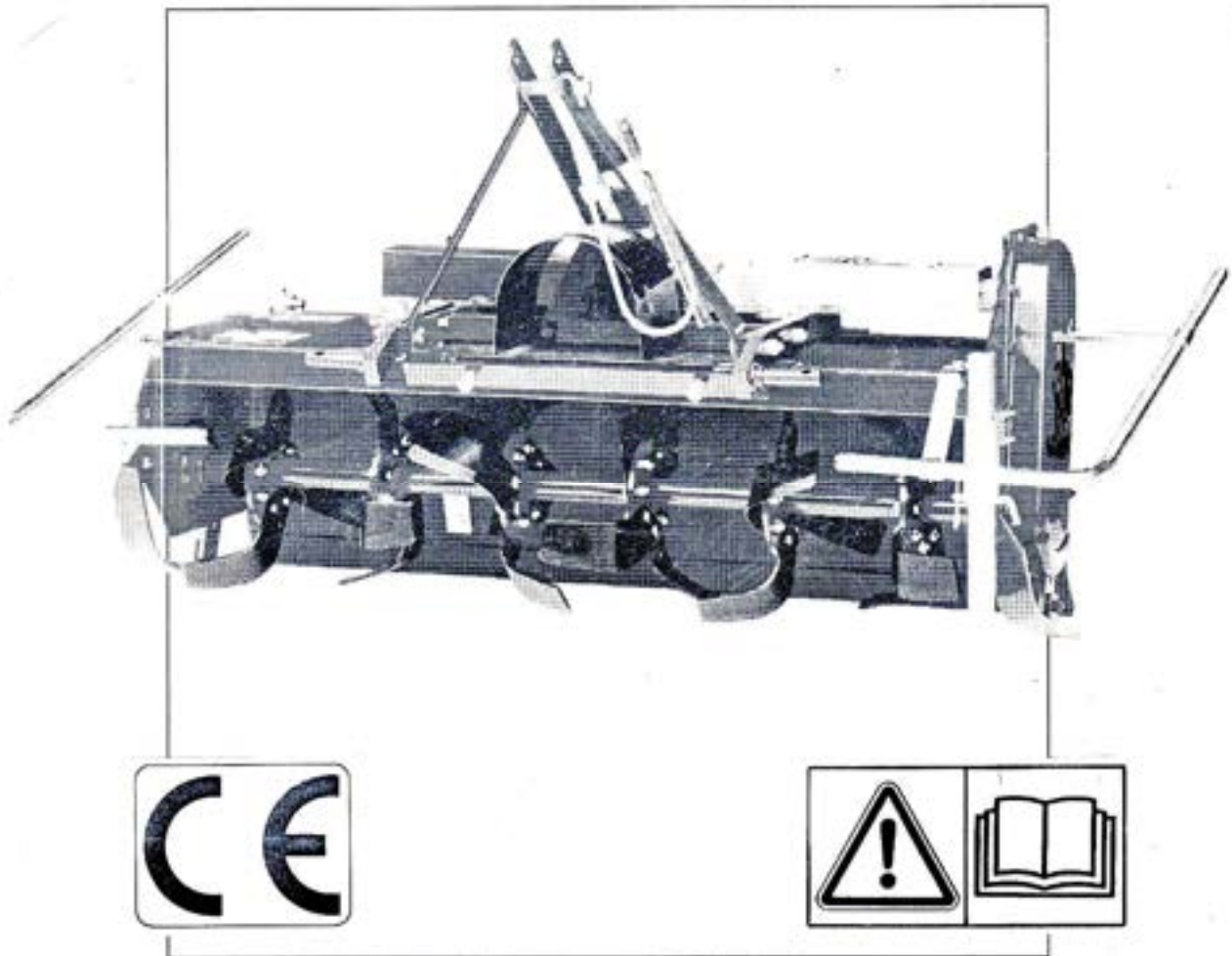


# **SIDE-SHIFTING ROTARY TILLERS FOR SOIL CULTIVATION**

**FPM 619 091- swath width 1,65  
FPM 619 992- swath width 1,45  
FPM 612 729- swath width 1,25  
FPM 619 982- swath width 1,05**

№ 28262



**ASSEMBLY / OPERATION / MAINTENANCE**

December 2010

**COOPERATION**



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## USER WARNING

By buying this machine, you have made a wise choice. Many years of thought, research, and perfectionism have been invested in it. Like thousands of other users, you will also realise that you currently own a machine created with state-of-the-art engineering, know-how and field testing. You have purchased a reliable machine, however good performance and long service life may be expected only if you use it properly.

This user manual contains all necessary information for achieving optimal performance with your machine. However, this performance depends on how thoroughly you have read this manual and applied the knowledge. This is a simple machine; however, many obvious defects resulting from poor performance may be overlooked due to neglecting the natural wear and tear of wearing parts, or operating a poorly-adjusted machine. Do not think you know how to operate and maintain the machine before reading this manual you should always have at hand.

Our service representatives and sales and service centres with trained personnel offer you original parts for your rotary mower. These parts are manufactured and carefully inspected at the same facility where mowers are produced in order to ensure high quality and precision assembly upon replacement.

### **TRACTOR-MOUNTED ROTARY MOWERS MANUFACTURED BY FPM AGROMEHANIKA AD BOLJEVAC.**

Tractor-mounted rotary mowers meet the requirements of the Machine Safety Regulation (Official Gazette of the Republic of Serbia No. 13/2010) with regard to stability and protection of parts or assemblies that may put the operator at risk with its function or form.

**IMPROVEMENT: FPM Agromehanika AD strives to continuously improve its products and therefore reserves the right of modification or improvement, without having to modify or improve previously manufactured or sold equipment.**

The specifications given in this manual are correct as of date of issue.

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FPM AGROMEHANIKA AD BOLJEVAC

OCCUPATIONAL HEALTH AND SAFETY CERTIFICATE AND DECLARATION OF  
CONFORMITY WITH THE SAFETY REGULATIONS SET OUT IN THE DIRECTIVE 98/37/EC  
ARE AN INTEGRAL PART OF THIS OPERATION AND MAINTENANCE MANUAL.



Issued by: FPM Agromehanika AD Boljevac

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## CONTENTS

№ 28262

PAGE	TABLE OVERVIEW
	PARTS GROUP
4	Safety warning
5	Limited warranty
6 - 9	Warning labels
10	Information for reading the instructions correctly
11	Machinery description
12 - 13	Safety
14	General information
15	Technical specifications
16	Operating the rotary mower
17 - 19	Attaching the rotary mower to the tractor
20	Detaching the machine from the tractor
20	Adjustments and maintenance
21 - 22	Blades and quickly replaceable rotors
23	Changing the oil in the side-mounted transmission
23	Changing the oil in the reduction gear
24	Working depth adjustment device
24	Operating the rotary mower
25 - 26	Adjustable coupler
27	Lubrication
28	Adjustments and maintenance
29	Joint coupling — PTO shaft
30	Adjusting the moving mechanism
30	Storing the mower
30	Storing the joint coupling — PTO shaft
31	Certificate — occupational safety measures implemented
32	Declaration of Conformity 98/37/CE
33	User warning



By buying this rotary mower, you now own a very productive and durable machine that was developed in cooperation with the world renowned Italian agricultural machine manufacturer **BREVIGLIERI Spa - Nogara (VR)**.

Original BREVIGLIERI assemblies are installed onto the machine (side-mounted reduction gear and rotor with cutters) from the “ZAPPATRICE b35s” rotary mower range.

**ENJOY WORKING WITH YOUR MACHINE!**

## **PLEASE READ CAREFULLY!**

You will find warning labels “ATTENTION;” “CAUTION;” and “DANGER” in this manual and on the machine. The warnings bring your attention to personal safety and safety of others who work with you, since they need to read the warnings, too.

### **PERSONAL SAFETY**

**ATTENTION:** The word “ATTENTION” is used where the operator’s and other individuals’ safety from accidents is required.

**CAUTION:** The word “CAUTION” is used to indicate a potential risk for the operator and other personnel of serious injury that may occur suddenly. This word is used frequently as a warning for the operator and other individuals for the purpose of preventing a surprise when using the mower.

**DANGER:** The word “DANGER” is used to indicate forbidden action that may involve risk.

ALL ADDITIONAL WARNINGS SUCH AS “NOTICE” AND “IMPORTANT” INDICATE SPECIAL SAFETY-RELATED INSTRUCTIONS REGARDING THE ROTARY MOWER.

### **SAFETY OF THE ROTARY MOWER**

**NOTICE:** THIS SINGLE WORD WARNS THE OPERATOR ABOUT POTENTIAL RISK OF MOWER DAMAGE IN CASE OF FAILURE TO OBSERVE PARTICULAR INSTRUCTIONS.

**IMPORTANT:** THE READER IS INFORMED ABOUT THINGS TO KNOW FOR THE PURPOSE OF PREVENTING MINOR DEFECTS IN CASE HE/SHE MISSED THEM.

### **WARNING!**

IN CASE OF FAILURE TO OBSERVE ANY OF THE ABOVE WARNING LABELS, “CAUTION,” “ATTENTION,” AND “DANGER”, SERIOUS PHYSICAL INJURY MAY OCCUR.

## LIMITED WARRANTY

For each original unit delivered to the user by the FPM Agromehanika AD Boljevac distribution network, the manufacturer issues a warranty in accordance with the Standardization Act and Machinery Safety Regulation (Official Gazette of the Republic of Serbia No. 13/2010) guaranteeing that each mower part is new, free from defects in materials and workmanship, for the period of one year from the date of delivery of the machinery to the end user, subject to condition that the machinery is used and maintained in accordance with the instructions given in this operation and maintenance MANUAL.

### EXCEPTIONS:

- 1.- Wooden parts are not covered by the warranty.
- 2.- Parts not manufactured by FPM Agromehanika AD Boljevac (rubber and plastic components, connecting PTO shaft, PTO shaft guard, etc.) are not covered by this warranty, but by the respective manufacturer's warranty.
- 3.- Parts subject to normal wear and tear during use, such as: rotors, cutter blades, cutter blade supports, slides under the mower's lateral sides, mower cover.
- 4.- The warranty lapses in case of misuse or abuse, improper or negligent use, or accident damages. The warranty also expires in case of using non-original parts, and the manufacturer may not be held liable for any transport damages.

THE MANUFACTURER MAY NOT BE HELD LIABLE FOR ANY LOST PROFITS AS A RESULT OF MOWER DEFECT OR INJURIES TO THIRD PARTIES, NOR FOR ADDITIONAL COSTS INCURRED FOR REMOVING AND REPLACING PARTS.

### The buyer shall be liable and bear the costs for:

- 1.- Regular maintenance, such as lubrication, refilling oil, small adjustments, etc.
- 2.- Transport of the machinery to the service location and back within the warranty period.
- 3.- Travel time of the authorized service representative to the mower owner and back, or delivery of the mower to and from the workshop after the repair.

This warranty does not apply to a mower that has been altered or modified without our express permission, or repaired by another person outside the authorized service.

The warranty is subject to strict observance of the warnings:

- any warnings given in this manual must be observed, and all protective covers regularly inspected and replaced,  
as required.

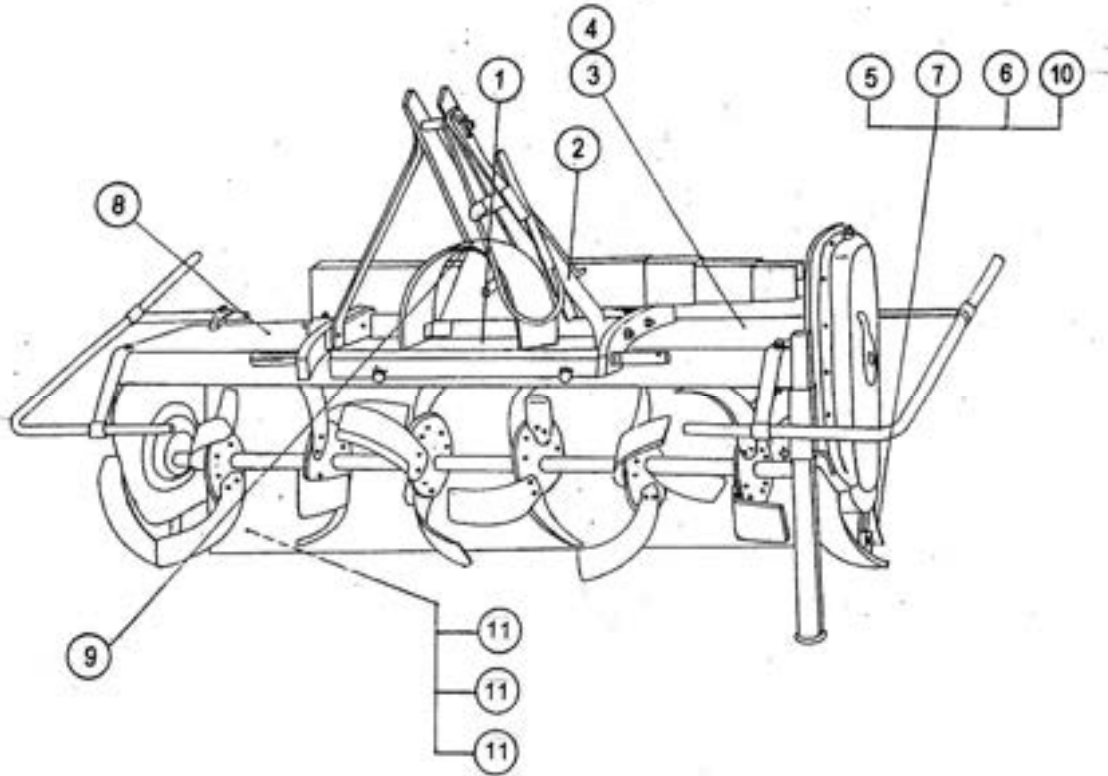
A warranty for parts that are not new is excluded.

Individuals working in our production plant are not its official representatives and are therefore not authorized to assume any obligations in its name or on its behalf.

No warranty shall cover product equipment in excess of that specified, and the manufacturer may not be held liable for injuries resulting from such use.

## WARNING LABELS

The following warning labels are affixed to your mower for your safety and the safety of others working with you. Holding the manual in your hand, walk around the machine and check all warning labels and instructions from the manual. The labels must be legible. If not, they must be replaced.



The rotary mower is identified through its nameplate (label no. 2) located on the console — pyramid on its front side. The nameplate contains following specifications:

- The field marked »Z« contains the occupational safety certificate number.
- The field marked »MASA/WEIGHT« contains the product weight information.
- The field marked »GODINA/YEAR« contains the year of manufacture (last two digits) information.
- The field marked »SERIJA/TYPE« -contains the series and commercial designation information.
- The field marked »№« contains the rotary mower number information, comprising nine digits with

the following meaning:

- first digit — year of manufacture
- second and third digit — manufacturer code
- remaining six digits — product number from the day of production start.



