,
- instruction manual along with a catalogue of spare parts and Declaration of Conformity,
- additional set of flail blades,
- telescoping articulated shaft,
- spray paint (150 ml).

Optional extra equipment:

- additional set of flail blades,
- additional set of bearings for the coping and working shafts,
- additional set of seals for the bearings of the coping and working shafts,
- protective chains.
- hitch with hydraulic movement – one-sided or double-sided – re: MIDO, VINO,
- additional row of counter cutters – re: MIDO, MAMUT,
- LED warning plate.

NOTE:
Optional extra equipment should be ordered separately.

Tab. 4. Recommended telescoping articulating shaft. Manufactured by Bondioli & Pavesi

Mower		Power	Length	Torque	Symbol	Shaft ends	
		HP	ft in / mm	Nm		Tractor	Mower
MIDO	140/160/180/ 200/220	64	2′ 2″-2′ 10″ 660-885	830	7G7N066CE007007AX	1 3/8” z=6 collar cover	1 3/8” z=6 full cover
GRINO	160	35	2′ 10″-3′ 11″ 860-1200	460	7G4N086CE007007HA		
	180/200/220	64	2′ 10″-3′ 11″ 860-1185	830	7G7N086CE007007TA		
VINO	180	64	2′ 2″-2′ 10″ 660-885	830	7G7N066CE0071R0X		
MAMUT	250/280/300	83	3′ 4″-4′ 7″ 1010-1408	1080	7G8N101CE007007TA		
RIO	250/280						

PTO shafts of other brands with equivalent technical parameters may be used on the SaMASZ permission.

IMPORTANT:
Make sure to follow the PTO shaft lubrication frequency. Lubrication points marked in **Fig. 3**, **Fig. 4** and **Fig. 5** should be lubricated every 50 hours. Always lubricate the PTO shaft before and after a period of longer idleness.

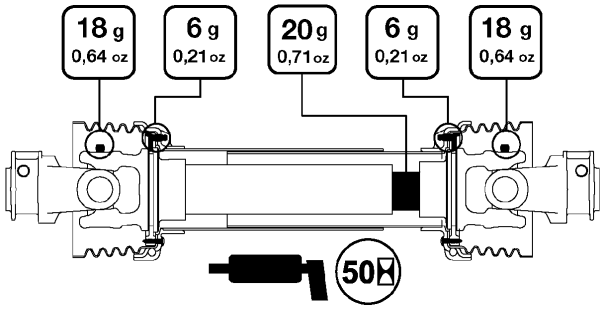


Fig. 3. PTO shaft lubrication points: 7G7N066CE007007AX, 7G7N086CE007007TA, 7G7N066CE0071R0X

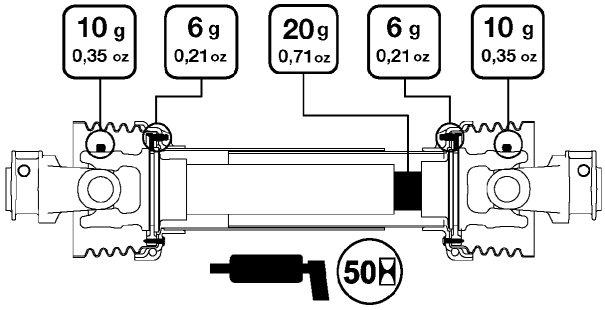


Fig. 4. PTO shaft lubrication points: 7G4N086CE007007HA

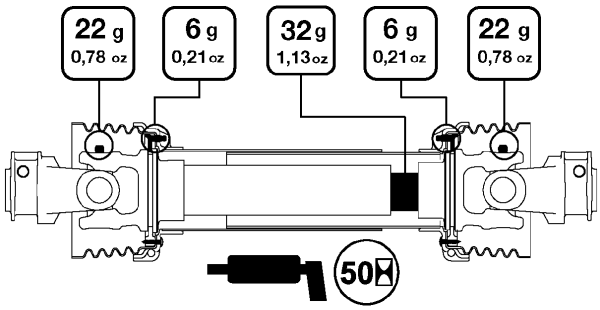


Fig. 5. PTO shaft lubrication points: 7G8N101CE007007TA

3.3.1. Flail knives applicable in mowers MIDO, GRINO, VINO, MAMUT, RIO

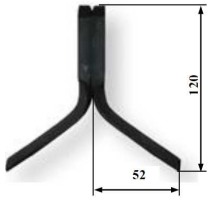
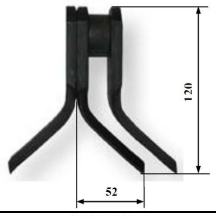
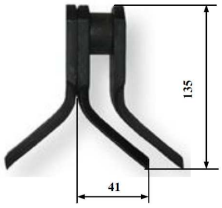
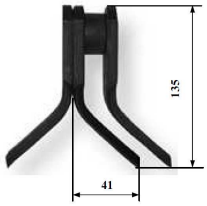
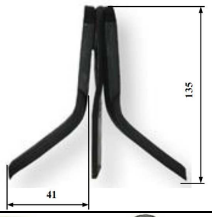
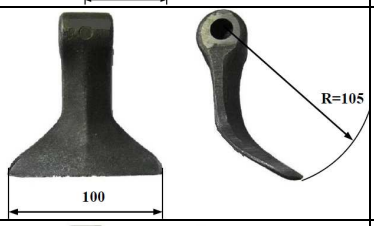
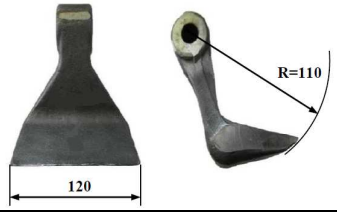
In flail mowers can be used different types of flail knives (**Tab. 5**) depending on the purpose and working conditions.

If found, replace any damaged or worn knives. In case of replacing cutting knives, they should have the same weight. Admissible difference in weight should not be more than 3 g. If a single knife requires to be replaced, the opposite one should also be replaced in order to prevent improper balance.

WARNING!

Before operating make sure that mounting direction of knives is correct (see **Fig. 20**).

Tab. 5. Types of flail knives

Types of flail knives	MIDO	GRINO	VINO	MAMUT	RIO
KNIFE TYPE II Application: grass, shoots, spikes, stalks, shrubs, remnants after trimming, hay 	**Option**	–	**Option**	–	
KNIFE TYPE III Application: grass, shoots, spikes, stalks, shrubs, remnants after trimming, hay 	–		**Option**	–	
KNIFE TYPE IIIA Application: grass, shoots, spikes, stalks, shrubs, remnants after trimming, hay 	–			**Option**	
KNIFE TYPE IV Application: grass, shoots, spikes, stalks, shrubs, remnants after trimming, hay 	**Option**	–	**Option**	–	
KNIFE TYPE IVA Application: grass, shoots, spikes, stalks, shrubs, remnants after trimming, hay 	–			**Option**	
KNIFE TYPE V Application: grass, stubbles, branches, bushes, shrubs 	**Standard**	**Option**	**Standard**	–	
KNIFE TYPE VI Application: grass, shrubs, stalks, remnants after trimming, stubbles 	–	**Standard**	–	**Standard**	

4. SAFETY PRECAUTIONS

4.1. Safety rules and regulations

- Front or rear axis of the tractor should be balanced to enable its steering. If necessary, use front or rear wheel weights.
- In order to keep steering conditions, make sure that impact on the front axis is at least 20% of the complete impact on the tractor.
- Any operation with the hydraulic lift lever should be done from the operator's seat; never operate the lever from outside of the tractor.
- For tractors equipped with EHR, control with hydraulic lift is done with a button located outside the tractor's cabin. When operating, please exercise particular caution.
- When mounting the mower on a tractor, risk of wounding is likely. It is recommended that operator wears protective gloves.
- Do not operate without safety guards. Neither operation with damaged nor raised guard is allowed (risk of stones, etc. being thrown out). Damaged safety curtain should be replaced.
- Please make sure that no unauthorized personnel remains within the danger area of at least 164 ft (50m). Keep particular caution when operating near roads and in stony areas.
- Perform any maintenance and adjustment work only when the drive is disconnected and rotor has stopped completely.
- When driving on public roads always comply with local traffic regulations, especially on the warning lights.

CAUTION!
Make sure to perform any service and repair operations with the tractor drive shut off and after all rotating parts have stopped completely.

WARNING:
Keep children away from the mower when operating and idle.

- Check bolts and other fasteners regularly. Do not operate with damaged or worn fasteners.
- Do not leave a running tractor without supervision. Before leaving the tractor turn off the engine and remove the ignition key
- If any break in the machine operation occurs, turn off the drive
- Tractor cooperating with the mower should be equipped with a driver's cabin
- Mower should not be operated when the tractor-mower aggregate is not well balanced
- Never start the mower if any people or animals are around the mower
- Always follow safety labels describing hazards, and warning signs placed on the machine
- Before starting the tractor make sure that each drive is disconnected and control levers for hydraulics are in neutral position
- Do not drive the mower backwards when operating
- Never get onto the mower
- Never stand between the tractor and the mower, unless the tractor-mower aggregate is protected against moving with the tractor's parking brake
- Any inspections and adjustments may be conducted only when the mower is disconnected from the tractor and on the ground
- For repairs or adjustments to be done under the mower make sure to secure it against falling using a proper support
- If any part of the mower needs to be replaced, use only original spare parts according to spare part list
- Pay particular attention to PTO shaft guards and mower and tractor spline shaft guards. Never operate with damaged guards
- Inspect hydraulic hoses on regular basis and if any damage is found or their service life expires, replace them. Service life for a hydraulic hose should be no longer than 5 years.