3



BEFORE WORKING WITH THE MACHINE, READ THE INSTRUCTIONS CAREFULLY AND OBSERVE THE WARNINGS.

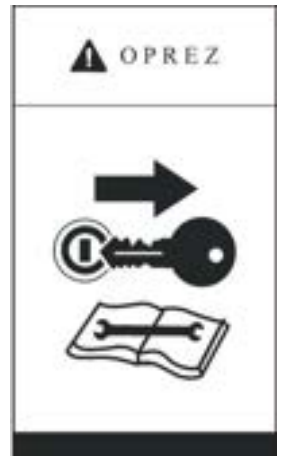


BEFORE PERFORMING ADJUSTMENTS, LUBRICATING OR CLEANING THE MACHINE, TURN OFF THE TRACTOR, REMOVE THE KEY AND WAIT UNTIL ALL MOVING PART HAVE COME TO A STOP.

4



BEFORE PERFORMING ADJUSTMENTS, LUBRICATING OR CLEANING THE MACHINE, TURN OFF THE TRACTOR, REMOVE THE KEY AND WAIT UNTIL ALL MOVING PART HAVE COME TO A STOP.

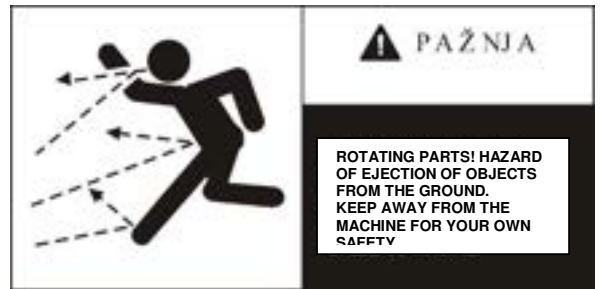


BEFORE WORKING WITH THE MACHINE, READ THE INSTRUCTIONS CAREFULLY AND OBSERVE THE WARNINGS.

5

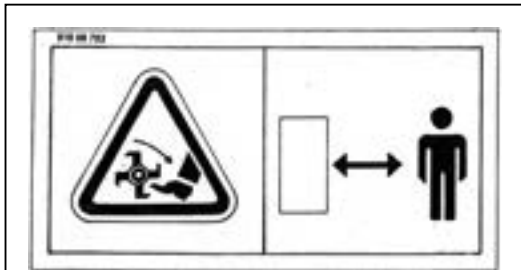


ROTATING PARTS! HAZARD OF EJECTION OF OBJECTS FROM THE GROUND. KEEP AWAY FROM THE MACHINE FOR YOUR OWN SAFETY.



ROTATING PARTS! HAZARD OF EJECTION OF OBJECTS FROM THE GROUND. KEEP AWAY FROM THE MACHINE FOR YOUR OWN SAFETY

6



ROTATING PARTS! Keep your legs away from the rotating parts. Turn the tractor and the PTO shaft off.



ROTATING PARTS KEEP YOUR LEGS AWAY. BE CAREFUL WHEN OPERATING THE MACHINE. TURN THE TRACTOR AND THE PTO SHAFT OFF.

7

419 81 147

**ROTATING PARTS! KEEP HANDS AWAY. PROCEED CAREFULLY WHEN LOWERING OR RAISING THE FLAP, TURN OFF THE TRACTOR ENGINE AND THE PTO SHAFT.**

**PAŽNJA**

**ROTATING PARTS! KEEP HANDS AWAY. PROCEED CAREFULLY WHEN LOWERING OR RAISING THE FLAP, TURN OFF THE TRACTOR ENGINE AND THE PTO SHAFT.**

8

419 81 146

**DANGER OF FALLING. NEVER TRANSPORT OTHERS WHEN WORKING WITH OR TRANSPORTING THE MACHINE.**

**PAŽNJA**

**DANGER OF FALLING. NEVER TRANSPORT OTHERS WHEN WORKING WITH OR TRANSPORTING THE MACHINE.**

9

419 81 145

**ROTATING PARTS! WHEN APPROACHING AN OPERATING MOWER, MAKE SURE THAT BODY PARTS OR CLOTHING DO NOT GET CAUGHT IN THE ROTATING PARTS. SECURE THE PTO SHAFT GUARD WITH CHAINS.**

**PAŽNJA**

**ROTATING PARTS! WHEN APPROACHING AN OPERATING MOWER, MAKE SURE THAT BODY PARTS OR CLOTHING DO NOT GET CAUGHT IN THE ROTATING PARTS. SECURE THE PTO SHAFT GUARD WITH CHAINS.**



10



11

***FPM - 612 . 729***

11

***FPM - 619 . 982***

11

***FPM - 619 . 992***

11

***FPM - 619 . 091***



**CAUTION: THIS TRIANGLE SYMBOL IS USED WHERE YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS IS REQUIRED, IN ORDER TO PROTECT YOUR MOWER AGAINST RISKS. THEREFORE, READ THE WARNINGS WITH THESE SYMBOLS CAREFULLY.**

## INFORMATION FOR READING THE INSTRUCTIONS CORRECTLY

In this manual, “left” and “right” corresponds to the direction of motion.

Metric thread is used for installation.  
Tighten all screws during the installation.

Each figure uses symbols showing the installation location.

Read the content carefully in order to assemble the mower properly.



**ATTENTION: THIS SYMBOL IS USED TO WARN YOU ABOUT YOUR PERSONAL SAFETY. BE CAREFUL!**

## MACHINERY DESCRIPTION

ROTARY MOWERS: FPM 619 992- swath width 1,45 m  
FPM 612 729- swath width 1,25 m  
FPM 619 982- swath width 1,05 m  
FPM 619 091- swath width 1,65 m

are a family of agricultural machines in the production range of FPM Agromehanika AD Boljevac. These mowers are incredibly productive and durable machines that have been developed in cooperation with the world-renowned Italian agricultural machine manufacturer BREVIGLIERI Spa - Nogara (VR). The rotary mower's technical system is of modular design and comprises the following modules:

### I – Supporting structure with coupling and working depth adjustment system:

- I - 1 — Main support – welded assembly
- 2 — Moving part – pyramid – assembly
- 3 — Cover
- 4 — Side plate – left
- 5 — Side plate – right
- 6 — Jack – left
- 7 — Jack – right

### II – Transmission with safety devices.

- II - 8 — PTO shaft – assembly
- 9 — Reduction gear – assembly
- 10 — Transmission shaft with protector
- 11 — Side chain gear

### III – Working module – rotor with cutters, tines.

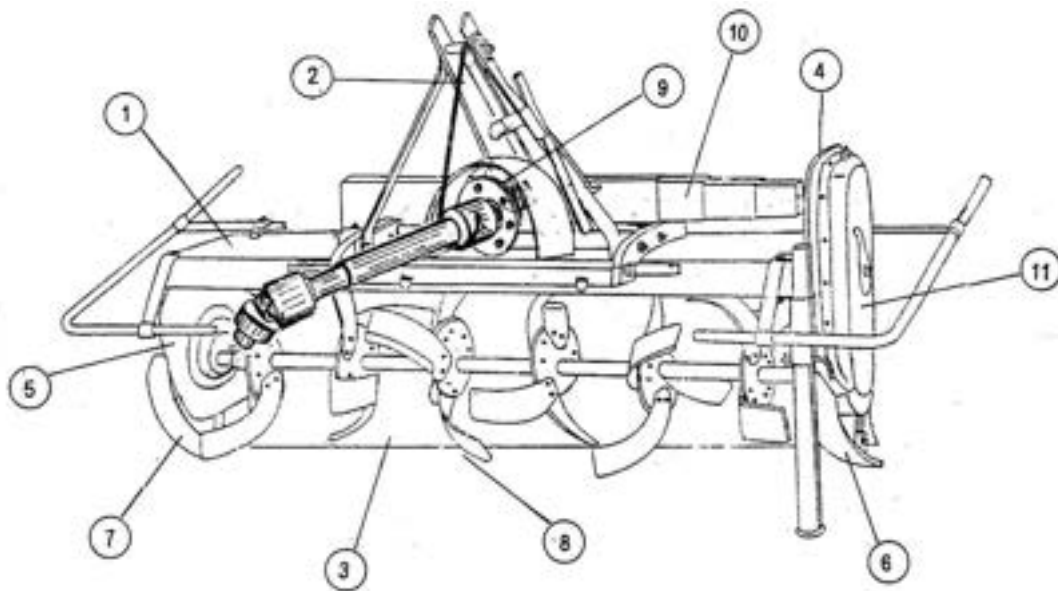


Figure 1 – Rotary mower

## SAFETY

Most accidents occur during work, maintenance, or transport due to non-observance of the fundamental safety requirements. This is why you are the most important person for operating and maintaining your mower. Regardless of whether you are working alone, with your family members, or with other persons, always read and observe the basic method of operation. Additionally, warning labels are affixed on the mower that serve as a reminder to always observe safety practices.

- ▲ - Read this manual carefully prior to beginning work.
- ▲ - Metal nameplate must always be legible, visible and clean.
- ▲ - Every time before using the mower check whether all parts (nuts, screws, etc.) are tightened, and especially secure the rotor cutters, rotor ends to the supports, lower pins to the supports and the pyramid to the mower body.
- ▲ - If the cutters and their fasteners (nuts, bolts, etc.) are worn out or damaged, replace them immediately with original parts from FPM AGROMEHANIKA AD BOLJEVAC.
- ▲ - For reasons of safety, check if the protectors on the tractor connecting shaft and PTO shaft of the rotary mower are correctly installed and secured.
- ▲ - Use a PTO shaft recommended by the manufacturer.
- ▲ - Fasten the PTO shaft guard with the provided chains. (PTO shaft guard may not turn.) If the guard is damaged, replace it immediately.
- ▲ - When the PTO shaft is not in use, place it onto its provided location on the machine.
- ▲ - Prior to adjusting, lubricating, or cleaning the mower, turn off the tractor and switch off the PTO shaft.
- ▲ - Wait until all moving parts have come to a stop before approaching the mower.
- ▲ - Keep away from all mower parts while working.
- ▲ - Never wear clothing that can get caught in the mower's moving parts, and when approaching the moving mower, pay particular attention that the clothing is not caught by the rotor or the PTO shaft.
- ▲ - Never transport an unsecured mower.
- ▲ - Never transport an operating mower.
- ▲ - Never transport others on the mower or the tractor during work or transport.
- ▲ - Never turn on the connection shaft when the mower is in the transport position.
- ▲ - The operator must ensure that no individuals or animals are in the work area of the mower, prior to switching the mower on and beginning work.
- ▲ - Remove all foreign objects from the field prior to beginning work.
- ▲ - Never remove guards when operating the mower.

- ▲ - The operation and maintenance manual must be kept for the entire service life of the machine.
- ▲ - **IMPORTANT:** Never work on rocky terrain in order to avoid risk of accidents from stones ejected in the direction of buildings and persons, or cutter failure.
- ▲ - Never work when driving in reverse.
- ▲ - In special circumstances, use lights to signal danger, if not contrary to road traffic regulations.
- ▲ - Use a cab tractor for road safety requirements.
- ▲ - Prior to starting the mower, even for a very short distance, always bring it in its transport position.
- ▲ - Prior to starting the tractor for transporting or working with the mower, check whether all installed parts for transport or operation are in working order.
- ▲ - Prior to driving on public roads, secure the mower for safe transport and observe the road traffic regulations.
- ▲ - After the end of the season, authorized service technician should inspect your mower, bring it in the operable condition, especially regarding the rotor cutters, and tighten all parts (nuts, screws, etc.) with a required tightening torque.

**IMPORTANT:**

- ▲ - Adjustments to the mower may be performed safely only when the tractor engine is turned off and locked.
- ▲ - It is extremely dangerous to adjust the metal coupler height while the rotor rotates. Turn the tractor and the PTO shaft off.
- ▲ - Never use the mower without all cutters installed on the rotor. Missing cutters on the rotor may cause irregular operation and vibrations, which may lead to excessive damage to the machine.
- ▲ - After finishing work, switch off the mower engine using the appropriate lever (turn off the PTO shaft), and then proceed to lowering the mower on the ground.
- ▲ - The maximum pivoting angle of the PTO shaft (in operation) may not exceed 30°. If this angle is exceeded, damages to the connecting or PTO shaft may occur.
- ▲ - The guards on the mower sides must be affixed during operation; secure them using the safety screws.
- ▲ - Unauthorised persons, persons without a driving licence, or persons without appropriate mental and physical abilities are strictly forbidden to operate the mower.



**NEVER IGNORE THESE WARNINGS.**



**WARNING: THIS TRIANGLE SYMBOL IS USED WHERE YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS IS REQUIRED, IN ORDER TO PROTECT YOUR MOWER AGAINST RISKS. YOU SHOULD THEREFORE READ THE WARNINGS WITH THIS SYMBOL CAREFULLY.**

## GENERAL INFORMATION

Rotary mowers for soil cultivation with active cutting tools — tines are a range of rotary machines for cultivation with horizontal axis of rotation driven by the tractor output PTO shaft.

The transmission module provides optimal usage of the tractor power when coupled with a connecting shaft, due to small transmission losses, while operating at standard connecting shaft rpm of 540 min<sup>-1</sup>; optimal work modes and other conditions regarding safety, overload control and protection that may be expected during operation.

The work module, rotor with cutters, provides good cultivation quality under any operating conditions and modes thanks to its shape, geometry and arrangement with minimum energy consumption, human or mechanical work per unit of volume of cultivated soil.

The rotary mowers are suitable for all kinds of different agricultural production applications.

### **This machinery is best suited for:**

- **high-quality soil cultivation and preparing the soil for one-pass sowing**
- **small-scale placing and compacting of soil and protection from erosion**
- **all-year application for basic and additional soil cultivation, meadow and pasture regeneration and aeration, and intertillage in orchards**
- **maintaining the structure and increasing the soil fertility**
- **mixing the plant trimmings and mineral fertilisers with the soil**
- **operation on both lowland and sloped terrains**

Transmitting the engine power from the tractor connecting shaft over the transmission to the mower rotor with cutters not only prevents the tractor wheels from slipping and sliding, but on the contrary pushes the tractor forward.

The mower is attached to the category I and II tractors. The machine is raised in the transport and lowered in the operating position by using the tractor's hydraulic control lever.

The rotary mowers are attachable to any domestically or internationally produced tractors with adequate engine power at 540 min<sup>-1</sup> tractor output shaft rpm.