- Never repair damaged hydraulic hoses using a tape.
- When connecting hydraulic hoses to tractor's hydraulic connectors make sure, that either tractor or mower hydraulics are pressure free.
- When servicing hydraulic unit, always wear protective gloves and eyewear. Hydraulic oil leaking under pressure (16MPa) may permeate through the skin and cause its infection thereafter. If this is the case, immediately visit a doctor.
- The mower should be stored under a roof and in such way so as to effectively prevent animals and people from being injured
- Before starting the mower, make sure there are no animals underneath the guard
- Before operating the mower, make sure all safety devices are in place and working. If not working or damaged have them replaced
- Before any maintenance, assembly, disassembly works and when parking position the machine on a solid ground and secure it against accidental movements.
- When cleaning the machine, use personal protective equipment for health protection.
- Do not leave agricultural machinery on slopes or other descents without providing protection against free runaway.
- When operating on a stony field or nearby roads there is a risk of throwing out stones or other objects which may pose a danger for passing-by vehicles on the road or for passers-by. Therefore keep the safe distance.
- If any break in the equipment operation occurs, turn off the drive. Before leaving the tractor turn off the engine and remove the ignition key, leave the cabin and make sure there are no unauthorized personnel in the cabin and close the door.
- The operator is not allowed to leave the tractor while driving.
- In case of a major failure, stop the machine's drive, turn off the tractor's engine and remove the ignition key. Next, please contact technical service, and if accident (i.e.: road accident) occurs, respect first aid rules and call appropriate authorities.
- Keep the mower clean, so as to avoid a risk of fire.
- Pay particular attention to both PTO shaft and spline shaft guards. Never operate with damaged guards.
- Rotating spring tines and other rotary elements present a danger to health and life of persons present nearby the machine. Do not touch any moving machine parts
- Check pressure in the machine wheels regularly.
- In the event of any break in the equipment operation, turn off the drive.

In the event of a fatal failure, please call for technical service, and if an accident (in this case: road accident) occurs, respect first aid rules and contact responsible services.

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 vehicle and the machine, and be able to recognize and avoid hazards resulting from operation of the aggregate.

4.3. Conditions of connecting mower with vehicle

- Before mounting operation, check whether the vehicle's and the mower's hitch categories are compatible and make sure that vehicle's hitch load is adequate for the machine aggregated.
- When mounting the machine, examine technical condition of the mower's hitch assembly.
- Use only original pins and cotters to mount the mower on a vehicle.

4.4. Transport

- Any modifications in the position of the mower are possible only if no unauthorized personnel is around (children in particular).
- For transport make sure that the mower has portable light board and the triangular safety sign identifying a slow moving vehicle mounted; see 5.3.
- When transporting the mower make sure it is always placed in the transport position
- Before moving the mower to transport position make sure, that the tractor's PTO is turned off and all rotating parts have come to a complete stop.
- Always adjust driving speed to current road conditions and local traffic code.
- When driving on public roads the machine's width should not exceed 3.0 m (9'10") (re: MAMUT 300).
- Do not exceed permissible speed of 19mph (30km/h).
- Do not transport any people or objects on the machine.
- When taking turns pay particular attention and keep in mind the machine's weight and dimensions.
- Bear in mind that when operating and transporting the machine in areas where high voltage lines are present, exercise special caution as it is likely for the aggregate to touch the lines.
- It is forbidden for the operator to leave the vehicles when driving.
- Reckless driving and speeding may cause a traffic accident or collision.

4.4.1. Putting the machine onto another vehicle for transport

The carrier and the driver are responsible for safety during the transport of a mower. All equipment and parts must be secured during transport.

The following rules should be observed so that transporting the mower on a transport vehicle is safe:

- The mower can be lifted only in places designated for this purpose and labeled with a hook sign (**Fig. 6**),

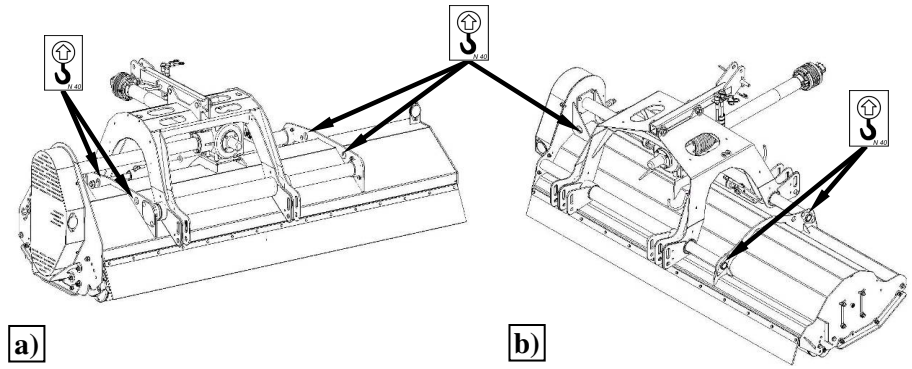


Fig. 6. Transport holders

- For hoisting please use hoists with capacity bigger than the machine weight as indicated on its data plate. It also applies to the necessary cables and chains,
- Transport belts, belt suspensions, ropes cannot be damaged. Whenever damages to these parts are found, replace them,
- When mounting slings, chains, clamps, etc. always keep in mind the center of gravity of the machine,

- For seizing the machines pick lines of adequate length, so that the angle between them was no greater than 120°, and the angle of inclination between the cable and the vertical was no greater than 60°,
- Collapsible parts should be blocked in transport position,
- When relocating the mower onto another vehicle, there should be no unauthorized personnel permitted to remain within the danger area,
- The mower should be protected against moving on the vehicle's trailer.

WARNING!
Securing the maneuver area and providing safety for operation performed is the responsibility of the person in charge of moving of the machine.

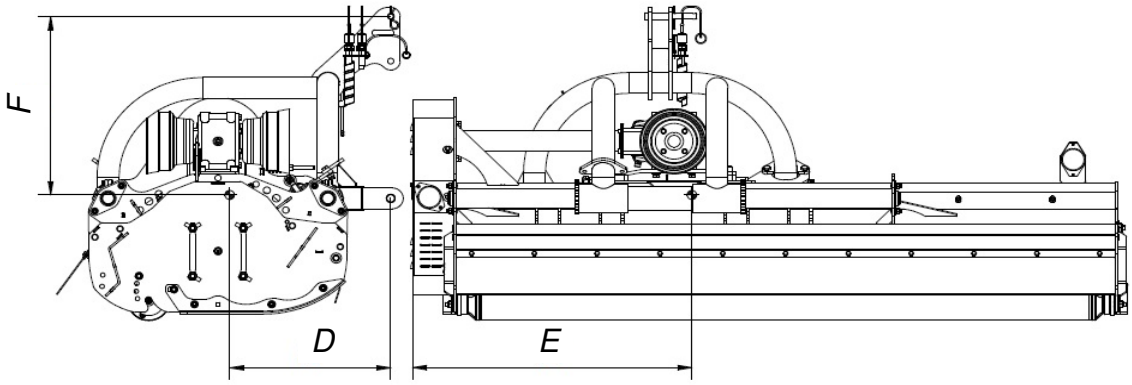


Fig. 7. Location of center of gravity

Tab. 6. Location of center of gravity

Model:	Dimension [mm]		
	D	**E**	**F**
MIDO 140	366	741	585
MIDO 160	376	847	718
MIDO 180	377	917	725
MIDO 200	371	866	635
MIDO 220	385	1004	681
GRINO 160	429	792	576
GRINO 180	455	1082	700
GRINO 200	455	1182	700
GRINO 220	455	1278	700
VINO 180	548	1027	660
MAMUT 250	500	1234	733
MAMUT 280	500	1541	773
MAMUT 300	500	1540	740
RIO 250	488	1295	731
RIO 280	484	1418	661

4.5. Working parts

- Before operating the mower check the condition of the flail blades.
- Replace any worn or damaged flail blades immediately.
- In case of excessive machine vibrations during operation, make sure the flail shaft is well balanced.

WARNING!
When replacing working parts, always use protective gloves.

4.6. Telescoping articulated shaft

- Use only articulated telescopic shafts recommended by the manufacturer of the mower.
- Before operating learn provisions found in bar manufacturer's manual placed on the bar.
- In order to operate safely use only fully technically fit, undamaged PTO shafts. Damaged PTO shaft shall be repaired or replaced with new one.
- Before any operation make sure whether PTO rpm have proper rotational direction.
- In order to prevent PTO shaft from damages, avoid extreme most positions of the mower and high operating angles.