## TECHNICAL SPECIFICATIONS

	<b>ROTARY MOWER DESIGNATIONS</b>			
	<b>FPM 619 091</b>	<b>FPM 619 992</b>	<b>FPM 612 729</b>	<b>FPM 619 982</b>
<b>Swath width</b>	<b>1.65 m</b>	<b>1.45 m</b>	<b>1.25 m</b>	<b>1.05 m</b>
<b>Required tractor power</b>	<b>28 KW or above</b>			
<b>Transmission</b>	<b>MECHANICAL</b>			
<b>Central transmission</b>	<b>Gear drive</b>			
<b>Side-mounted transmission</b>	<b>Single-stage chain gear</b>			
<b>Tillage depth adjustment</b>	<b>Mechanical, via the non-restrained joints</b>			
<b>Cultivation depth</b>	<b>Working 0.15 m, maximum 0.20 m (two-pass)</b>			
<b>Rotor type</b>	<b>With horizontal axis of rotation</b>			
<b>Cutting unit</b>	<b>Naturally rotating, with cutting action, optimal shape, geometry and arrangement, For different operating conditions, soil types and conditions</b>			
<b>Attachment method</b>	<b>Three-point linkage</b>			
<b>No. of connecting shaft revolutions</b>	<b>540 min<sup>-1</sup></b>			
<b>No. of rotor rpm</b>	<b>200 min<sup>-1</sup></b>			
<b>Thread</b>	<b>metric</b>	<b>metric</b>	<b>metric</b>	<b>metric</b>
<b>Weight</b>	<b>220 daN</b>	<b>200 daN</b>	<b>190 daN</b>	<b>180 daN</b>

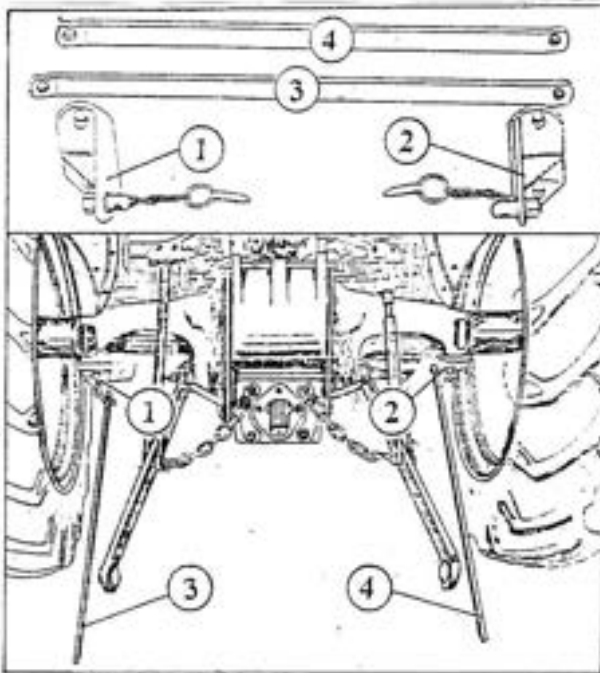
# OPERATING THE ROTARY MOWER

## BEFORE USE

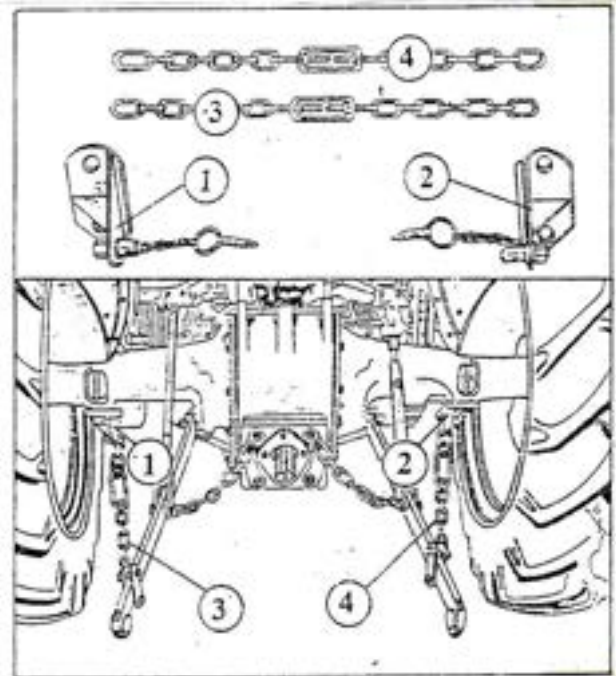
1. Check whether all parts (nuts, screws, etc.) are properly tightened, and secure the rotor cutters, rotor ends to the brackets, lower pins to the brackets and pyramid to the mower body.
  - If the cutters and their fasteners (nuts, bolts, etc.) are worn out or damaged, replace them immediately with original parts from FPM AGROMEHANIKA AD BOLJEVAC.
2. When operating the mower, always use stabiliser links (Fig. 2) and stabiliser chains (Fig. 3). To attach the stabiliser links to the tractor, proceed as follows (see Fig. 2).
  - a) Attach the left stabiliser link bracket (Fig. 2, pos. 1) under the housing of the rear left tractor half-axis, and right under the housing of the rear right tractor half-axis (Fig. 2, pos. 2) by screwing it in.

**NOTE:** Position the stabiliser link brackets so that the pins for attaching the stabiliser rods are facing each other, i.e. the tractor centre line.

- b) Place the stabiliser links onto the bracket pins so that the slightly bent link ends are facing the tractor centre line.
  - c) Secure the stabiliser links with safety keys.
3. If your tractor is equipped with stabiliser chains, follow the assembly method shown in Fig. 3; assembly sequence matches the sequence for stabiliser link (see under 2)
  4. Grease all required places on the rotary mower.



**Figure 2 — Mounting the stabiliser links**



**Figure 3 — Mounting the stabiliser chains**



## Attaching the rotary mower to the tractor



**DANGER:** Attaching the mower to the tractor can be extremely hazardous. Exercise great caution and observe the instructions.



**DANGER:** Use a tractor configuration that meets the rotary mower requirements.

Always perform the attaching operation on an even surface as follows:

1. First, remove the paint from the mower trunnions.
2. Reverse the tractor slowly to position it perpendicular to the rotary mower, lower the lower linkages using the hydraulic controls until they reach the height of the centre line of the mower attachment points, and turn the tractor engine off.

**IMPORTANT:** If the tractor is poorly positioned, it is much easier to move the tractor forward or backward than trying to drag the rotary mower towards the tractor linkages by using your own strength.

3. Attach the upper linkage to the top point support on the mower frame (Fig. 4, pos. A).

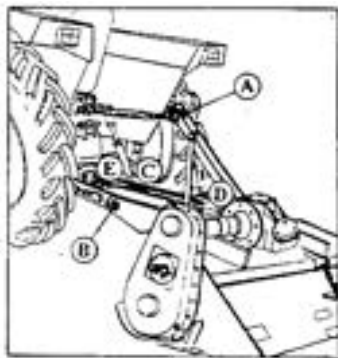


Figure 4. Attaching the mower.

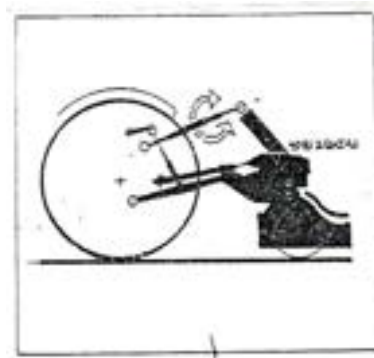


Figure 5. Proper position of the rotary mower after attaching it to the tractor.



Figure 6. Checking the PTO shaft function when the mower is in the bottommost position.

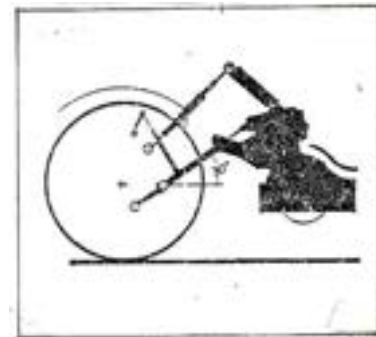


Figure 7. Maximum refraction angle of the PTO shaft.

4. Attach the left lower linkage (and the stabiliser link, if used) to the left rotary mower trunnion, and secure it in this position with the provided keys (Fig. 4, pos. B).
5. Attach the right lower linkage (and the stabiliser link, if used) to the right rotary mower trunnion, and secure it in this position with the provided keys (Fig. 4, pos. C).
6. Attach the front end of the PTO shaft (the end with the friction clutch) to the connecting shaft of the mower and secure it in this position (Fig. 4, pos. D).

Attach the other end of the PTO shaft to the connecting shaft of the tractor and secure it in this position.



**ATTENTION:** The PTO shaft guard must be affixed. Attach it before connecting the PTO shaft with the tractor connecting shaft.

7. From the tractor seat, using the hydraulic controls in the lower quadrant position, move the tractor slowly forward or backward until the front end of the upper linkage can be attached and secure it in this position with the provided splines.
8. After attaching the machine to the tractor as described above, bring the centre line of the reduction gear in the horizontal position by extending or shortening the upper linkage as shown in Fig. 4.

**IMPORTANT:** Always observe the order of sequence when attaching the machine to the tractor:

- a) left lower linkage
  - b) right lower linkage
  - c) upper linkage
9. If necessary, you can extend the tractor lifting links to the required length, ensuring that the machine is not raised too far from the ground when the linkages are in the bottommost position. This prevents any possible damage to the drive mechanism.

**IMPORTANT:** After bringing the mower in the vertical position, you can proceed with other adjustments required for normal operation of the rotary mower.

10. Using the hydraulic controls, raise the mower carefully so that the PTO shaft's angle of refraction is not too large. After raising the machine in the uppermost position by following this procedure, check the following:
- a) Check the PTO shaft for ease of movement and that the joins are not jammed.
  - b) Check that the PTO shaft is not extended too far.
  - c) Check the PTO shaft guard for ease of movement.
  - d) Attach the PTO shaft guard using the provided chains.

Repeat the procedure when the tractor is positioned so that the machine is hanging in the bottommost position. To achieve this, drive the tractor with the attached mower up the ramp until the machine is hanging in the bottommost position, ensuring that its lowest point is now significantly lower than the tractor's lowest point, as shown in Fig. 6.

**WARNING:** If the PTO shaft is operating improperly in the bottommost position of the machine, shorten the tractor lifting links.

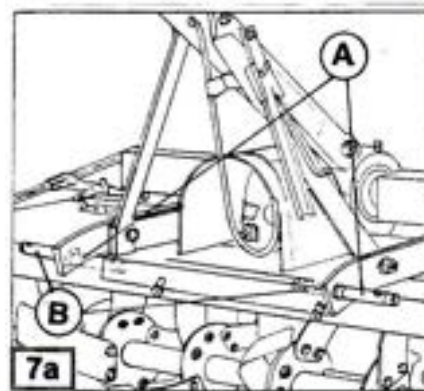


**ATTENTION:** The maximum angle of refraction of the PTO shaft is 30 degrees (see Fig. 27). If this angle is exceeded during operation, serious damage to the PTO shaft or connecting shaft may occur. Take special care to ensure that the universal joints are not stuck.



**NOTICE:** Failure to observe the fundamental requirements for the PTO shaft operation may lead to breakage of the PTO shaft or damage to the rotary mower.

11. Adjust the lower linkages (and stabiliser links, if used) in order to limit the lateral swing of the machine to 5 to 10 cm.  
When working on sloped terrain, this swinging motion must be avoided; therefore, use stabiliser links, or secure the tractor linkages with tension chains.
12. Mark all of the mower positions on the tractor for the purpose of avoiding these adjustments next time, while ensuring proper mower operation.
13. If attaching the linkages to the mower is impossible, reverse the attachment points order (see Fig. 7a), so that both trunnions are facing inside. Other adjustment steps remain unchanged.



All tractor-mounted rotary mowers manufactured by IMT Agromehanika AD Boljevac are designed for attaching to the tractors with a three-point linkage, irrespective of the tractor category (I or II).



**ATTENTION:** When attaching the machine to the tractor, strictly observe the instructions in this manual.

**CAUTION:** The rotary mower is attached properly if the following conditions are met:

1. When the centre line of the reduction gear casing is brought in the horizontal position with rotor cutters nearly touching the ground.
2. When the distance between the tractor and the mower is the shortest possible, PTO shaft components may be extended so far that they are not telescoping completely.  
When the mower is raised in the topmost, or lowered in the bottommost position, PTO shaft components may not fall out from one another.
3. When the mower is raised in the topmost, or lowered in the bottommost position, joint components are not touching each other.
4. When the mower is brought in the lateral vertical position (achieved by adjusting the lower linkages, lifting links, and levelling lever).

## DETACHING THE MACHINE FROM THE TRACTOR

1. Slowly lower the rotary mower to the ground.
2. Sitting in the driver's seat, decouple the upper linkage end (Fig. 4, pos. A) from the tractor while moving slowly forward or backward with the tractor, if necessary, for easy removal of the pin.
  - Replace the pin on the tractor and secure it with the lock.
3. Remove the front PTO shaft joint from the tractor connecting shaft (Fig. 4, pos. E).
4. Detach the right lower linkage using, if necessary, the levelling lever on the tractor in order to make the entire detaching process easier (Fig. 4, pos. D).
5. Detach the left lower linkage (Fig. 4, pos. B).

**WARNING:** After decoupling the machine from the tractor linkages, replace the locks on the links to prevent them from being torn off when the tractor is moving.

## ADJUSTMENT AND MAINTENANCE



**CAUTION:** Remove all objects when adjusting your rotary mower. Foreign objects and parts may be ejected in the direction of individual standing by.



**ATTENTION:** Prior to performing any adjustments or configurations to the machine, switch off both the PTO shaft and the tractor engine.

If handled and maintained properly, rotary mowers manufactured by FPM Agromehanika d.o.o Boljevac ensure better quality of work and have a longer service life. Therefore, always follow the instructions given in this manual, in order to achieve optimal performance and quality.

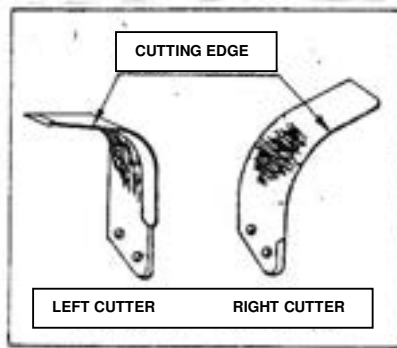
Any worn or damaged parts must be replaced with original parts from FPM Agromehanika AD Boljevac to ensure high quality and precise assembly.

## BLADES AND QUICKLY REPLACEABLE ROTORS

The rotors and cutters are of high-quality. The cutters are made from special alloyed steel which is tough and wear-resistant and therefore have long service life.

The cutters are manufactured for the current condition of drive machines (tractors) and conditions under which these machines should operate, such as:

- working speed within the 0.6 to 1.0 m/s limits
- section length within the 0.05 to 0.10 m limits, up to a maximum of 0.15 m, ensuring high-quality soil cultivation depending on the type and condition of the soil, and the humidity and use of cultivated land.
- collision and vibration free operation, without overloading the tractor.
- cutter rotor rpm  $200 \text{ min}^{-1}$



**Figure 8. Left and right cutter**

The cutters must be properly adjusted. If this is not the case, wear and tear quickly occurs and reduces the work quality. Replace any cutters extensively damaged during operation.

The rotary mower is shipped with properly adjusted cutters on the rotor. However, if the cutters have to be attached to the brackets on-site, proceed as follows.

Determine which cutters are left and which are right (see Fig. 8). Proceed to attaching them to the corresponding brackets. Each section has 2 left and 2 right cutters (Fig. 9, cutter arrangement on rotor brackets).



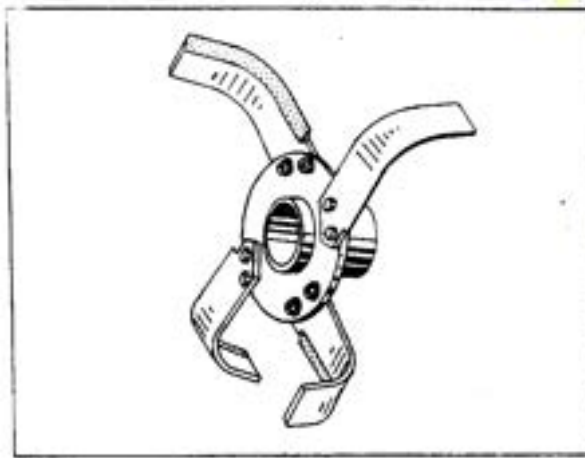
**DANGER:** Cutter replacement is a dangerous operation, exercise caution.



**CAUTION:** In order not to damage or break the cutters, limit the tractor speed to 6 to 8 kmph.

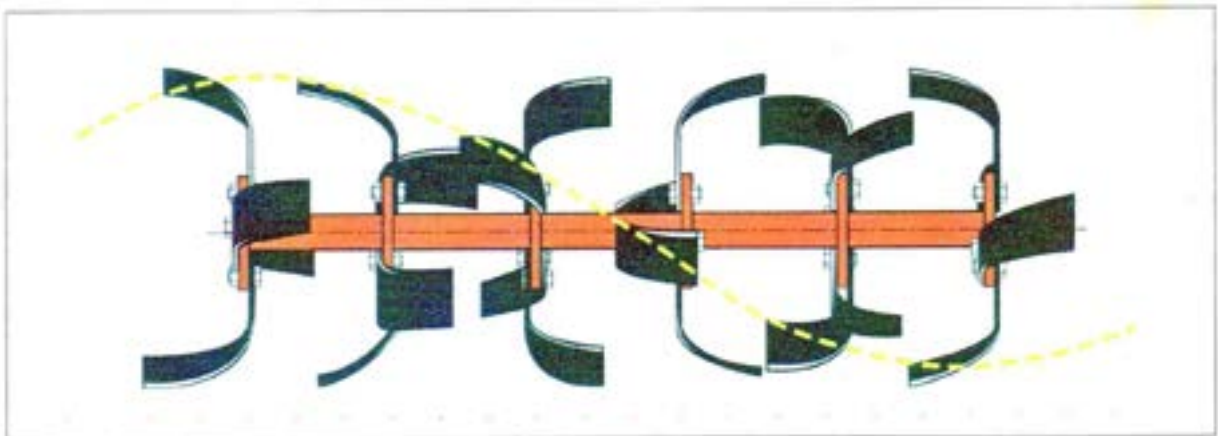


**DANGER:** During operation, the cutters are also picking up stones and other foreign objects; therefore, remove children and animals from the work area.

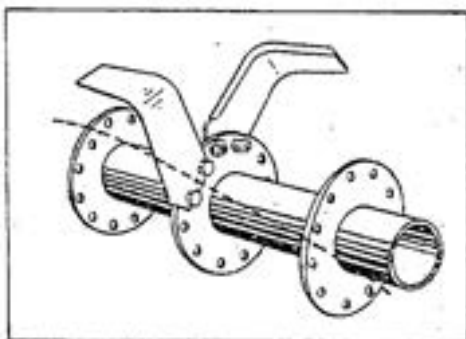


**Figure 9. Cutter arrangement  
2L + 2R**

When the cutters are properly attached to their brackets, all cutters are offset in the forward direction by certain distance. This way, the cutters are arranged in a spiral pattern, as shown in Fig. 10. The cutter arrangement on the rotor (spiral pattern), and their shape and size affect (depending on the penetration angle) the drag and the uniformity of soil cultivation relating to the width and depth, as shown in Fig. 10.



**Figure 10. Cutters arranged in spiral pattern**



**Figure 11. Screw heads**



**WARNING:**

When installing the cutters, the screw heads must rest against the cutters, and spring washers must be located under the nuts on the opposite side of the cutter brackets (as shown in Fig. 11).

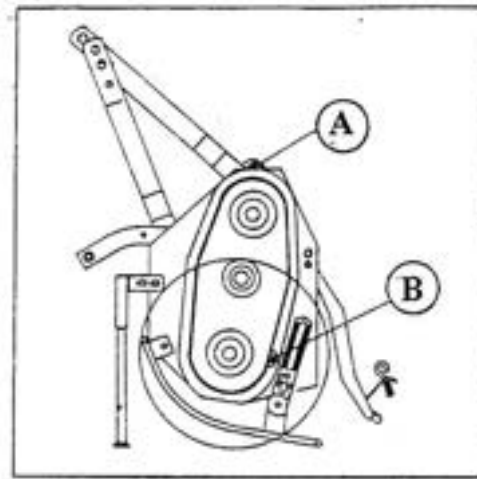


**IMPORTANT:**

Use only original screws of 10.9 strength class, tighten them with a 120 Nm tightening torque and secure using an

## Changing the oil in the side-mounted transmission

After every 500 hours of operation, remove the transmission housing cover and clean it thoroughly. First, loosen all screws securing the housing cover to its back plate. This also enables to discharge the oil from the housing that does not have a separate oil discharge opening. Remove the housing cover carefully, making sure not to damage the gasket. Wash the housing thoroughly with petroleum. Wash the chain and the sprocket thoroughly as well. After performing these operations, replace the cover onto its back plate, making sure to keep the dust and contamination from entering the housing. For easy replacement of the gasket, grease it when securing the cover. Refill the housing with 0.8 litres of oil through the refill opening (see Fig. 12, opening A) until the oil level reaches the gauge (see Fig. 12, opening B).



**Figure 12. Transmission housing**  
 A – Refill opening  
 B – Oil level gauge

## Changing the oil in the reduction gear



**Figure 13. Reduction gear casing**  
 A – Refill opening  
 (dipstick)

First, unscrew the plug (Fig. 13, pos. A) used for refilling and discharging the oil, enabling the oil to discharge from the reduction gear casing. The easiest way to discharge the oil is immediately after finishing work when the oil is still warm and the sediment has not yet settled. Before replacing the plug, refill the casing with 0.4 litres of oil.

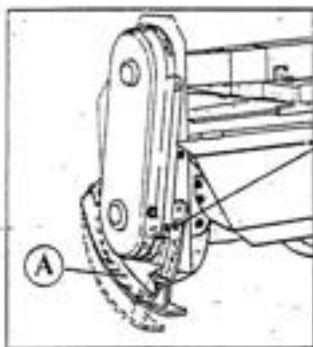
For replacement, use:

Manufacturer name	Oil designation
Fabrika maziva Kruševac	FAMHIPO 90 EP
Rafinerija Beograd	HIPOL B
SHELL	E.P.80
AGIP ROTRA	MP SAE 85W/140

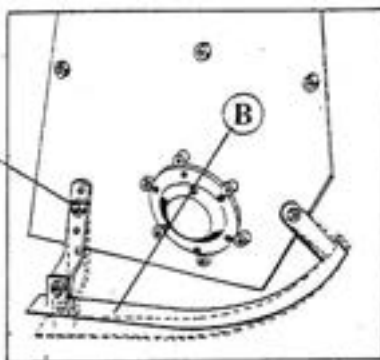
or other manufacturers' oils compliant with the specifications.

- MIL - L 21 05 B
- API - Service GL 5
- JUS B. H3: 303 MP - 5

## Working depth adjustment device



**Figure 14. Adjustment using the left shoe**



**Figure 15. Adjustment using the right shoe**

Use either left or right shoe to adjust the working depth (see Fig. 14 and 15).

Release the adjusting screw (Fig. 14 and 15, pos. 1), raise or lower the shoes (A) and (B) to the desired height, and then retighten the adjusting screw.

For adjusting the height with shoes, both left and right shoes (A) and (B) must be at the same height.

## Operating the rotary mower

When the mower is properly attached to the tractor and lubricated, it is ready for operation and may be put into operation.

Lift the working depth adjustment shoes until desired working depth of the machine is achieved for the first pass. Turn on the tractor engine and raise the machine from the ground using the hydraulic. Switch on the tractor connecting shaft and let the rotor rotate for a while at low revolutions to allow the oil to distribute in the reduction gear casing and the side-mounted transmission.

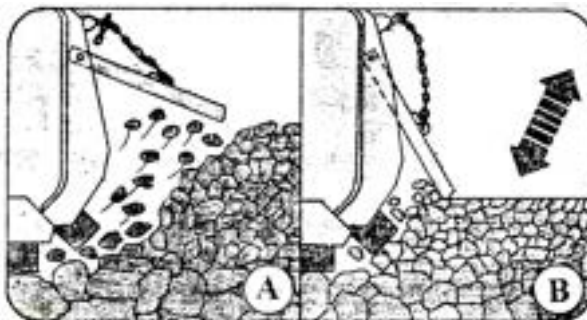
Prior to beginning work, increase the rpm to  $540 \text{ min}^{-1}$ .



**CAUTION: PRIOR TO BEGINNING WORK, REMOVE ALL STONES AND HIDDEN OBSTACLES FROM THE FIELD.**

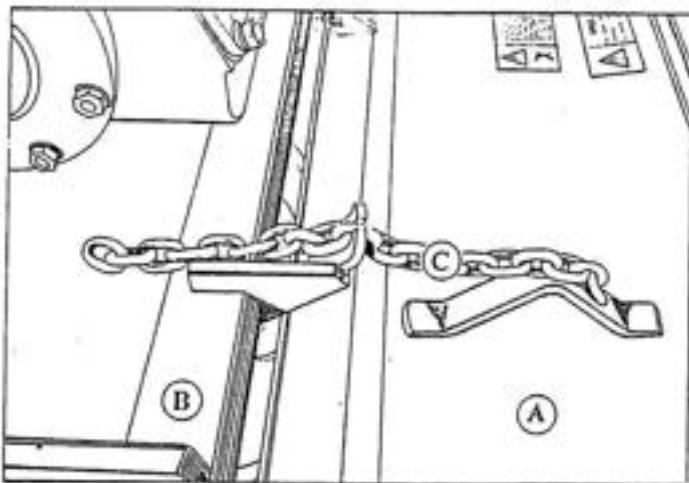
Engage a lower gear, and drive with the tractor slowly forward while simultaneously lowering the machine in the operating position using the hydraulic control lever. Travel a few meters with a tractor and stop. Switch the connecting shaft off immediately. Inspect the working quality and determine whether the desired working depth is achieved. If unsatisfactory, adjust the required working depth using the left and right shoes (see Fig. 14 and 15).

Inspect and determine the quality of broken up soil and adjust the coupler position, if necessary, to achieve the desired soil particle size.



**Figure 16. Different adjustments of the coupler achieve different levels of soil break-up.**





**Figure 17. Adjustable coupler**

Besides protecting the driver, the coupler has other purposes, as well. The coupler (A) is hung on the top guard (B) on the rear mower side (see Fig. 17) and has a bracket with a chain (C, Fig. 17). This chain is used to adjust the coupler height.

### **Adjustable coupler**

Bringing the coupler in the desired position ensures the following:

1. Different soil particle fractions is the first benefit of this device. When using the device for this purpose, take the type, i.e. structure of the soil into account. Using the chain, the device is raised to different height positions, but keep in mind the following:
  - a) The higher the device is raised (see Fig. 16 – A), the coarser the soil particles are. On argilliferous earths, this position of the device prevents the soil from adhering to and around the rotor, and on the inside of the coupler.
  - b) The lower the device is positioned (see Fig. 16 – B), the finer the soil particles are, due to the fact that the soil picked up with the cutters is colliding with more force against the inside of the coupler.  
Sometimes, the picked up soil layer rotates twice around the rotor before being restacked. This enables better aeration when cultivating frozen soil.
  - c) If working with a lifted coupler, the tractor requires less power. If rotor revolutions are simultaneously increased, a thicker layer of soil is cultivated. A layer of soil prepared this way is especially suitable for accumulating humidity from precipitations during winter months, or elimination of bad consequences of soil erosion.
2. When the coupler on the mower is fully lowered, very fine soil particles are produced, making the soil prepared this way especially suitable for sowing fine farm seeds. This position is achieved by hanging the device from the support on the rear chain link. This device position enables levelling of the cultivated area at the same time (see Fig. 16 – A and B).
3. A coupler raised in the uppermost position enables repairs, adjustments, easier cleaning, and similar work.



**DANGER: Never try to clean and remove the material from the tedder during operation. Turn off the tractor engine and wait until the rotating parts have come to a stop.**



**CAUTION: Stop and think: Rotating parts (rotor and cutters on it) may cause serious bodily harm.**

For achieving maximum working depth with your rotary mower, a tractor with appropriate power is required (check the Technical Specifications table on page 14) To achieve the maximum depth is 20 cm, you need to pass the area twice. First, operate the machine at 12.5 cm depth. On the next pass, you can achieve the full 20 cm depth. Two passes are required, because the bottom part of the transmission does not allow the working tool to penetrate to the full depth. This is possible on the next pass, when the soil is already broken up. The bottom transmission part is protected from abrasion with an adjustable slide. One pass enables achieving a 12.5 cm depth.

Continue to work with the machine until the tractor reaches the headlands turn. Now, you must raise the mower using the hydraulic controls, turn with the tractor, and continue to work as before.



**DANGER:** When transporting the rotary mower with a tractor to the operation site and back, switch the tractor connecting shaft off first.



**ATTENTION:** Prior to transporting the rotary mower, ensure that the mower is secured for transport and that road safety regulations are complied with.

## USEFUL TIPS

### Low cultivation depth

- Adjust both left and right slides.
- Engage a low gear, drive slowly. (Tractor power insufficient.)
- Soil too hard, additional cultivation necessary.
- Cutters rolling on the ground instead of cutting. Drive even slower.