4.7. Residual risk

Despite the fact, that SaMASZ Sp. z o.o. company − the manufacturer of the mower takes the responsibility for the mower design and manufacturing, in order to eliminate hazard, certain risk when operating the mower is unavoidable.

Major source of risk results from the following operations:

- operation of mower by minors and operators not being familiarized with operator's manual,
- operation of mower by personnel under influence of alcohol or other abusive substances,
- failure to keep caution while transporting and moving the mower during operation,
- transport of personnel on the mower,
- presence of personnel and animals within the mower operating range,
- service and adjustment operations with engine running.

1) Risk of being caught or pulled in

This risk occurs when repositioning of the mower, or working on the mower while the rotating elements are in motion and with guards removed.

During operation, maintenance or adjustment works on the mower always use protective gloves, covered footwear, protective clothing without loose elements, such as belts etc. Always observe the warnings placed on the mower.

When operating, maintenance and regulation works are conducted always wear protective gloves, footwear and clothing with no loose parts, belts, etc. Always comply with warnings placed on the mower.

2) Risk of injury, abrasion and damage of skin

This risk occurs when replacing working parts with sharp edges, cleaning the machine and removal of any clogging and jams. For any repair and maintenance works always wear safety gloves.

3) Risk of spurting hydraulic oil

During hydraulic hose connection and disconnection to and from the tractor make certain that the hydraulic system of the tractor and the mower are not pressurized.

When dealing with a hydraulic system wear safety glasses and protective gloves. Regularly check the hoses of the hydraulic system.

NOTE:
Present residual risk results mainly from erroneous actions of the mower's operator and failure to follow the instruction manual.

4) Prohibited actions

Bear in mind the following prohibited actions when operating the mower:

- Do not unblock the mower, make any adjustments or repairs when the mower is operating,
- Never change the sequence of operation and maintenance works specified in the operator's manual,
- Never operate the mower when its working condition is poor or its safety guards are damaged,
- Never get your limbs close to mower's rotating parts,
- During repair and maintenance works on the mower always comply with the descriptions included in the operator's manual, while making sure the tractor's drive is turned off,
- Before any works, focus your attention solely on the tasks to do,
- Never operate the mower being under influence of alcohol, drugs, or strong medicines,
- Wear clothing that is not too loose, or too tight. Too loose clothing elements may be pulled in by the mower's rotating parts,
- Make sure the mower is not operated by children no handicapped people.

When describing residual risk, the mower shall be considered a machine, which until the moment of production launching had been designed and manufactured in accordance with the state of the art at the day of the manufacture.

WARNING!
Despite following the specified instructions and prohibitions, residual risk is still present.

4.7.1. Residual risk assessment

Keep the following recommendations:

- read operator's manual thoroughly,
- make sure no person remains on the mower when operating and driving,
- make sure no person remains within the mower's operating range,
- before any adjustment, maintenance and lubrication works on the mower, make sure its engine is turned off,
- repair works on the mower can be done by properly qualified and skilled personnel only,
- before operating the mower, carefully read the operator's manual,
- make sure that no children and unauthorized personnel stays around the mower

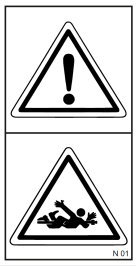
In the event when avoiding or eliminating professional risk resulting from exposure to noise is not possible through use of mass safety device or work organization, the employer (farmer):

1) makes available personal hearing safety devices if the levels of noise in working environment exceed 80 dB.
2) makes available personal hearing safety devices and ensures they are properly used if the levels of noise in the working environment reach or exceed 85 dB.

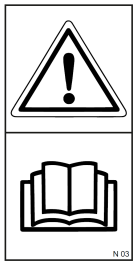
4.8. Safety labels and their meanings

IMPORTANT:

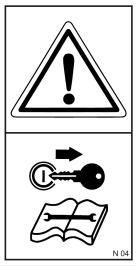
- All warning labels should be clean and legible,
- Lost or damaged labels must be replaced,
- New labels can be ordered at the Manufacturer.



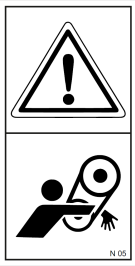
N-01
Exercise particular caution when PTO shaft is rotating



N-03
Read the operator's manual before use



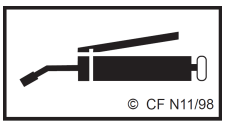
N-04
Before any service or repair disconnect the power supply



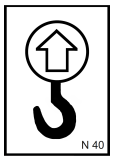
N-05
Caution: belt gear, be extremely careful

N-07
Do not operate the if any personnel remains within 170 ft (50m) from the machine

N-09
Caution: rotor



N-11
Lubrication point



N-40
Transport holder for machine handling

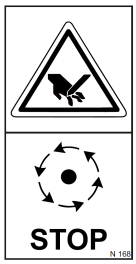
N-52
Wear protective gloves

N-55

N-106
Warning: flail knives! Do not approach the operating mower

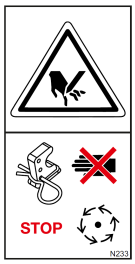
N-117
Avoid contact with liquid coming out under pressure

N-167
Do not remain on the machine while driving

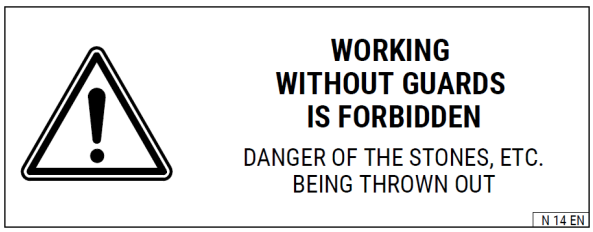


N-168
Do not touch the machine before the rotating parts have not come to a complete stop

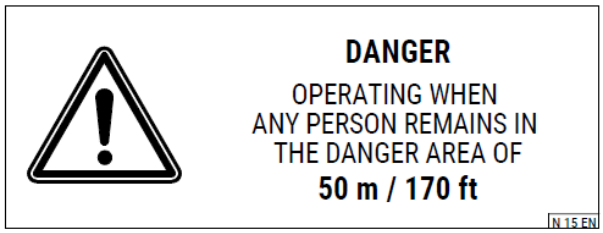
N-210
Risk of foot injury, keep a safe distance



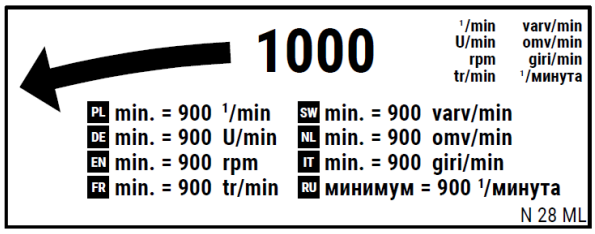
N-233
It is forbidden to adjust the position of counter knives before the all moving parts comes into complete standstill
(re: VINO 180)



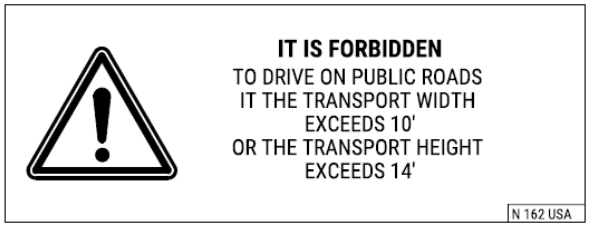
N-14



N-15



N-28
(N-29–540 rpm)



N-162

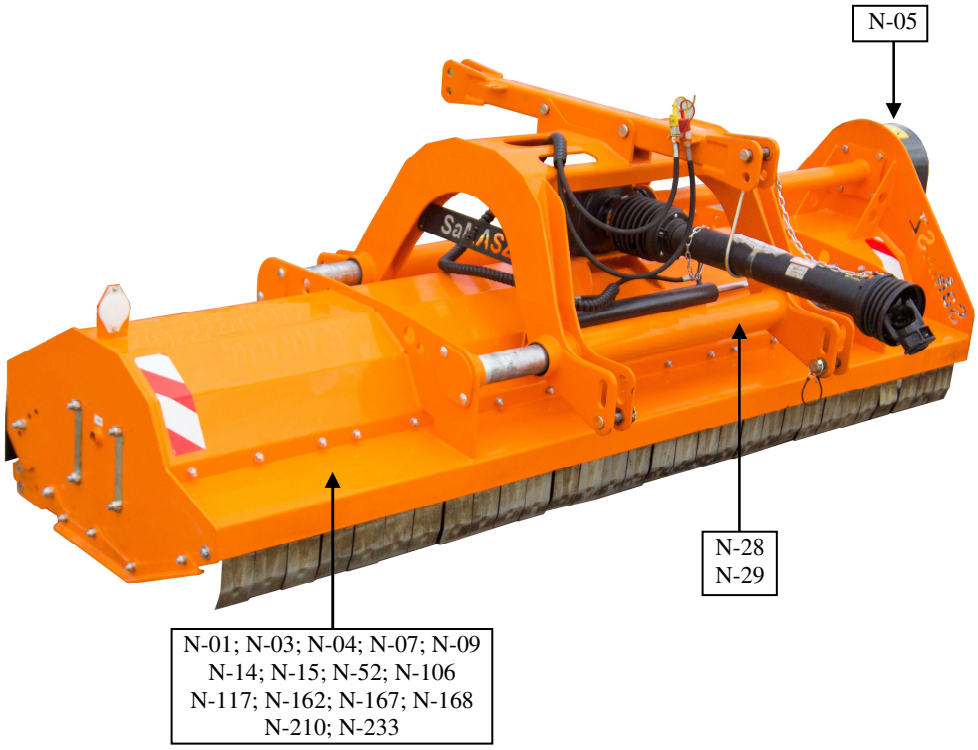


Fig. 8. Location of warning labels

NOTE:
Any spare part used for repair of the mower should have all safety labels provided by the manufacturer.

5. USE OF MOWER

5.1. Mounting mower on tractor

The mower should be connected to the tractor using the three point hitch as illustrated in **Fig. 9**. The upper connector (**1**) and the hangers (**3**) of the lower ties of the tractor should be placed on the bolts (**2**) of the suspension frame of the mower

Machine should be adjusted in such a way that the sliding skid is perpendicular to the ground. After connecting the mower it should be adjusted on level ground using the upper connector (**1**) and the hangers (**3**) of the lower ties of the tractor (**Fig. 9**).

After connecting the mower to the tractor check the lengthwise balance and steering ability of the tractor-mower unit. To do this, calculate to formulas given in the chapter 8 or weigh the set, and then drive on the scales only with front/rear axis of the tractor (the mower must be in the transport position, lifted up). If the weight of the front/rear axle of the tractor is at least 20% of the entire weight of the unit then steering ability has been preserved. If this is not the case the front axle should be additionally weighed down. The same procedure should be followed when connecting the mower to the front/rear of the tractor.

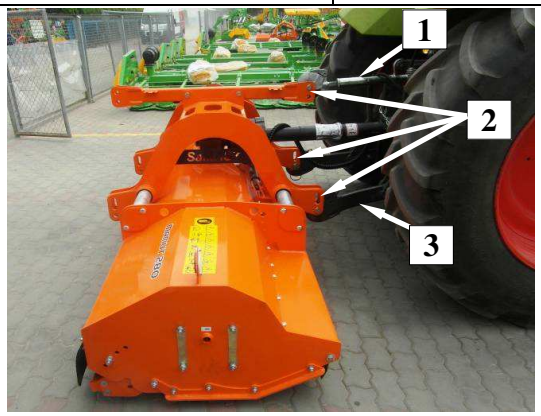


Fig. 9. The mower mounted on the tractor

5.1.1. Preparing mower for connection to front of tractor

To prepare **VINO** or **MIDO flail mower with rigid hitch** (**Fig. 10a**) for operation on the front of the tractor, dismount the hitch (**4**) by unscrewing bolts (**6**). Turn the hitch around and next remount it and twist bolts. After the above mounting steps are done, swap plastic guards and PTO shaft on the main gear.

To prepare **MIDO**, **GRINO** or **MAMUT flail mower with mowing hitch** (**Fig. 10b**, **Fig. 11**) for operation on the front of the tractor, dismount the hitch (**4**) by removing pins (**5**) and unscrewing bolts (**6**). Turn the hitch around and next remount it, twist bolts and mount pins. After the above mounting steps are done, swap plastic guards and PTO shaft on the main gear.

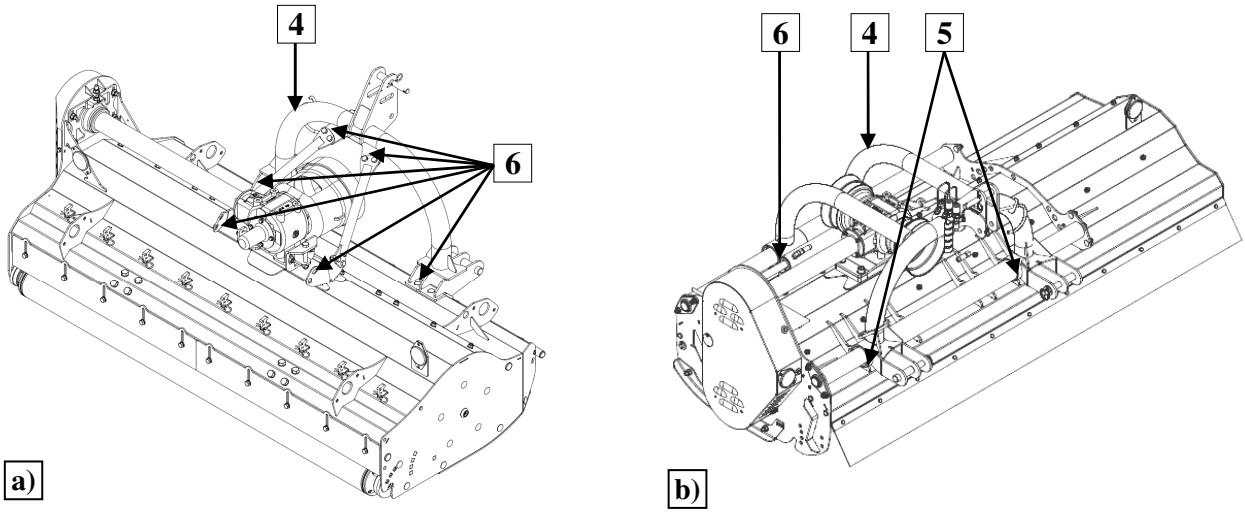


Fig. 10. The hitch of the **MIDO**, **VINO** flail mowers a) rigrid hitch, b) moving hitch

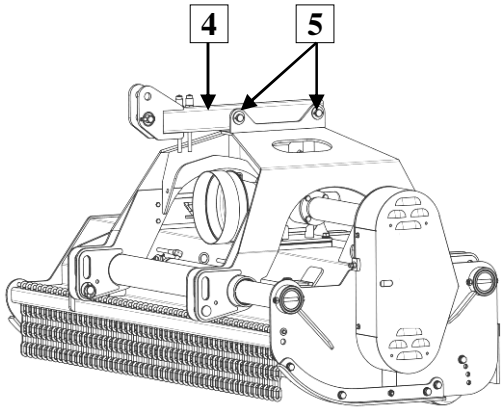


Fig. 11. The moving hitch in the **GRINO** and **MAMUT** flail mowers

For **MIDO, VINO** or **GRINO** flail mowers mounted on the rear of the tractor, they operate at 540 rpm. When operating with mower mounted on the front 3-point linkage adjust the machine to PTO speed of 1000 rpm.

Follow the procedure:

- in **MIDO 140** flail mower, switch belt pulleys around – at the top SPB 170-3 belt pulley, at the bottom SPB 236-3 belt pulley,
- in **MIDO 160/180/200/220** flail mowers, switch belt pulleys around – at the top SPB 170-4 belt pulley, at the bottom SPB 236-4 belt pulley,
- in **VINO 180** flail mower, switch toothed wheels around – at the top TB-48-8M-50 toothed wheel, at the bottom TB-64-8M-50 toothed wheel,
- in **GRINO** flail mower, switch belt pulleys around – at the top SPB 180-4 belt pulley, at the bottom SPB 212-4 belt pulley – exchange wedge belts to XPB 1450 (see parts catalogue),

In case of improper PTO shaft's rotational direction turn the gear by 180°, change place of tightening of drain vent and vent so that it is in the upper section of the gear.

5.2. Connecting the PTO shaft

During PTO assembly, pay attention to the pictogram placed on the shaft. It is indicating the correct assembly direction.

Prior to commencing operation, examine and adjust length of PTO shaft, which is designed to mount machine on tractor. The cover should be secured so that it does not spin by securing the holding chains to a permanent part of the body of the tractor and the loop on the guard of the splined shaft of the mower drive shaft.

NOTE:

If necessary, shorten the PTO haft according to its operator's manual given by the shaft's manufacturer (**Fig. 12**).