### Soil too broken up

- Raise the coupler for levelling the soil (see Section: Adjustable coupler, page 23).
- Increase forward speed.

### Soil insufficiently broken up

- Lower the adjustable coupler.

- Reduce tractor speed.
- Avoid working on field that is too damp.

### Rotor with cutters clogged up

- Soil too damp
- Raise the adjustable coupler.
- Reduce tractor speed.

### The mower is shaking or vibrating

- Foreign objects jammed between the cutters.
- Damaged or broken cutters.
- Cutters arranged wrong – no spiral pattern.
- Cutters arranged wrong – penetrating the ground with a blunt side.
- Rotor deformed during operation from impact against foreign objects (stone, tree stump).

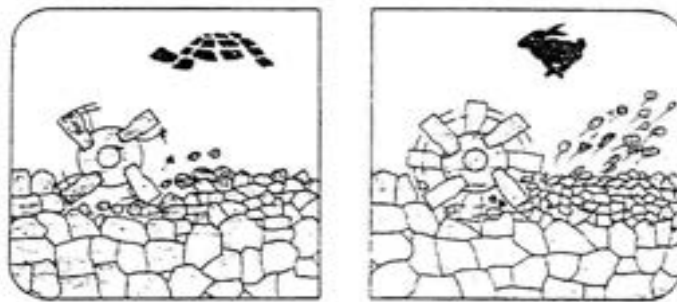


Figure 18. Changing the rotor rpm

## LUBRICATION

This Section is of uttermost importance, read it carefully. By maintaining and lubricating your machine regularly, cost-effective operation and good performance are achieved.



**ATTENTION:** Before performing any interventions, stop the engine and then proceed with lubrication and maintenance work.

**IMPORTANT:** It is very important to lubricate the transmission components in order to comply with the requirements of heavy duty operation. Replace the oil after 500 hours of operation, or once a year at a minimum. See recommendations specified in the Section “Replacing the oil in the reduction gear” (page 21).

**LUBRICATION:** Using a Tecaletmit pump filled with SAE 90 oil, lubricate the rotor axis assembly regularly (see Fig. 19, pos. A). Before lubrication with grease nipples, remove dust using a cloth.

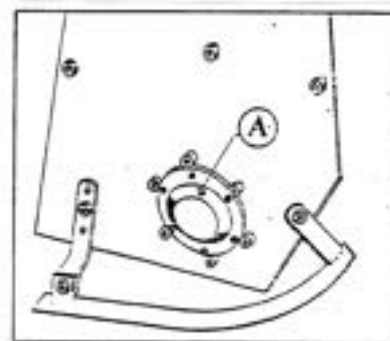


Figure 19. Lubricating the rotor axis

Before commissioning a new machine, check the oil level in the housings and casings; if excess oil is determined, discharge it until the required level is reached. For this, place the mower on even surface with cutter points barely touching the surface and reduction gear axis in the horizontal position.

## LUBRICATION

Inspect the lubrication condition of all places with installed grease nipples and other glide surfaces. Good lubrication level is achieved every eight hours of operation. Prior to lubrication, remove dirt and dust from the surfaces. Lubricate rotating and articulated parts every fifty hours. Lubricate all telescoping parts as needed.

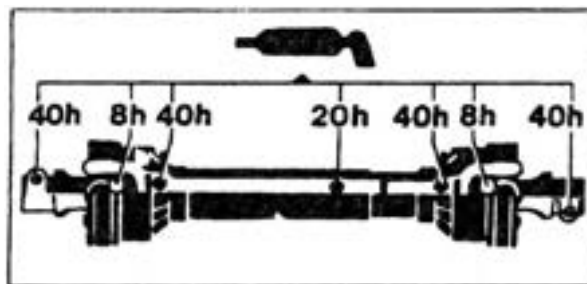


Figure 20.

- 1.- Front joint grease nipple - **every 8 hours**
- 2.- Rotating guard part on the front PTO shaft end - **every 40 hours**
- 3.- Inner telescopic tube part - **every 20 hours**
- 4.- Rotating guard part on the rear PTO shaft end - **every 40 hours**
- 5.- Rear joint grease nipple. - **every 8 hours**
- 6.- Locking bolt on the front and rear end.- **every 40 hours**
- 7.- Clean all shaft parts if the shaft was out of use for a prolonged period of time.

By following this lubrication chart, you will achieve longer service life of the shaft. Careful maintenance prevents malfunctions resulting from heating or damage of the bearings, or increased axial force. Lubricate the PTO shaft on indicated places using high-quality lubricating grease.

**GREASE ALL ROTATING, SLIDING, AND ARTICULATED JOINTS ON THE MOWER FRAME.**



**NOTICE: ALWAYS KEEP IN MIND TO USE THE GREASE OF THE REQUISITE QUALITY IN ORDER TO PREVENT UNINTENTIONAL DAMAGES TO THE MACHINE.**

**BY PROPER AND REGULAR LUBRICATION, UNINTERRUPTED AND SAFE MOWER OPERATION IS ENSURED.**

**ADJUSTMENT AND MAINTENANCE**

Check the tension of all screws on the cutters and retighten them, if necessary, applying a 85 Nm torque. Regularly check the tension of all screws and nuts on the transmission casing, the machine pyramided and the rotary mower frame.

Replace broken or damaged cutters. Sharpen blunt cutter edges. As long as there is a tempered blade, the cutters can be sharpened while maintaining the required blade angle.

Replace damaged and worn parts with original parts from FPM Agromehanika AD Boljevac to ensure high quality and precise assembly.

**REQUIRED TIGHTENING TORQUE**

	<b>6.6</b>	<b>8.8</b>	<b>10.9</b>	<b>12.9</b>
M 8x1	15	26	36	44
M 10x1.25	30	52	74	88
M 12x1.25	51	91	127	153
M 14x1.5	81	143	201	241
M 16x1.5	120	214	301	361
M 18x1.5	173	308	433	520
M 20x1.5	242	431	606	727
M 22x1.5	321	571	803	964
M 24x2	411	731	1028	1234



**DANGER: USE ONLY ORIGINAL PARTS MANUFACTURED BY FPM AGROMEHANIKA BOLJEVAC.**



**ATTENTION: Prior to performing any adjustments or configurations to the machine, turn off both the PTO shaft and the tractor engine.**



**ATTENTION: INSPECT THE TENSION OF ALL SCREWS AND NUTS REGULARY, IN PARTICULAR ON THE ROTOR WITH CUTTERS.**



**CAUTION**

- 1. IT IS YOUR RESPONSIBILITY TO PROTECT YOUR MOWER. REPLACE ALL WORN OR DAMAGED PARTS WITH ORIGINAL PARTS FROM IMT AGROMEHANIKA AD BOLJEVAC IMMEDIATELY.**
- 2. LUBRICATING, ADJUSTING AND CONFIGURING OPERATIONS MAY ONLY BE PERFORMED WHEN THE TRACTOR AND THE PTO SHAFT ARE TURNED OFF.**
- 3. WAIT UNTIL ALL MOVING PARTS HAVE COME TO A STOP AND THAN PROCEED WITH MAINTENANCE.**
- 4. KEEP YOUR HANDS, FEET, AND CLOTHING AWAY FROM THE MOWER'S MOVING PARTS.**
- 5. ALWAYS KEEP THE CONSEQUENCES OF IRRESPONSIBLE AND UNSAFE WORK IN MIND, SINCE THIS MAY CAUSE SERIOUS HARM.**
- 6. BEFORE TURNING THE TRACTOR ON AND COMMENCING WORK, ENSURE THAT NO INDIVIDUALS OR ANIMALS ARE IN THE MOWER WORK AREA.**



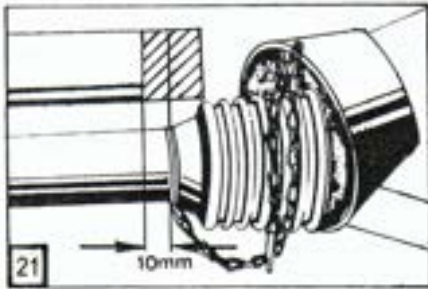
**CAUTION: STOP AND THINK! ROTATING PARTS MAY CAUSE SERIOUS BODILY HARM.**

## JOINT COUPLING — PTO SHAFT

It is extremely important to properly adjust the PTO shaft for attaching to the tractor. Never allow the universal joints to get jammed when the machine is raised in the topmost or lowered in the bottommost position. The PTO shaft has a friction clutch. Make sure to install the clutch on the mower side to enable putting the mower into operation.

If you determine that the PTO shaft is longer and impossible to attach to the tractor, it must be cut to length. The following pictures show how to cut the PTO shaft to length.

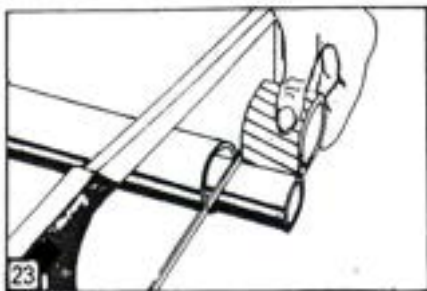
1. Attach one PTO shaft half to the tractor and to the mower, keeping the other halves near each other. Keep adjusting the tractor and mower position until you identify a 10 mm length. Mark this length on the guard, Fig. 21.



2. Cut the guard, see Fig. 22.

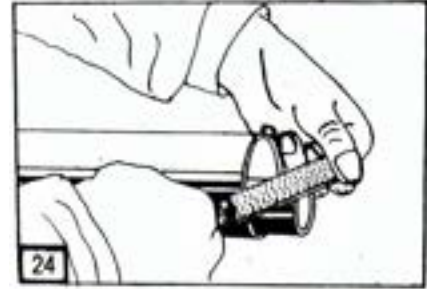


3. Cut the section tube, Fig. 23. No further modifications to the guard or the section tube are allowed.

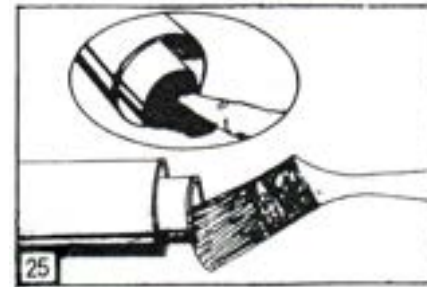


**NOTICE: FAILURE TO OBSERVE THE FUNDAMENTAL REQUIREMENTS FOR THE PTO SHAFT OPERATION MAY LEAD TO BREAKAGE OF THE PTO SHAFT OR DAMAGE TO THE ROTARY MOWER.**

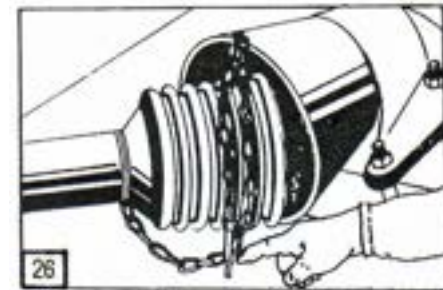
4. Remove any sharp edges, Figure 24.



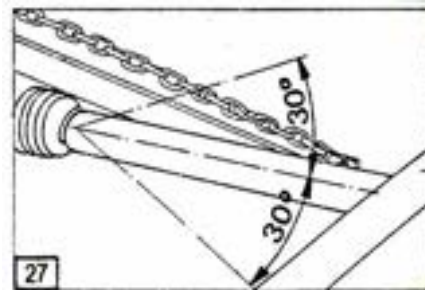
5. Clean and grease, Figure 25. Connect the PTO shaft to complete the operation.



6. Never remove or allow PTO shaft guard to rotate. Hang the guard chain on the PTO shaft guard, Fig. 26.



7. The maximum permissible angle of deflection of the PTO shaft may not exceed 30 degrees. Figure 27.



**ATTENTION: ALWAYS EXERCISE CAUTION WHEN HANDLING THE MOWER PTO SHAFT.**

## ADJUSTING THE MOVING MECHANISM



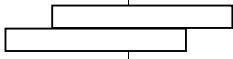
The rotary mower is equipped with a moving mechanism allowing the machine to be moved to either side with respect to the tractor centre line. This enables the user to cultivate the soil as close to crops as possible.

To perform the moving – adjusting operation:

- Loosen two screws securing the movable frame.
- Move the “three-point” frame to the desired side (the transmission shaft is protected with a guard).
- Retighten the locking screws on the movable frame.

### The mower is ready for operation!

The maximum moving distances for each side are given in the table on page 28 for different swath widths.

TYPE			
	m	m	m
FPM 619 091	1.65		
FPM 619 992	1.45	39	106
		70	75
FPM 612 729	1.25	39	86
		60	65
FPM 619 982	1.05	39	66
		50	55

**Figure 28. Position of the mower rotor relative to the rear tractor wheels.**

## STORING THE MOWER

- If the mower is put out of operation for a longer period of time, remove all dirt and grass accumulated on the mower parts that come into contact with them. Pay particular attention to the inside of the protective canvas and coupler.
- Wash the machine thoroughly after cleaning.
- Discharge the oil from reduction gear and side-mounted transmission, and fill them with clean oil to the required level. (Dispose of the waste oil in accordance with the environmental regulations.)
- Carefully remove excess oil with a cloth.
- Tighten all screws and nuts on the machine.
- Clean rusty spots and apply protective paint to all exposed surfaces.
- Raise the machine onto a wooden platform under a roof or in a separate dry room.
- If the above operations are performed with due care, the machine will remain mobile and ready for operation.

## STORING THE JOINT COUPLING — PTO SHAFT

- Check the PTO shaft joint at least once a year, and preferably after the end of the season.
- Check the permissible safety torque in the nearest service centre.
- When checking the joint, always use the PTO shaft manual supplied with the shaft.



IMT FABRIKA MAŠINA I ORUDA  
"STANDARD" AD BOLJEVAC

obrazac 1

Broj 1161  
2003.

## UVERENJE

PRIMENJENE SU MERE ZAŠTITE NA RADU

Naziv: Rotacione mašine za obradu zemljišta

Vrsta, tip i namenaz: Zadržje sačuno oruđe, sa rotacijom sa horizontalnom osovin obratnja, za obradu zemljišta:  
IMT 619 982 - radni zahvat 1,45 m.  
IMT 612 729 - radni zahvat 1,25 m.  
IMT 619 982 - radni zahvat 1,05 m.

Godišna proizvodnja: 2003.

Tehnički podaci: Gumna mašina radnog zahvata 1,45, 1,25, 1,05, brzina kretanja u radu 0,6 - 1,2 m/s, broj obrtaja motora od 2000 min<sup>-1</sup>, i dubina obrade 0,20 m u dva prelaza, potrebna snaga traktora od 25 KW i više, masa od 200 kg, 190 kg do 180 kg.