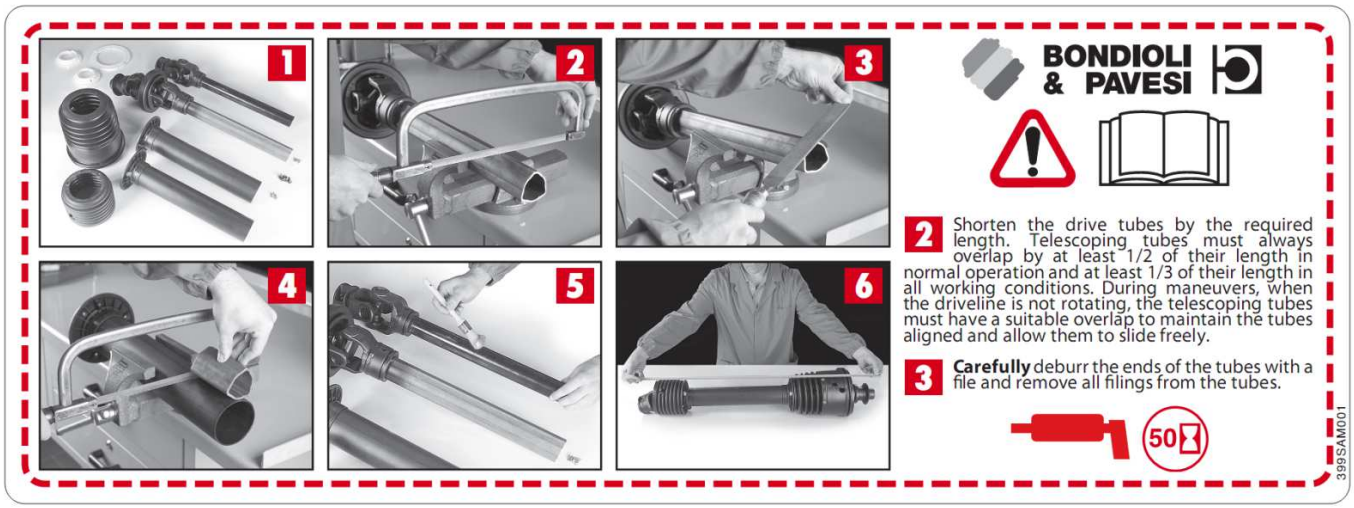


Fig. 12. Instruction of PTO shaft shortening

CAUTION!
The articulated telescopic shaft should remain connected only during mower operation. During transport or any servicing operations the shaft should be disconnected from the PTO of the tractor.

CAUTION!
Use machines with correspondingly designed driving PTO shafts. Before work, safety guards should be inspected whether they (in the tractor, the mower and the PTO shaft) are placed correctly and are not damaged. Damaged or missing parts must be replaced. Make sure that the PTO shaft is mounted properly. Approaching the rotating parts is strictly forbidden, as it may cause serious injuries or even death. For any service and repair works on the shaft and the mower, makes sure that the tractor's engine and its drive is turned off. Before operation, read the operator's manuals of both the machine and the PTO shaft.

NOTE:
PTO shaft's end with friction clutch should be mounted at the mower's side.

5.3. Preparing mower for transport

Preparation of the front-rear flail mower mounted on the tractor for transport - movement on public roads - requires the following:

- during transporting the machine it is recommended to attach the machine to the upper link round hole;
- lift the mower using the front or rear three-point hitch;
- adjust the side setting to the minimum – procedure of changing the side setting of the mower was described in point 5.5;
- road traffic safety and current laws require that during transport over public roads the mower must be equipped with a portable reflective triangle mounted on the back of the mower;
- while manoeuvring pay special attention to the space around the tractor-mower unit.

WARNING!
Moving the mower from operating position to transport position and the way around, should only take place on even and stable ground. Prior to making the moves make sure whether there are no unauthorized persons exposed to any hazard.

5.4. Preparing mower for operation

Before starting operation the following procedures must be followed. After fulfilling these procedures the mower is ready for operation.

The following should then be done:

- gently lower the cutting unit until the copying shaft touches the ground,
- turn on the power take-off until the flail shaft reaches nominal speed,
- put the tractor in gear and begin work.

5.5. Switching the mower from central to side position

With mowers with hydraulic adjustment the lateral positioning of the mower is done using the hydraulic system. In order to change the position of the mower the appropriate lever in the hydraulic system of the tractor is depressed and released when the desired position of the mower is obtained.

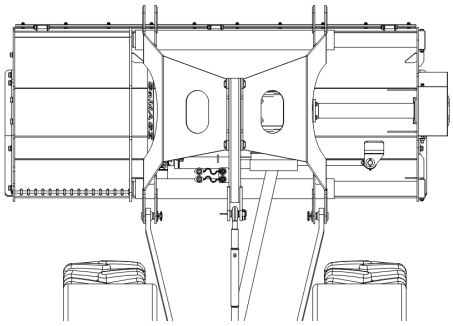


Fig. 13. Central position setting (recommended during transport)

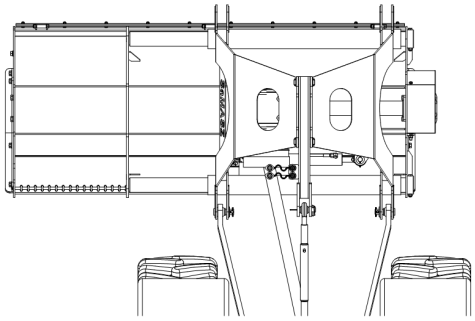


Fig. 14. Side position setting

The adjustment of the lateral position of the mower should only be done after it has been lifted up on the three-point hitch and complete stopping of the PTO and working flail shaft of the mower. The side setting of the mower was illustrated in **Fig. 14**. During transport the mower should be in the central position, shown in **Fig. 13**.

5.6. Operation

5.6.1. General information on mowing

- In an urban setting, to ensure that the mower works without breaking, it is recommended that a pilot who will mark all obstacles, should walk in front of the mower.
- While crossing roads, on pedestrian crossings or other permanent obstacles the mower must always be raised.
- In real life the user should use so called "common sense". In regards with this during intense usage the cost of necessary service checks should be taken into account – see **12. WARRANTY TERMS**.
- After driving onto single bushes with diameters up to about 2 cm. the tractor should be momentarily stopped until the mower can shred the bush completely and then slowly, in spurts, move forward so that the cutting unit does not get clogged.

NOTE:

For thick and high vegetation, stumps etc. use heavier machinery.

5.7. Removing clogging and jams

When operating the mower pay attention to variable conditions on field, which may influence the mower clogging and jams, such as: terrain unevenness, height and density of grass as well as other objects in the grass (stones, branches, piles of soil). In order to avoid clogging and jams, operating speed should be adjusted to the mentioned conditions.

WARNING!

Removing clogs and jams while the machine is in operation can lead to an accident!

In case of machine blockage caused by wrapped material, set the machine on a flat surface, remove excess material using sharp tool. After clearing the machine check if nothing has been damaged.

To remove any clogging it is obligatory to disconnect the drive and the motor, take out the ignition key. When eliminating any clogging on the machine, use also safety means for operator, so protective gloves and tight wear.

5.8. Dismounting mower from tractor

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

To dismount the mower from the tractor, do the following:

- turn the cutter-shaft's drive off,
- place the mower on an even, paved ground, lower and secure support legs, check, if the mower is properly secured against falling,
- turn the tractor's engine off and take ignition key out,
- dismount the PTO shaft and place it on a shaft holder,
- detach tractor's top and lower links from the mower's hitch,
- carefully drive away with the vehicle.

6. MOUNTING AND ADJUSTMENTS

6.1. Setting mowing height in MIDO, GRINO, MAMUT, RIO flail mowers

Please adjust the mowing height according to own needs and in accordance with **Fig. 15** and **Tab. 7**. Mowing height adjustment is possible by changing position of copying shaft. Therefore undo bolts fastening the copying shaft and re-tighten them on the desired level.

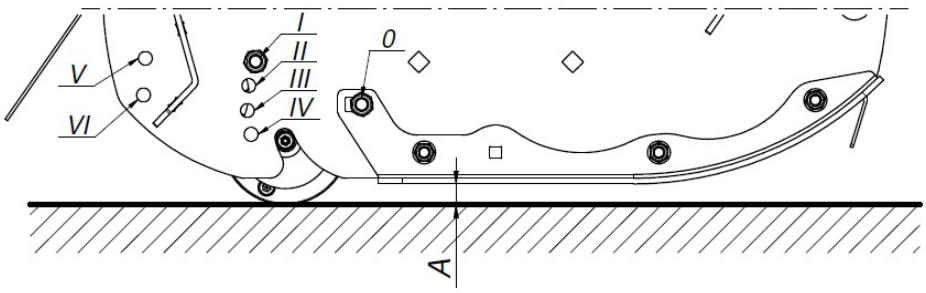


Fig. 15. Setting the mowing height

Tab. 7. Possible mowing heights

Position	Mowing heights – A[mm] in mowers:			
	MIDO	GRINO	MAMUT	RIO
I + 0	21	12	8	10
II + 0	38	31	30	32
III + 0	51,5	49	50	52
IV + 0	62	68	68	70
V + III	21	-	-	-
VI + IV	55	-	-	-

6.2. Setting mowing height in VINO flail mower

In **VINO** flail mower, there is a possibility of set the copying shaft in two main positions marked by (**0**) and (**1**) in **Fig. 16**. The default position is **0** position. Depending on the own needs, there is a possibility of the mowing height adjust by using (**I-VIII**) positions (**Tab. 8**). To changing the copying shaft height in (**1**) position, holes in the sides of the mower should be made and counter knives should be demounted. In this position, the copying shaft is cleaned by flail shaft. The rear plate position should be adjusted to own needs.