Spisak priložene dokumentacije: Uputstvo za rukovanje, održavanje i bezbedan rad sa rotacionom sitilicom, servisa knjizica i garantni list.

NAPOMENA: Rotacione sitilice korisnici prena spustava za rukovanje i održavanje, u zemi rada ne smije da se nalaze lica ili životinje. Apolutno je zabranjeno da sitilicom koriste nestručne osobe, ili osobe koje nisu sa odgovarajućim pedagoško-teorijskim osposobljenostima.



Ovlašćeno lice  
*[Signature]*



IMT PAK "STANDARD" AD BOLJEVAC  
Darda Stanojevića 25  
19370 Boljevac  
Sretnja i Crna Gora

## IZJAVA O USAGLAŠENOSTI 98/37/CE

Ovim izjavljamo, u okviru naše odgovornosti, da je proizvod

Tip: Rotaciona sitilica  
Model: IMT 619 982 - radni zahvat 1,05 m  
IMT 612 729 - radni zahvat 1,25 m  
IMT 619 932 - radni zahvat 1,45 m  
Godišna proizvodnja: 2004

u saglasnosti sa bezbednosnim zahtevima utvrdjenim od strane Evropske Direktive 98/37/CE.  
Proizvod je u saglasnosti sa sledećim standardima:

OPIS	STANDARD
Bezbednost mašina - Osnovni pojmovi, opšti principi za konstruisanje - Deo 1: Osnovna terminologija i metodologija	EN 292-1:1996
Bezbednost mašina - Osnovni pojmovi, opšti principi za konstruisanje - Deo 2: Tehnički principi i specifikacije	EN 292-2:1996
Bezbednost mašina - Bezbednosne granice koje definišu zone opasnosti kod mašina	EN 294:1997
Pogodniverodna mehanizacija - Mašine za obradu zemljišta sa pogonjenim alatima - Bezbednost	EN 708:1996
Pogodniverodna mehanizacija - Mašine za obradu zemljišta sa pogonjenim alatima - Bezbednost - Dopuna 1	EN 708:1996/A1:2001

U Boljevacu,

05.02.2004.



Ovlašćeno lice  
*[Signature]*

## USER WARNING

It is extremely important that the PTO shaft connected to your mower has the right dimensions. Therefore, you must provide a PTO shaft with the following properties:

- Grooves acc. to 35 JUS M.L1.601 on both shaft ends
- Continuous torque  $M_r = 800 \text{ Nm}$

The PTO shaft is produced by “BONDIOLI & PAVESI” and may be procured under the PO number:

**710 3 061 CE 007 007**

or: PTO shaft “WALTERSCEID”, PO number:

**W 200E SD 15 610 201000 20100**



**IMPORTANT:** The manufacturer may not be held liable for damages to or breakages of the tractor, PTO shaft, or the rotary mower in case of failure to comply with the above warning.



**ATTENTION:**

- 1. ALWAYS USE A CAB TRACTOR FOR DRIVER SAFETY.**
- 2. NEVER WEAR CLOTHING THAT MAY GET CAUGHT IN THE PTO SHAFT OR OTHER ROTATING PARTS.**
- 3. NEVER TRANSPORT OTHERS ON THE TRACTOR OR MOWER.**
- 4. IT IS RECOMMENDED THAT A MECHANIC OF THE FPM AGROMEHANIKA AD BOLJEVAC INSPECTS THE MOWER CONDITION AND IN PARTICULAR THE CUTTERS AND OTHER PARTS.**
- 5. ALWAYS FOLLOW THE INSTRUCTIONS GIVEN IN THIS MANUAL.**



## SPARE PARTS LIST

### - Operating and maintenance manual -

- To order spare parts or components, please contact our spare parts sales department.
- Accessories and equipment whose ID number starts with 1, as well as the assembly and operation manual should be ordered from the machinery sales department.

The pictures below show numbered machine parts.

The captions specify: the number of the machine part, its ID number, quantity in the mower assembly, and, if necessary, size, the applicable standard and the required tightening torque. This spare parts list is prepared for two mower ranges. Make sure to order parts for the mower you own. Please also observe additional descriptions.

**In order to avoid misunderstandings and wrong delivery, always specify the following information when ordering parts:**

- machine name and number (series, №)
- name and number of the spare part (as per this list)
- quantity of the required spare parts
- desired delivery method (by mail, express post, etc.)
- customer's full address (including zip or postal code)



Imprinted on your machine's nameplate shown in this picture are series and factory number.

In order to resolve your warranty claim, we need the series and factory number information. Please enter these numbers immediately upon machine delivery in the original manual.



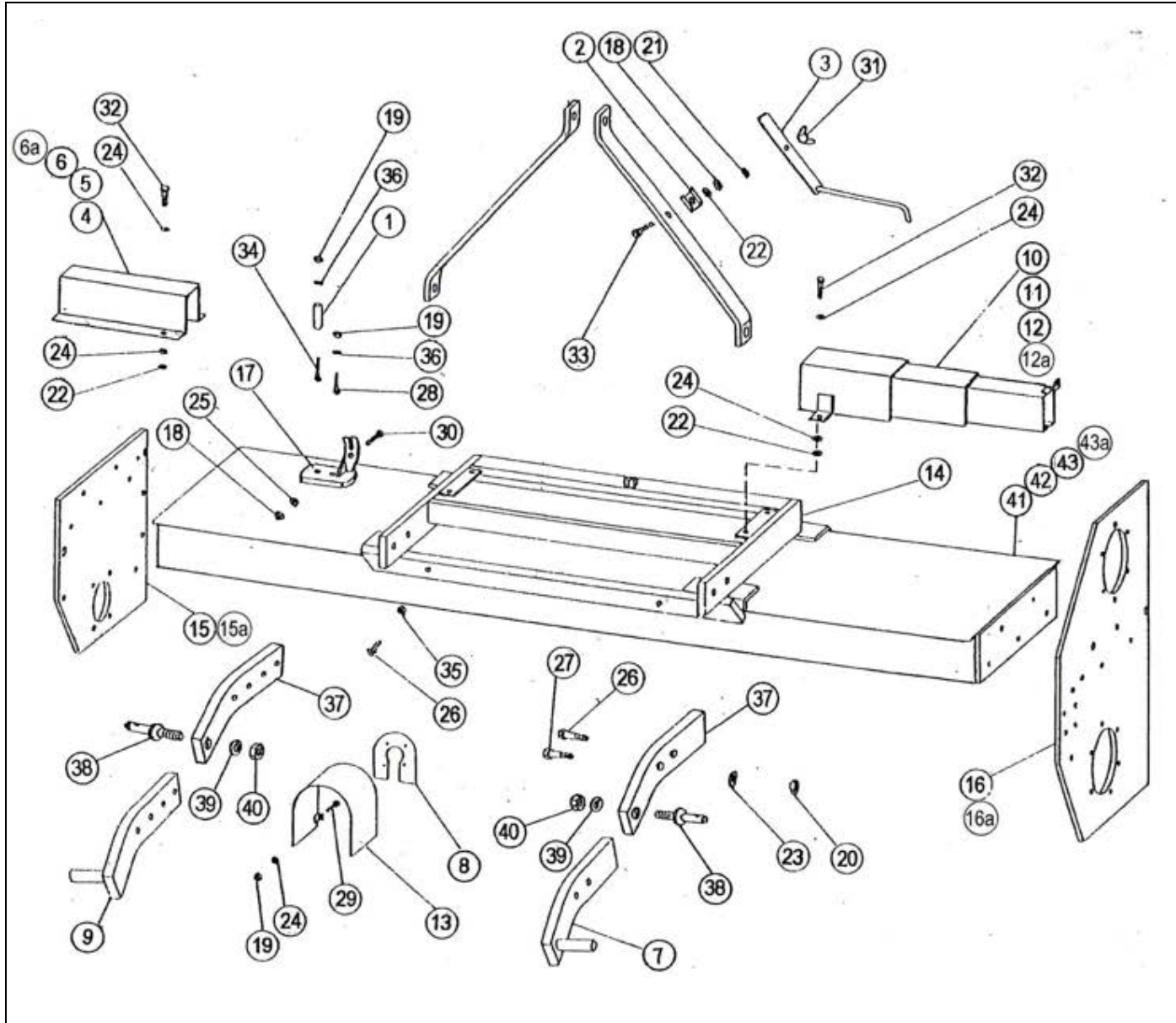
### ABBREVIATED DESIGNATIONS

<b>DNO</b>	Additional non-essential equipment
<b>:</b>	For ....
<b>&lt; &gt;</b>	Except ....
<b>&gt;</b>	From .... to ...
<b>Zam</b>	Replaces ....
<b>∅</b>	Diameter
<b>&gt;   &lt;</b>	Thickness
<b>T1N</b>	For vineyard tractors
<b>T1</b>	For tractors of category 1
<b>T2</b>	For tractors of category 2
<b>T3</b>	For tractors of category 3

<b>Q</b>	Number of items (quantity), if required
<b>*</b>	See note
	Direction of movement
	Direction of rotation
	Parts and components package
<b>ZA</b>	Replaceable with one or multiple parts
<b>D.P</b>	Washer thickness
<b>DPS</b>	Washer thickness for reducing clearance



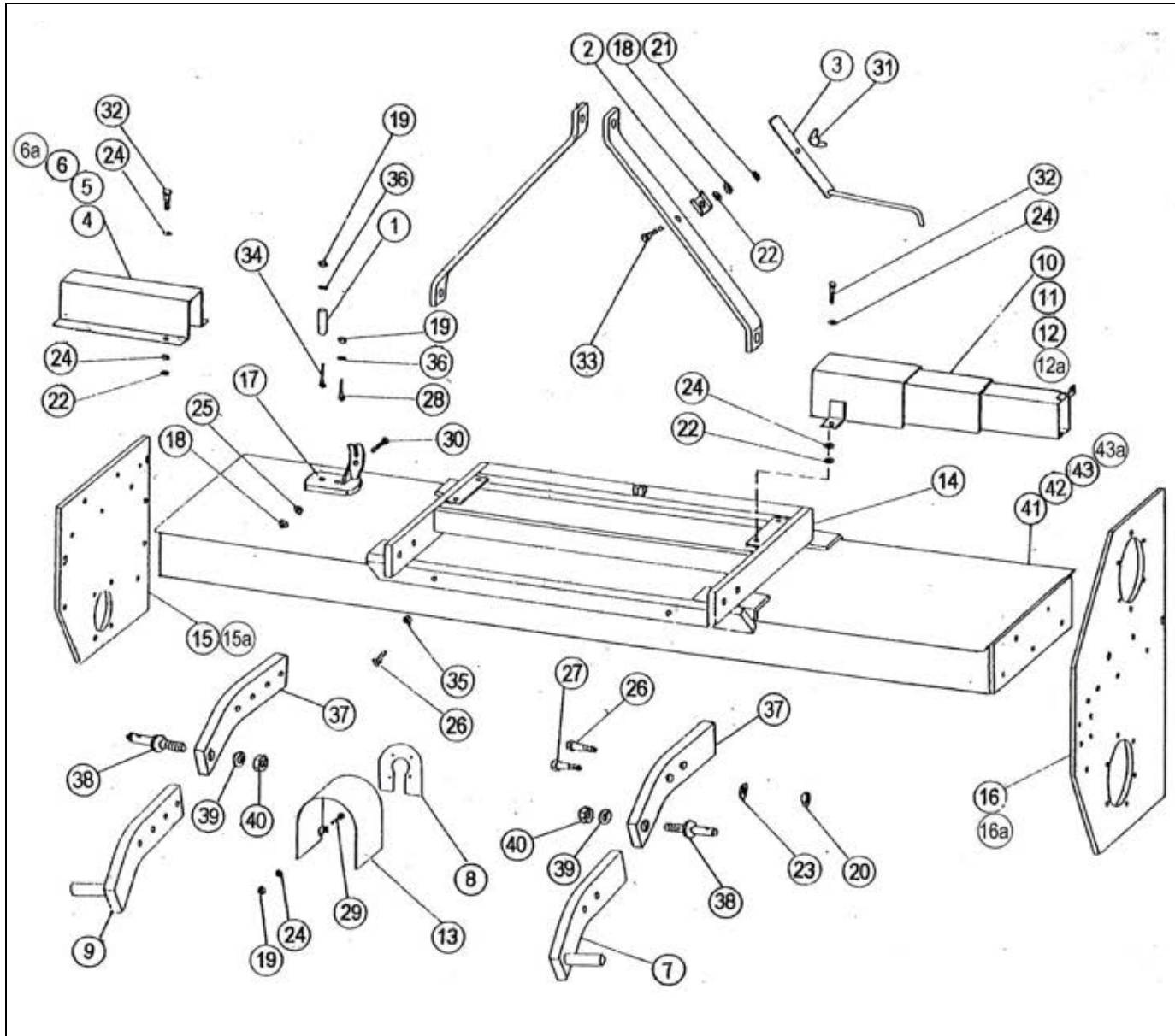
# ASSEMBLY: SUPPORT FRAME



## IDENTIFICATION NUMBER FOR ORDERING

1	612 01 478	1	
2	619 81 008	1	
3	619 81 045	1	
4	619 81 059	1	L=1.25 m
5	619 81 061	1	L=1.05 m
6	619 81 154	1	L=1.45 m
6a	619 81 340	1	L=1.65 m
7	619 81 080	1	Zam
8	619 81 081	1	
9	619 81 085	1	Zam
10	619 81 100	1	L=1.05 m
11	619 81 105	1	L=1.25 m
12	619 81 105	1	L=1.45 m
12a	619 81 360	1	L=1.65 m
13	619 81 113	1	
14	619 81 114	1	
15	619 81 127	1	
15a	619 81 334	1	L=1.65 m
16	619 81 128	1	
16a	619 81 336	1	L=1.65 m
17	619 81 133	1	
18	000 00 060	2	M8
19	000 00 061	5	M10
20	000 00 062	4	M12
21	000 00 065	1	8
22	000 00 066	4	12
23	000 00 072	4	12
24	000 02 493	12	10
25	000 03 865	1	10
26	000 04 796	4	M12x55
27	000 05 807	2	M12x65
28	000 05 825	1	M10x30
29	000 08 114	3	M10x30
30	000 09 987	1	M8x25
31	000 10 661	1	M8
32	000 10 717	4	M10x16

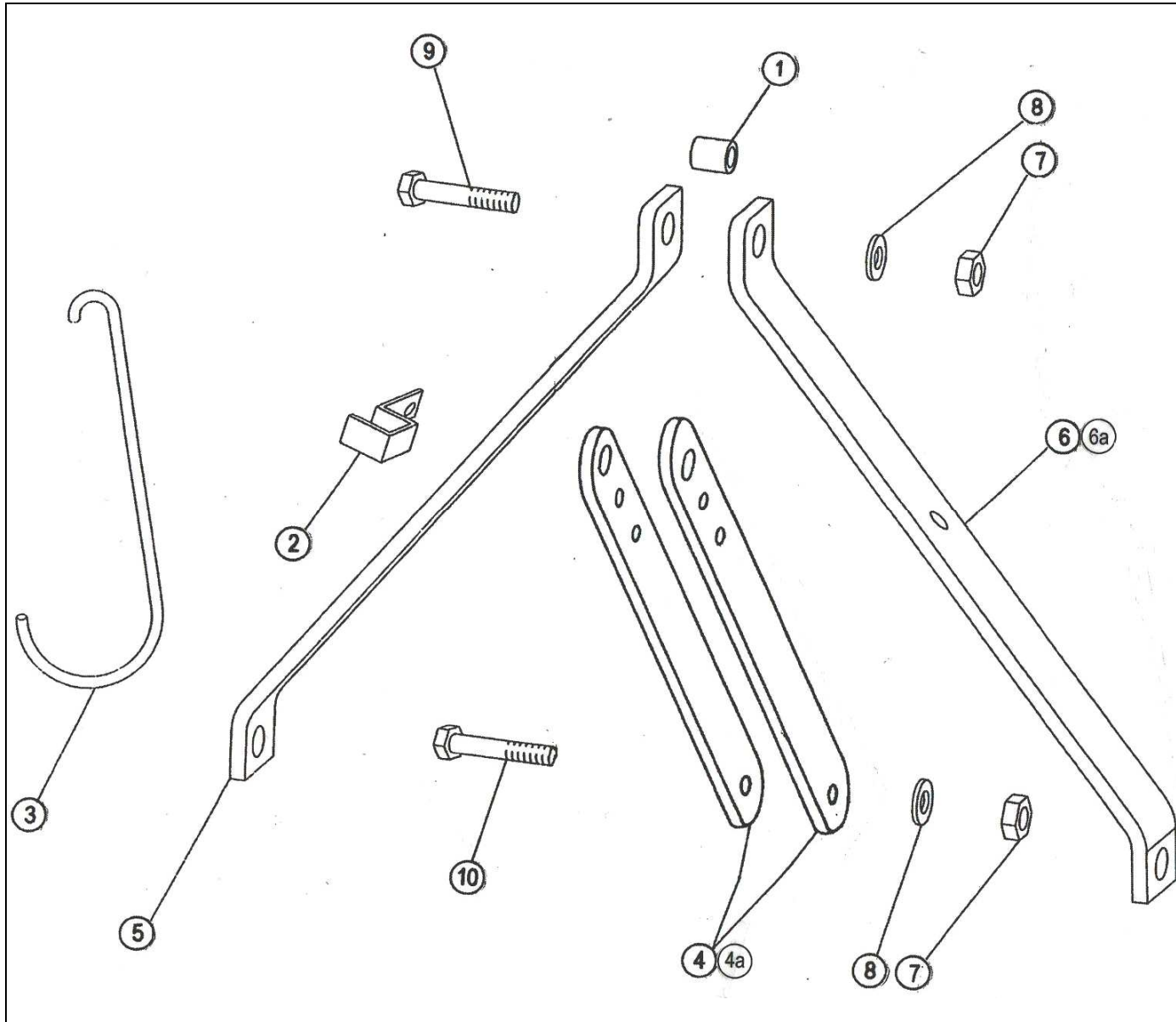
# ASSEMBLY: SUPPORT FRAME



## IDENTIFICATION NUMBER FOR ORDERING

33	000 12 870	1	M8x50
34	000 12 923	1	M10x90
35	000 15 122	2	M12
36	000 23 240	2	10
37	619 81 091	2	
38	619 81 046	2	
39	000 05 442	2	20
40	000 04 641	2	M20x1.5
41	619 81 125	1	L=1.05 m
42	619 81 120	1	L=1.25 m
43	619 81 155	1	L=1.45 m
43a	619 81 335	1	L=1.65 m

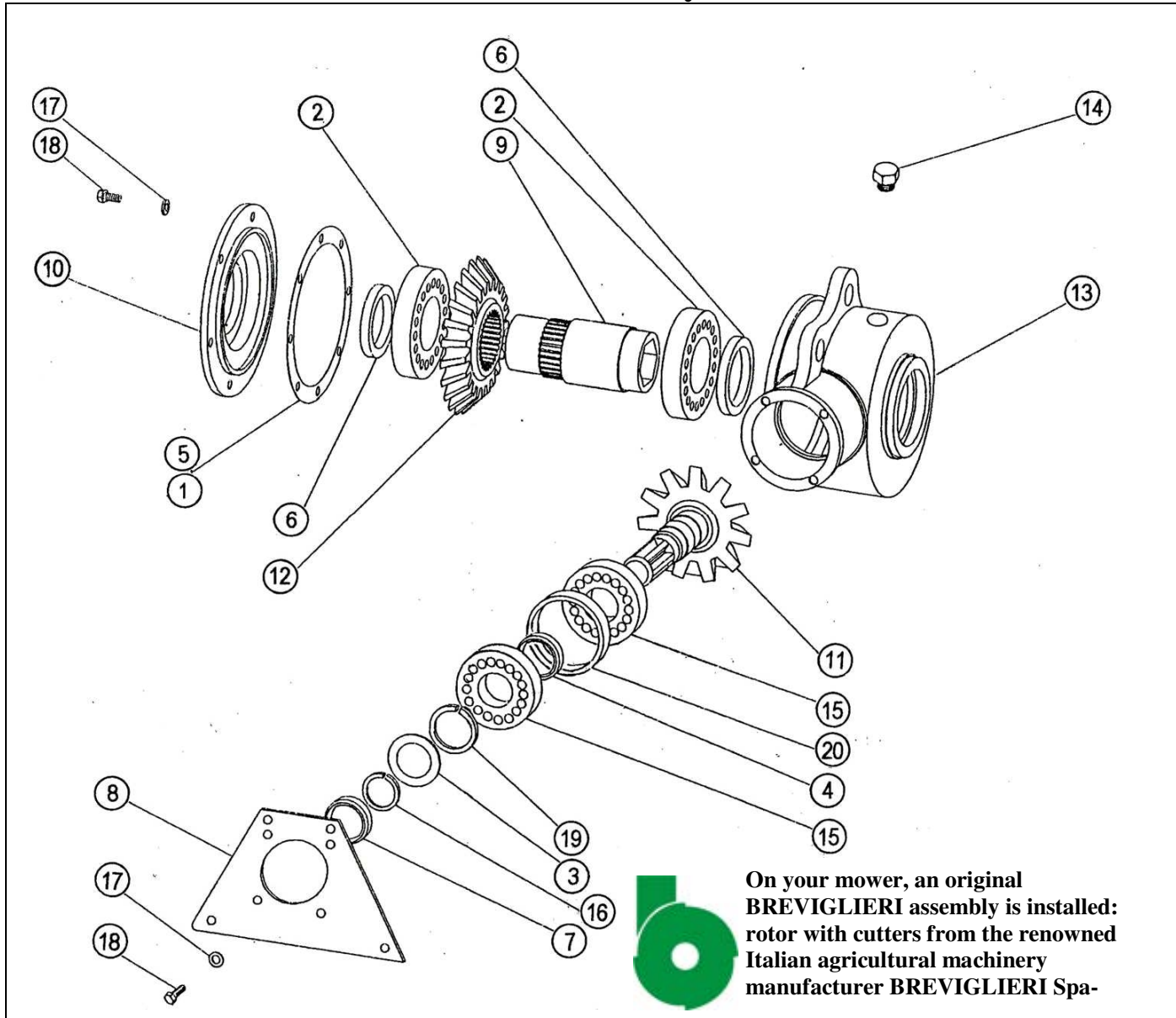
# ASSEMBLY: PYRAMID



## IDENTIFICATION NUMBER FOR ORDERING

1	612 01 478	1	
2	619 81 009	1	
3	619 81 066	1	
4	619 81 077	2	
4a	619 81 338	2	
5	619 81 078	1	
6	619 81 079	1	
6a	619 81 339	1	
7	000 00 062	2	M12
8	000 00 072	2	12
9	000 07 945	1	M12x100
10	000 08 211	1	M12x80

# ASSEMBLY: REDUCTION GEAR – assembly



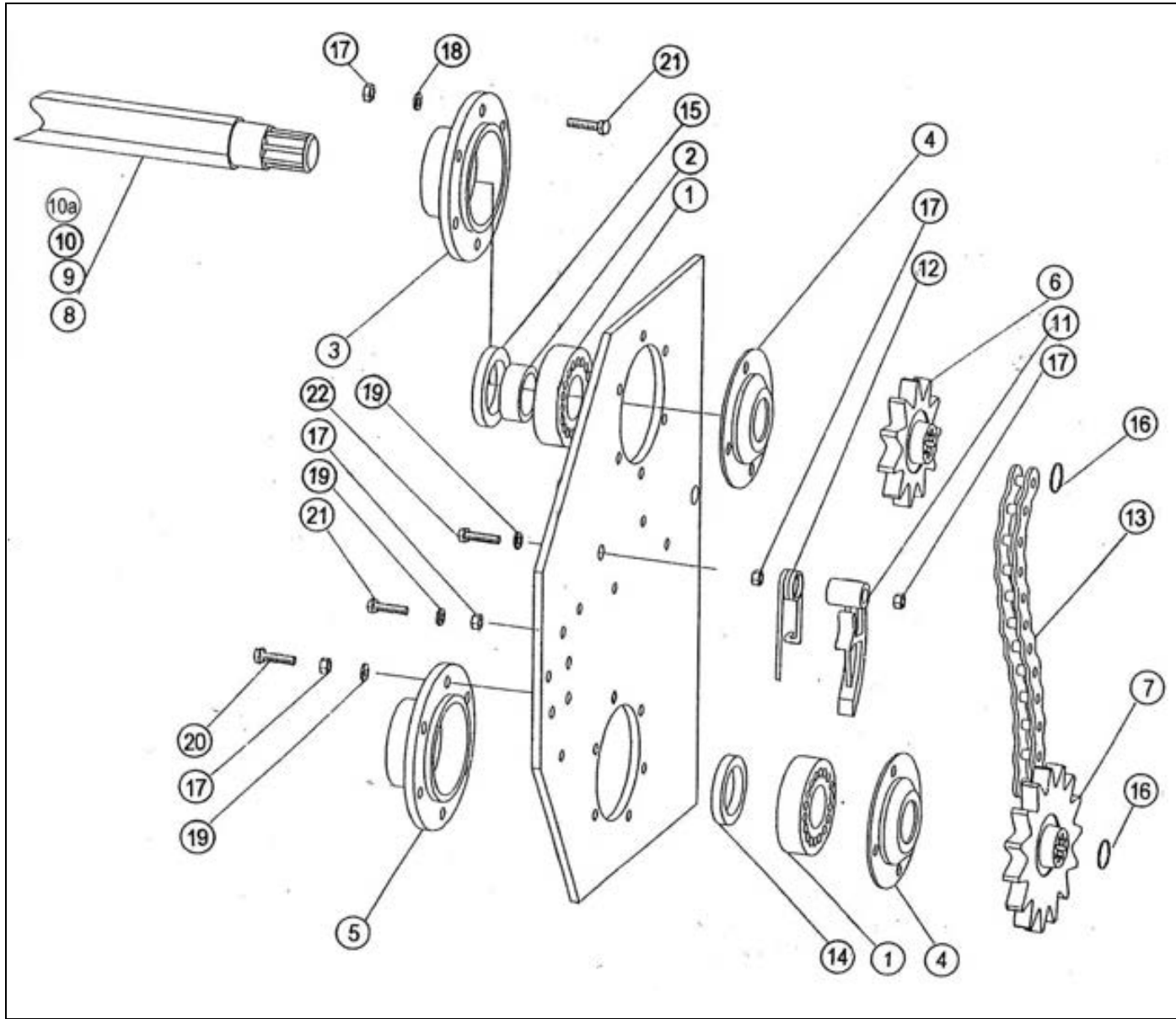
## IDENTIFICATION NUMBER FOR ORDERING

1	619 81 006	1	
2	619 81 014	2	
3	619 81 016	1	
4	619 81 017	1	
5	619 81 018	1	
6	619 81 042	2	
7	619 81 043	1	
8	619 81 082	1	
9	619 81 083	1	
10	619 81 084	1	
11	619 81 103	1	
12	619 81 107	1	
13	619 81 131	1	
14	627 14 624	1	
15	627 14 773	2	
16	850 17 005	1	
17	000 00 071	8	10
18	000 02 191	8	M10x25
19	000 04 233	1	72
20	619 81 152	1	

On your mower, an original BREVIGLIERI assembly is installed: rotor with cutters from the renowned Italian agricultural machinery manufacturer BREVIGLIERI Spa-