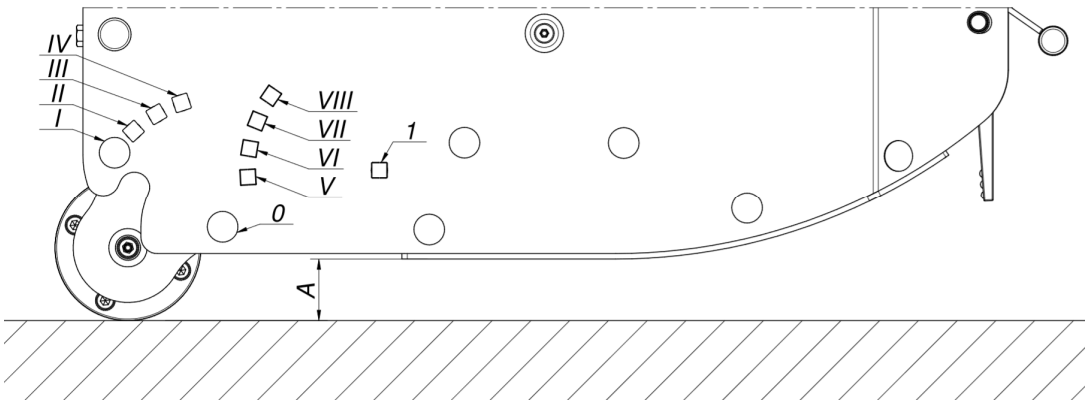


Fig. 16. Adjusting the position of the copying shaft

Tab. 8. Possible mowing heights

Position	Mowing heights – A in VINO mowers:
I + 0	56
II + 0	37
III + 0	18
IV + 0	1
V + 1	53
VI + 1	38
VII + 1	22
VIII + 1	5

6.3. Service flap in RIO flail mower

Service flap in RIO range should be used for service or flail replacement only. In order to gain access, You need to take bolt **A** (**Fig. 17**) from both sides of the machine and set the hinged flap in the position allowing for easy access.

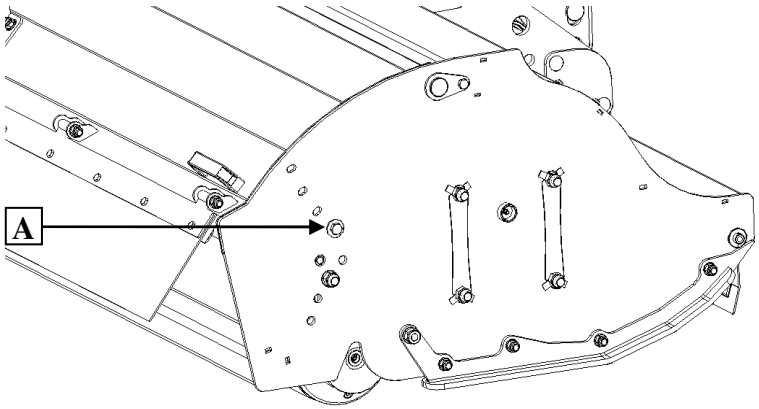


Fig. 17. Rio flail mower service flap

WARNING:

Do not operate with the service flap open!

6.4. Maintenance

6.4.1. Controlling belt tautness in belt gear in MIDO, GRINO, MAMUT, RIO flail mowers

Make sure to check tightening of V-belts in the belt gear on regular basis.

A tightening mechanism (**2**), equipped with a tightening spring (**3**) with bolt, is used to adjust the tautness of the belt (**1**) (**Fig. 18**). Tightness of the belts is adjusted through tightening the nut (**4**) onto the bolt. The correct tightness of the belts can be confirmed by pressing the belt with a finger with the force of approximately 10 kg the belt yields about 0.5 cm.

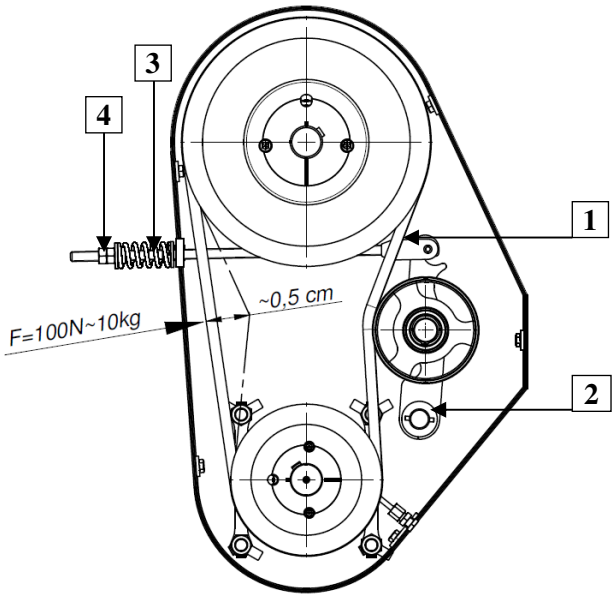


Fig. 18. Overview of the belt gear in MIDO, GRINO, MAMUT, RIO flail mowers

6.4.2. Controlling belt tautness in belt gear in VINO flail mower

Make sure to check tensioning of belt in the belt gear on regular basis.

In order to tension the toothed belt in VINO flail mower (**Fig. 19**) it should be:

- place the mower on an even, paved ground,
- remove the belt gear cover (**2**),
- loosen the screw (**3**), (**4**),
- tighten the adjustment screw (**5**) to obtain the required belt tension,
- adjust the position of angle gear (**7**) by the screw (**6**). The driving shaft (**8**) should be in parallel position to the ground,
- tighten the screws (**3**), (**4**),
- check tensioning of belt,
- put on the belt gear cover.

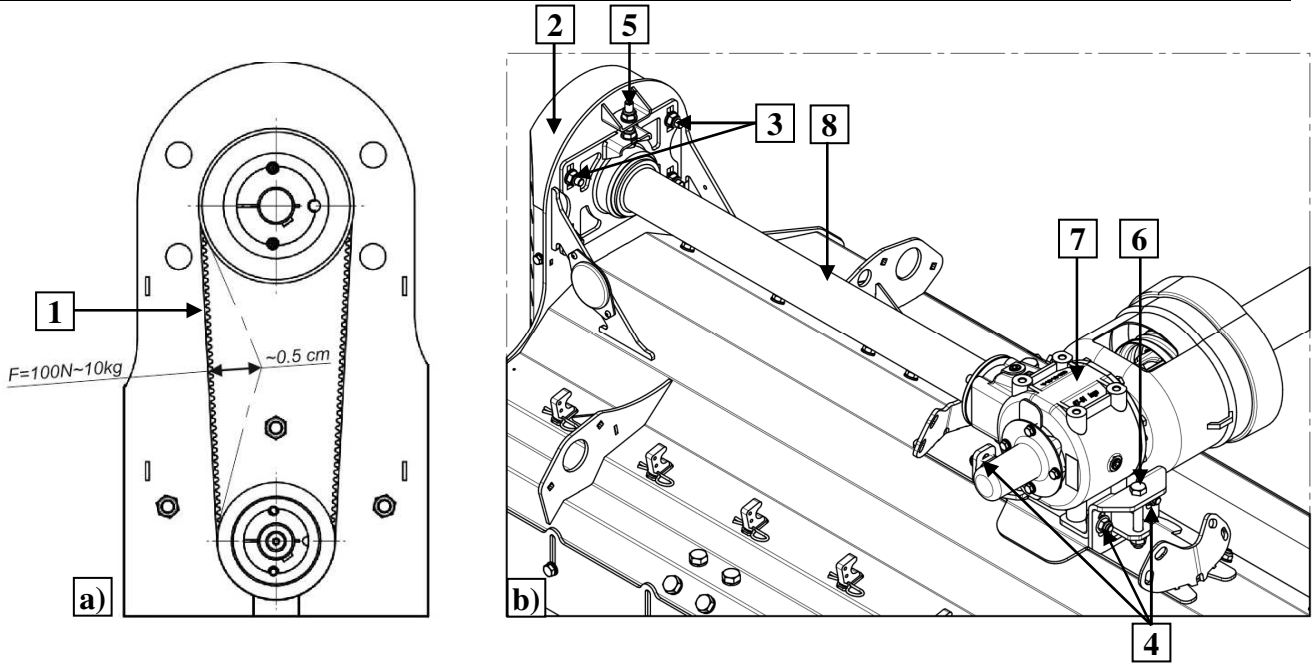


Fig. 19. a) Overview of the belt gear in VINO flail mowers; **b)** belt tensioning system in VINO flail mowers

6.4.3. Checking flail blades

IMPORTANT:

Always check the condition of flail knives and flail knife sockets before each operation. Worn or damaged elements should be considered as hazardous for life.

If needed replace knives. To keep the shaft well balanced, knives must be of the same type and weight. In the case of excessive vibrations of the machine, please balance the flail shaft.

After flail knives are replaced, make sure they are installed in a correct position, as in **Fig. 20**.

Knives can be obtained from the manufacturer of the mower – "SaMASZ".