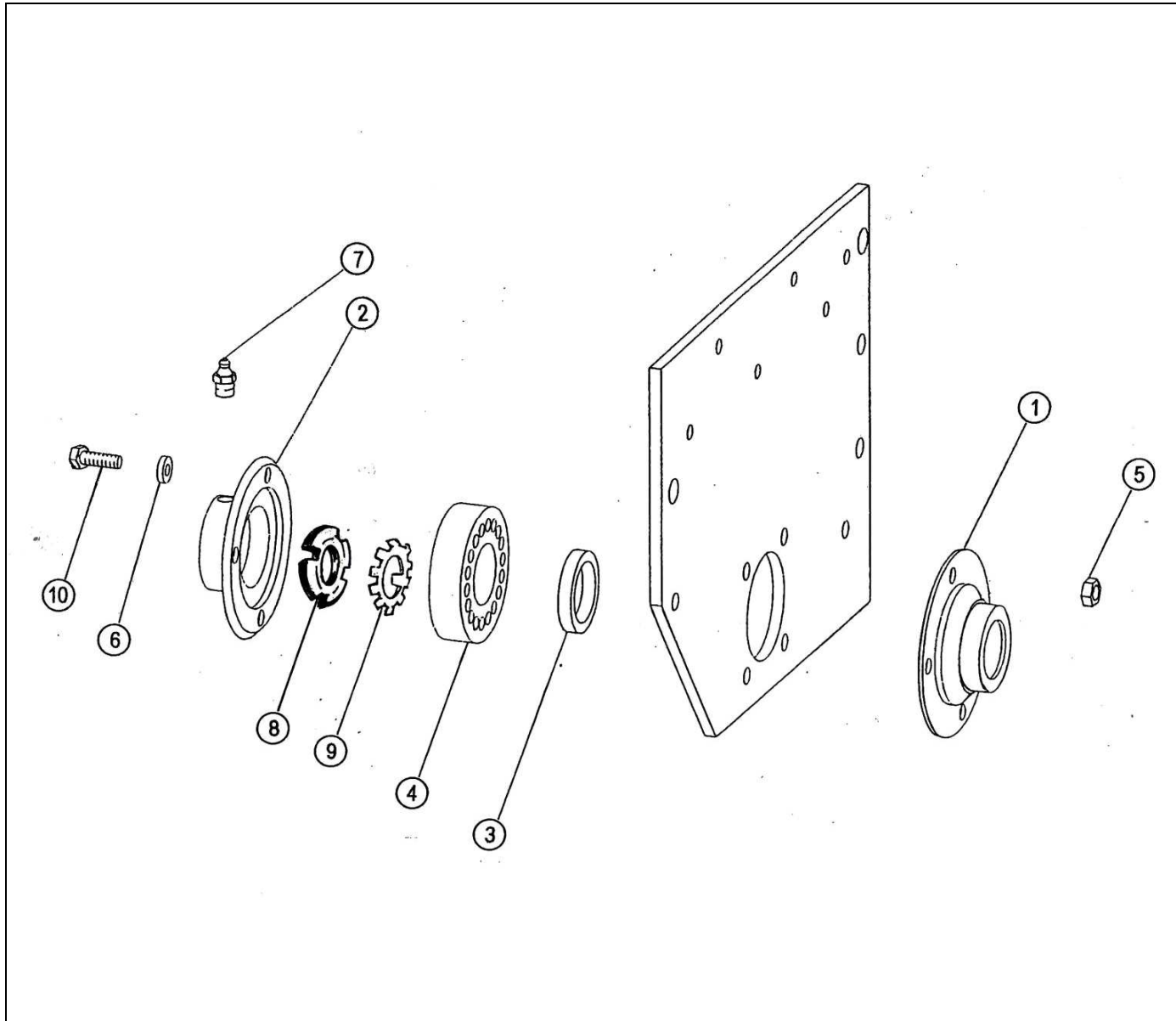
# ASSEMBLY: SIDE-MOUNTED TRANSMISSION



## IDENTIFICATION NUMBER FOR ORDERING

1	619 57 020	2	
2	619 81 036	1	
3	619 81 053	1	
4	619 81 054	2	
5	619 81 055	1	
6	619 81 062	1	
7	619 81 063	1	
8	619 81 069	1	L=1.05 m
9	619 81 071	1	L=1.25 m
10	619 81 157	1	L=1.45 m
10a	619 81 345	1	L=1.65 m
11	619 81 074	1	
12	619 81 076	1	
13	619 81 106	1	
14	619 81 136	1	
15	619 81 142	1	
16	850 17 005	1	
17	000 00 061	12	M10
18	000 00 071	1	10
19	000 02 493	18	10
20	000 08 114	7	M10x30
21	000 12 822	2	M10x45
22	000 15 042	1	M10x60

# ASSEMBLY: LATERAL SIDE

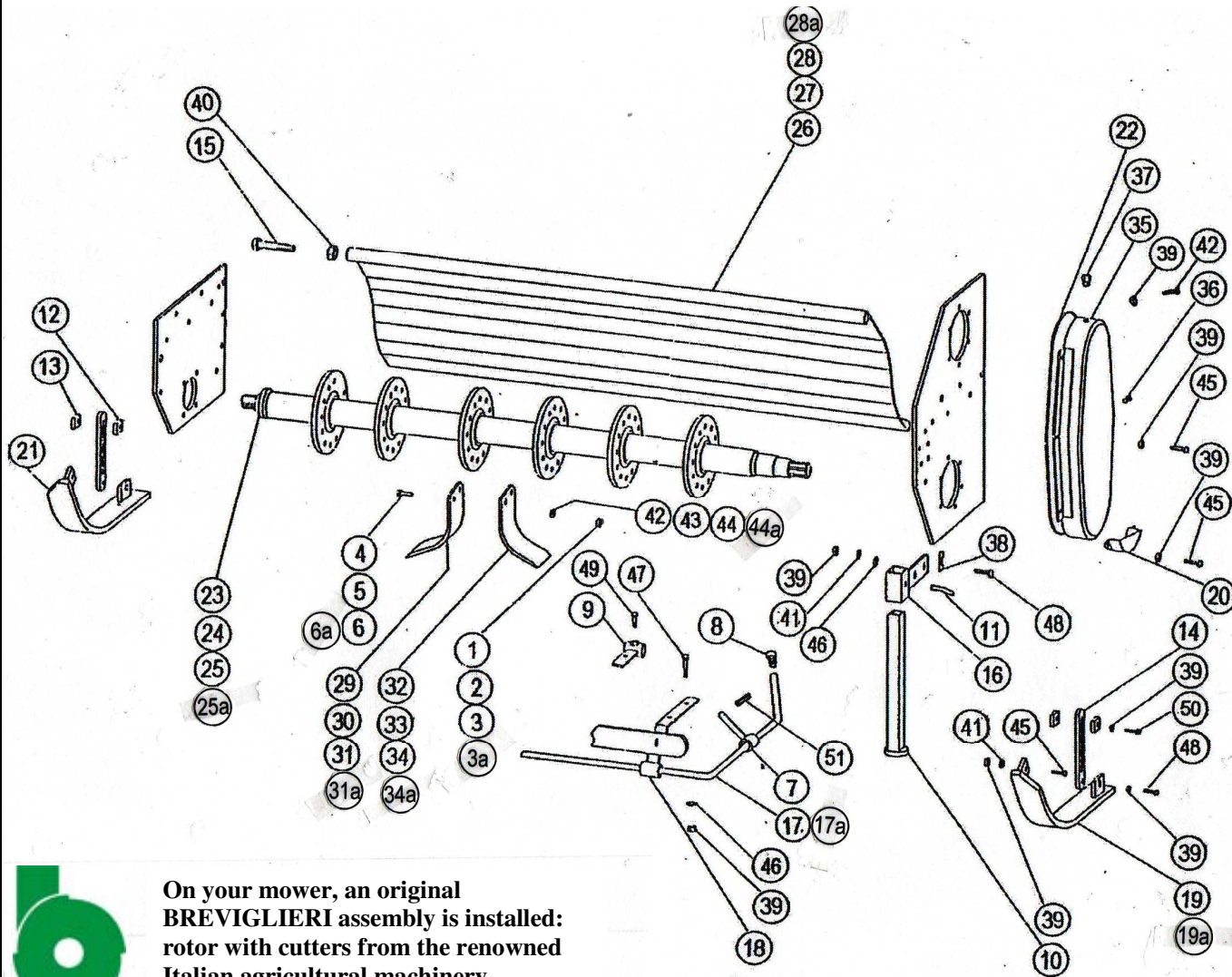


## IDENTIFICATION NUMBER FOR ORDERING

1	619 81 050	1	
2	619 81 052	1	
3	619 81 136	1	
4	627 14 594	1	
5	000 00 061	4	M10
6	000 00 071	4	10
7	000 02 392	1	AM6
8	000 05 327	1	
9	000 05 336	1	30
10	000 12 881	4	M10x45



# ASSEMBLY: ROTOR WITH CUTTERS

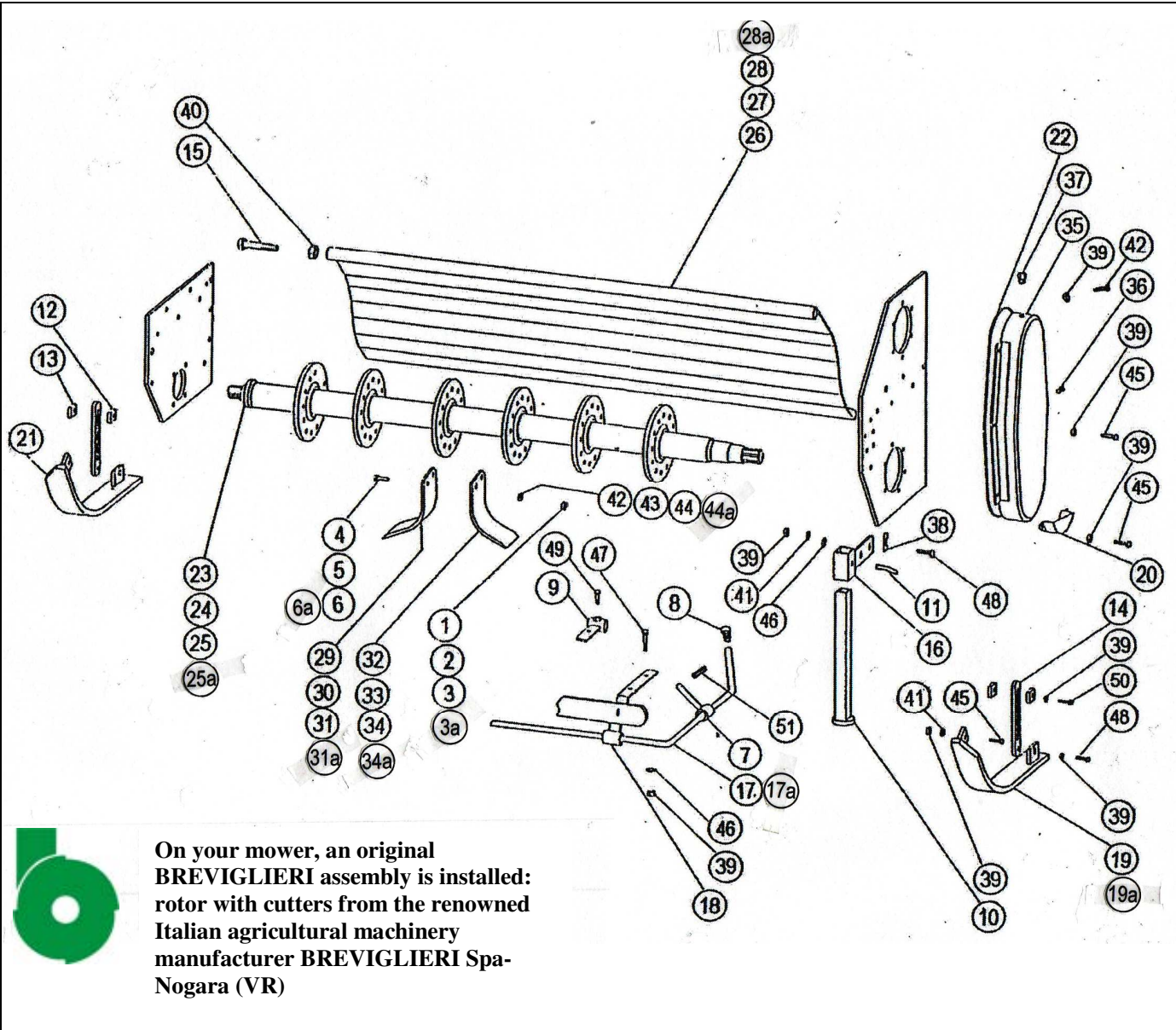


On your mower, an original BREVIGLIERI assembly is installed: rotor with cutters from the renowned Italian agricultural machinery manufacturer BREVIGLIERI Spa-Nogara (VR)

## IDENTIFICATION NUMBER FOR ORDERING

1	533 01 407	40	L=1.05 m
2	533 01 407	48	L=1.25 m
3	533 01 407	56	L=1.45 m
3a	533 01 407	64	L=1.65 m
4	612 01 587	40	L=1.05 m
5	612 01 587	48	L=1.25 m
6	612 01 587	56	L=1.45 m
6a	612 01 587	64	L=1.65 m
7	619 81 010	2	
8	619 81 013	4	
9	619 81 020	2	
10	619 81 030	1	
11	619 81 032	1	
12	619 81 033	2	
13	619 81 034	2	
14	619 81 035	2	
15	619 81 037	2	
16	619 81 040	1	
17	619 81 058	2	
17a	619 81 307	2	
18	619 81 060	2	
19	619 81 070	1	
19a	619 81 367	1	
20	619 81 072	1	
21	619 81 075	1	
22	619 81 104	1	
23	619 81 110	1	L=1.05 m
24	619 81 115	1	L=1.25 m
25	619 81 163	1	L=1.45 m
25a	619 81 355	1	L=1.65 m
26	619 81 118	1	L=1.05 m
27	619 81 119	1	L=1.25 m
28	619 81 158	1	L=1.45 m
28a	619 81 350	1	L=1.65 m
29	619 81 123	10	L=1.05 m
30	619 81 123	12	L=1.25 m

# ASSEMBLY: ROTOR WITH CUTTERS



On your mower, an original BREVIGLIERI assembly is installed: rotor with cutters from the renowned Italian agricultural machinery manufacturer BREVIGLIERI SpA-Nogara (VR)

## IDENTIFICATION NUMBER FOR ORDERING

31	619 81 123	14	L=1.45 m
31a	619 81 124	16	L=1.65 m
32	619 81 124	10	L=1.05 m
33	619 81 124	12	L=1.25 m
34	619 81 124	14	L=1.45 m
34a	619 81 123	16	L=1.65 m
35	619 81 126	1	
36	627 14 455	1	
37	627 14 624	1	
38	805 41 248	1	
39	000 00 061	26	M10
40	000 00 063	2	M16
41	000 00 071	4	10
42	000 00 072	40	12 - L=1.05
43	000 00 072	48	12 - L=1.25
44	000 00 072	56	12 - L=1.45
44a	533 01 407	64	12 - L=1.65
45	000 02 191	6	M10x30
46	000 02 493	6	10
47	000 05 825	4	M10x30
48	000 08 114	4	M10x30
49	000 09 797	12	M10x20
50	000 12 883	2	M10x50
51	000 10 691	2	6x30



**This machinery meets the safety requirements of the European Machinery Directive.**



**ATTENTION: THIS SYMBOL IS USED IN THIS MANUAL WHENEVER  
YOUR PERSONAL SAFETY IS CONCERNED. BE CAREFUL!**



**THE OPERATOR MUST OBSERVE ALL OCCUPATIONAL SAFETY AND HEALTH REGULATIONS, AS WELL AS ROAD SAFETY REGULATIONS. FOR PERSONAL SAFETY, USE ONLY ORIGINAL PARTS MANUFACTURED BY FPM AGROMEHANIKA AD - BOLJEVAC. THE MANUFACTURER MAY NOT BE HELD LIABLE FOR THE CONSEQUENCES OF IMPROPER USE OR FAILURE TO COMPLY WITH THE**



**FOR YOUR PERSONAL SAFETY AND  
FOR ACHIEVING BEST  
PERFORMANCE WITH YOUR MOWER,  
USE ONLY ORIGINAL PARTS  
MANUFACTURED BY**

**FPM AGROMEHANIKA AD**  
19370 Boljevac, Đorđa Simeonovića br.25  
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Service Department: 030/63 619  
Import/Export Department: +381 (0) 30 63531  
**FAX:** +381 (0) 30 63 777