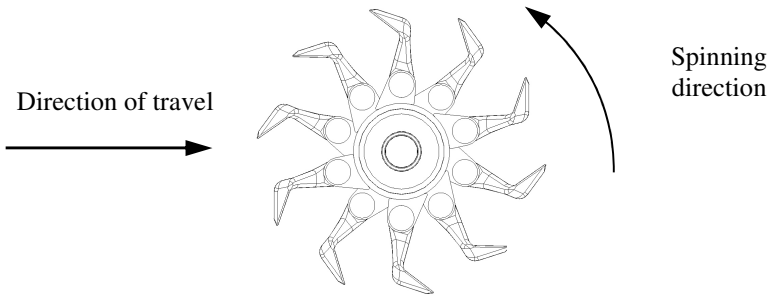


Fig. 20. Way of assembling the flail knives

Worn flail blade securing bolts should always be replaced. Using bolts with strength rating lower than 10.9 is forbidden.

6.4.4. Daily maintenance

The following should be done everyday after finishing work:

- wash the mower removing any remains of dirt or vegetation,
- check all visible external parts and assemblies and their connections,
- tighten all loose bolt connections and replace all worn or damaged parts,
- lubricate the telescoping shafts of the ATS with an STP grease,

- if necessary lubricate all other assemblies in accordance with lubricating instructions (point 0),
- lubricate the bearings on both sides of the flailing shaft using ŁT 43 grease,
- check for any play within the bearings of the copying and flailing shafts. In the event of any play replace the bearings.

6.4.5. After-season maintenance and storing

After the end of mowing season the mower should be carefully cleaned and washed and after drying all working surfaces and suspension pins should be protected from rust by lubricating with grease.

Additionally:

- touch up any chips in the paint,
- check the oil levels in the gearbox,
- examine technical condition of the copying and flail shaft's bearings. If necessary replaced bearings and seals (execution of the activity by experts from SaMASZ company),
- protect working parts (pins, joints, cylinder rods, etc.) against corrosion by applying a thin film of solid grease on their surfaces.

Dismounted mower should be stored in its parking position, so it is set stabile on slides and on the ground shaft. It is recommended, to store the machine on paved ground, preferably under the roof, inaccessible to unauthorized personnel (especially children). The machine should be stored in a dry place, in case of wet weather recall that the machine should be greased properly.

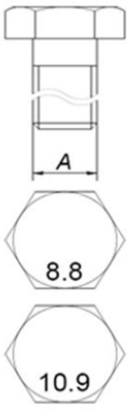
6.4.6. Restarting the machine after longer idle periods

After the storing period perform the following:

- Make sure that all nuts and screws are tightened with correct torque (**Tab. 9**).
- Make sure that all guards are installed in place.
- Lubricate the whole machine.
- Examine condition of flail knives, and if necessary, replace them with new ones.

Tab. 9. Torque values for bolts

A	6.8		8.8		10.9		12.9	
	Maximum torque							
	Ib-ft	Nm	Ib-ft	Nm	Ib-ft	Nm	Ib-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.

7. LUBRICATION

7.1. Angle gear

Everyday before starting work the oil level should be checked and if necessary refilled by removing plug (**1**) in the upper part of the gear (**Fig. 21**). The oil level is checked by removing the control plug (**2**) on the side of the gear. If the oil level is too low replace it until it appears in the control opening (**2**). The amount of oil in the gear is about 1 liter (**Tab. 10**). Oil levels should be checked with the mower on level ground.

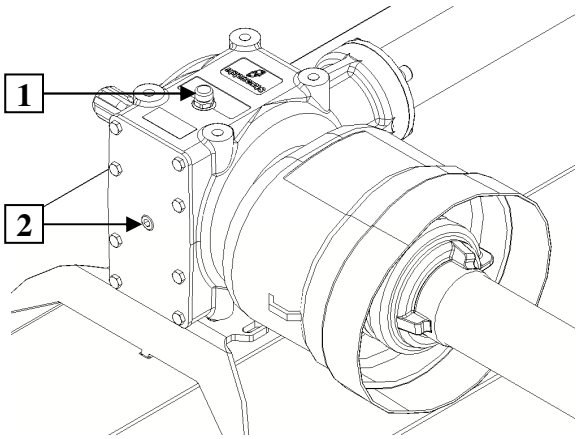


Fig. 21. Control point and oil change point of the angle gear

Tab. 10. Oil capacities

Mower type	Amount of oil [L]	Oil type	Changing frequency
090	1.1	SAE 80W-90 API GL-4	once every 3 seasons (with heavy use)
100	2.0		

7.2. Flail and copying shaft

Greasing with LT – 43 grease of flail shaft bearing (both sides) should be performer on the show points **Fig. 22**.

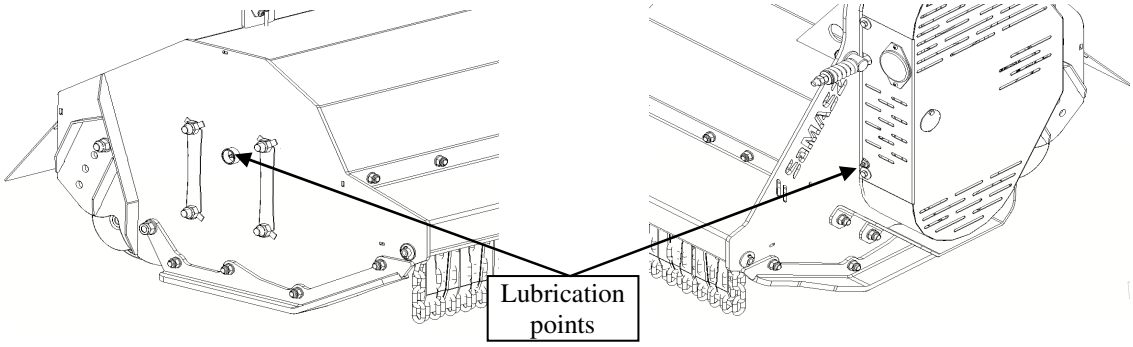


Fig. 22. Lubrication points of the bearings of flail shaft

Copying shaft should also be greased with (LT – 43) on both sides in points shown in **Fig. 23**.

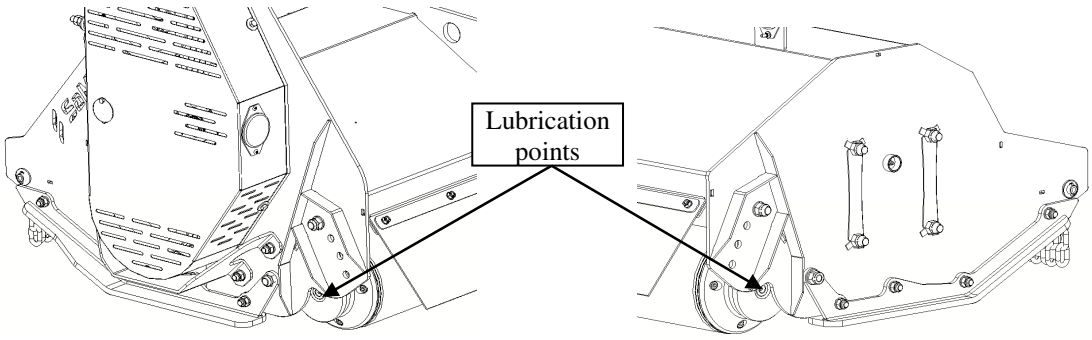


Fig. 23. Lubrication points of the bearings of copying shaft

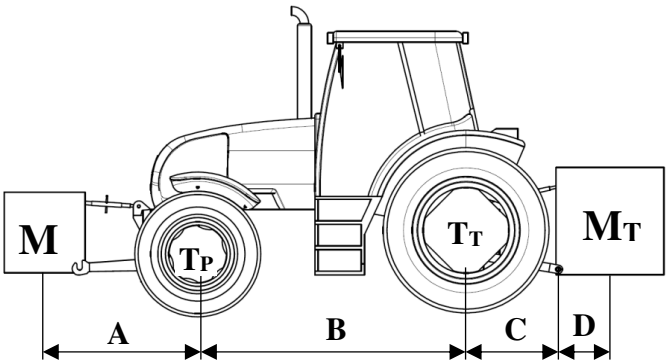
7.3. Risks present when lubricating

- 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 footwear. Also use protective gloves. In case of a contact with skin, immediately wash the infected area with plenty of water with soap.
- 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. DEFINING TOTAL WEIGHT, AXIS LOAD, TYRE LOAD CAPACITY AND MINIMUM LOAD

NOTE:

When mounting the machine on a tractor using front and/or rear 3-point linkage, a maximum value of permissible load cannot be exceeded – tractor's front axis load must be 20% of the tractor's overall weight.
Before using the tractor-machine assembly, check whether these conditions are met, while calculating and weighing the assembly.



For calculations the following data is necessary:

T	[kg]	Tractor's overall weight	(1) (3)
T_P	[kg]	Front axis load on unloaded tractor	(1) (3)
T_T	[kg]	Rear axis load on unloaded tractor	(1) (3)
M_P	[kg]	Total weight of machine mounted on front 3-point linkage or weight of front ballast	(2) (3)
M_T	[kg]	Total weight of machine mounted on rear 3-point linkage or weight of rear ballast	(2) (3)
A	[m]	Distance between tractor's front axis center and center of gravity of machine mounted on front 3-point linkage / front ballast	(2) (3)
B	[m]	Distance between tractor's axes	(1) (3)
C	[m]	Distance between tractor's rear axis center and centers of ball joints on tractor's lower links	(2) (3)
D	[m]	Distance between centers of ball joints on tractor's lower links and center of gravity of machine mounted on rear 3-point linkage / rear ballast	(2)

(1) Refer to tractor's operation manual

(2) Refer to technical data for machine in operation manual or price list

(3) Dimensions / measurement

- Calculating minimum weight of front ballast **$M_{P\ min.}$** – machine mounted at tractor's rear:

$$M_{Pmin.} = \frac{M_T \times (C + D) - T_P \times B + 0{,}2 \times T \times B}{A + B}$$

- Calculating real axis load at tractor's front axis **$T_{P\ rzecz.}$**:

$$T_{P\ rzecz.} - \frac{M_P \times (A + B) + T_P \times B - M_T \times (C + D)}{B}$$

If the value of front axis load ($T_{P\ rzecz}$**) is less than 20 % of tractor's overall weight (**T**), apply additional load on the front axis.*

- Calculating total weight of tractor-machine assembly **M_C**:

$$M_C = M_P + T + M_T$$

- Calculating real axis load at tractor's rear axis **$T_{T\ rzecz.}$**:

$$T_{T\ rzecz.} = M_C - T_{P\ rzecz.}$$

- Tire load capacity – apply double the load indicated by the tires' manufacturer.

Enter the above calculation data and technical data provided by the manufacturer in the below table.

	Real value from calculations		Value to technical specification		Double value of tire capacity load
Minimum weight of front ballast **M_{Pmin}**					
Total weight **M_C**		≤			
Front axis load **$T_{P\ rzecz.}$**		≤		≤	
Rear axis load **$T_{T\ rzecz.}$**		≤		≤	

Minimum ballast must be reached by mounting the machine or additional weights provided on the tractor.

Values resulting from calculations should be lower than or even to values given in technical specification.

9. DEFECTS AND THEIR REPAIR

Malfunction	Cause	Recommendations
Mower is not mowing or leaves strips of uncut grass	Sliding of the belts	Adjust belt tautness using the bolt according to the instructions
		Worn-out belts - replace belts or apply belt paste
		Blocked cutting chamber, remove all foreign material
	Damaged, worn or blunt flail knives	Replace or sharpen knives
	The PTO rpm are too low despite high rpm of vehicle engine	Check PTO as a service station
	Cut protection spline on flail shaft or gear shaft	Remove and repair wheel and damaged parts
	Damaged belt or intersecting angle gear	Replace or recover the gear
Excessive vibration during operation	Damaged or bent flail shaft	Perform repairs
	Damaged bearings on the flail shaft	Replace damaged bearings on flail shaft
	Loosen bolts fastening the bearing housing on the shaft	Tighten bolts fastening the shaft or check condition of flail shaft in a service point
	Damaged or missing flail knives	Check condition and replace if necessary
Shifting catch is not shifting	Mower not properly mounted on tractor	Check quick couplings for condition and connection
	Damaged or soiled fasteners in hydraulic assembly	Replace or clean fasteners in hydraulic assembly
	Soiled or damaged shift sleeves	Clean or replace sleeves
Leaking cylinder	Contaminated oil in the tractor's hydraulics	Replace oil in hydraulics (recommended oil purity class acc. to NAS 1638 is 9 -10). Provide brand new cylinder repair kit and replace worn gaskets
	Damaged bearing sealing	Replace sealing or the whole cylinder
Excessive heating of the angle gear	Damaged bearings	Repair or replace the gear
	Inadequate oil level	Check oil level and if needed refill or remove excess amount
Loud angle gear operation	PTO shaft tool long	Replace shaft in the gear or shorten PTO shaft
	Damaged or worn bearings on the gear	Replace bearings
	No oil in the gear	Refill oil

10. REPAIR AND WITHDRAWAL FROM USE

10.1. Repair

REMEMBER:
Before repair works make sure the mower is disconnected from the tractor.

Before repairing or assessing whether the mower is still serviceable, it should be carefully cleaned of dirt, mud and plant remains.

After checking nuts and bolts, proper slack in joints and gears we can assess if the machine is still serviceable. Worn out bolts, pegs, pins, discs, holders, knives etc. should be replaced.

Once the mower is repaired perform the following:

- make sure that all elements are installed properly,
- install the removed guards,
- check whether screws and nuts are tightened,
- check proper slack in joints and in gears,
- once all the guards are installed, perform a warm-up start to make sure the repaired machine operates properly.

10.2. Disassembly and withdrawal from use

If the mower cannot be repaired anymore, it should be withdrawn from use. Therefore oil from the frame gearbox should be drained and thoroughly clean any excess oil with cleaning agent, take parts made of plastic off. They should be used further on or delivered to a proper waste treatment company. Upon completing the required activities the mower should be sold to breaker's yard.

IMPORTANT:
When dismounting the machine pay particular attention to and additional dangers, as crushing, cutting, wounding, concussion and abrasion. Use proper tools and personal protective equipment: protective gloves, clothing and footwear, eye wear, etc. Pay attention so that the machine works efficiently, and thus it is required to secure the machine with supports.

11. WARRANTY CARD

REAR – FRONT AND REAR FLAIL MOWER:

	Serial number Manufacture date Guarantor's stamp Controller's signature
	Date of sale Seller's stamp Seller's signature

This product has been checked and deemed fully serviceable and cleared for use.

NOTE
Warranty card – if not filled in, corrected or illegible – **is not valid.**

12. WARRANTY TERMS

12.1. Warranty claims procedures

1. The manufacturer warrants good quality and defect-free operation of the mower under this warranty if the mower is operated in accordance with the operator's manual. This covers only operation of the mower in proper conditions where the following obstacles are not present:
   a) rocks,
   b) drainage, waterworks, or gas sumps and other municipal obstacles
   c) curbs running perpendicular to operating direction
   d) perpendicular ditches and channels
   e) concrete posts or similar, etc.

   As the above conditions rarely occur please observe the instructions in this manual under point 5.6 Operation.

WARNING!

In the event where the obstacles described above occur the operator should be familiar with point **5.6.1. General information on mowing**.

2. Faults or damages to the machine found within 12-month period from the date of purchase shall be removed free of charge at the purchaser's or the manufacturer's.
3. Faults or damages should be submitted personally, in writing or by telephone. Repairs shall be carried out within 14 days. Any repairs under the warranty should be carried out by authorized SaMASZ service facilities.
4. Warranty claims regarding the product replacement or repayment are considered within 14 days by the manufacturer.
5. The following conditions are not covered by warranty:
   a) wear and tear of parts such as: mowing knives, slides, intersecting axis gears and parts within, bushings and sliding bushes, joints, knife holders, cutting knives, V-belts, conditioner's tines and rollers, roller conditioner's rubbers, bearings, rubber - metal fenders, safety curtains, conveyor's belts, connective elements, etc. These repairs may be carried out only at the purchaser cost.;
   b) use of the machine for any purpose other than described in the operator's manual,
   c) working on stony fields and consequences,
   d) running into any obstacle,
   e) too fast lowering of the machine onto the ground,
   f) random events or other occurrences, for which the Manufacturer cannot be held responsible.
6. The Purchaser bears the costs of technical evaluation – if the Manufacturer finds that a claimed product is free of defects and this is confirmed by technical report
7. The Manufacturer has the right to cancel the warranty in the following cases
   a) hampering with the mower, modifications to its mechanical design or intentional damages.
   b) vast damage caused by fortuitous events or others, for which the Manufacturer does not bear any responsibility,
   c) lack of required records in the warranty card or filling in the warranty card independently,

d) use of the mower for any purpose other than described in the operator's manual.

8. The 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 by the Contractor due to causes dependent on the user shall lead to termination of the warranty given for the particular machine.
9. The Manufacturer shall not bear any compensation responsibility for the loss caused by the machine breakdown during its operation.

NOTE:
Please ask your dealer to complete and return the warranty card with date and place of purchase, and dealer's stamp and signature. Otherwise you may lose your warranty rights.

NOTE:
The Manufacturer reserves the right to introduce design changes.

NOTE:
The SaMASZ company is constantly working on the development of all of its machine types and models. Therefore, any modifications of our machinery due to their form, equipment and technology are likely. No claims can arise from data, drawings and descriptions included herein as well as the spare parts list.
SaMASZ is not responsible for printing errors.

12.2. Warranty repairs record

Repair scope and spare parts replaced:

Date, stamp and signature of repair shop.

Date, stamp and signature of repair shop.

Date, stamp and signature of repair shop.