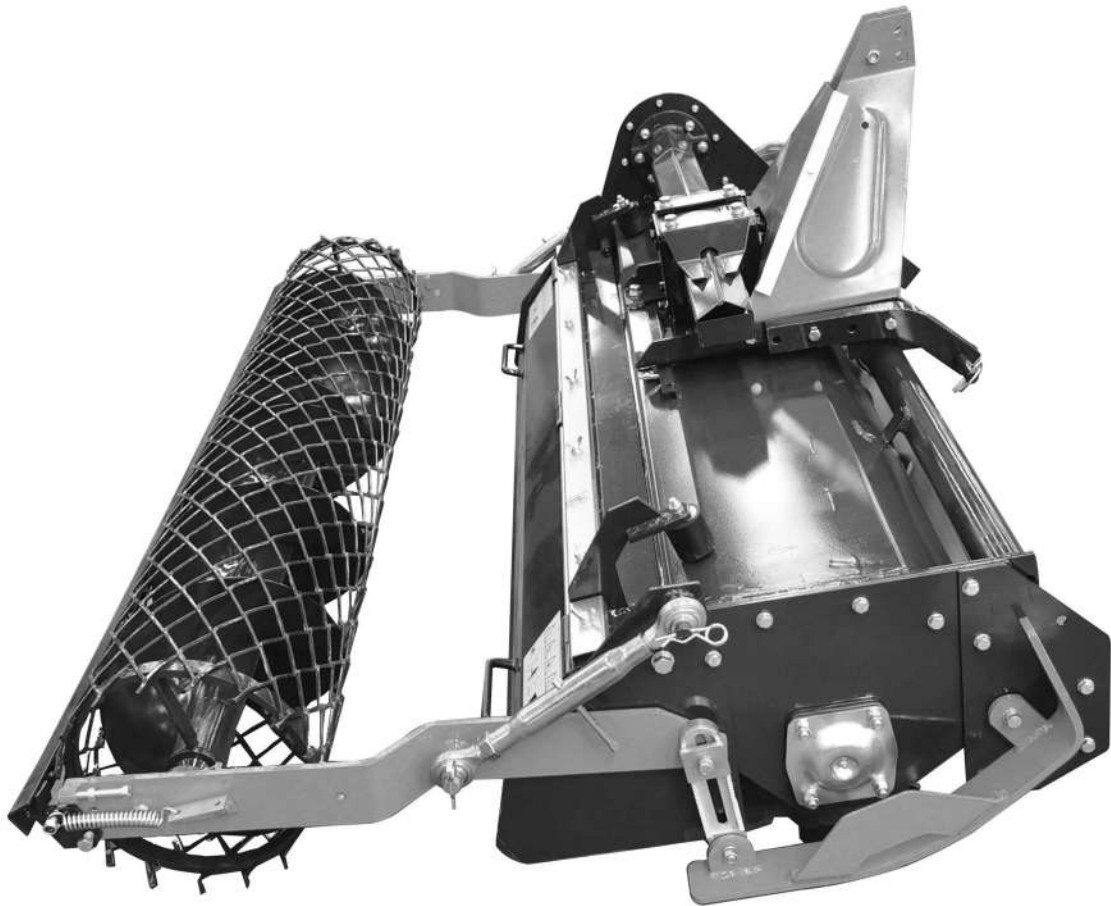


48-in Tractor Mounted Stone Burier

Model:TMG-SB60



0.1	Forward	2
0.2	Introduction.....	2
0.3	Staff.....	4
0.4	Disclaimer.....	4
1.	Identification data.....	4
1.1	Foreword.....	4
1.2	Identification data.....	5
1.3	Main parts.....	5
1.4	Safety devices.....	6
1.5	Work stations.....	8
1.6	Noise.....	8
1.7	Vibrations.....	8
2.	Safety regulations.....	9
2.1	General safety regulations.....	9
2.2	Regulations for use of the driveline.....	9
2.3	Starting regulations.....	12
2.4	Regulations for correct use of the operating machine.....	13
2.5	Regulations for transit on public highways.....	15
2.6	Instruction for maintenance technicians.....	16
2.7	Prescriptions relating to the hydraulic system.....	17
2.8	Text regulations.....	17
2.9	Warning and danger plates and stickers.....	18
3.	Testing, delivery of the machine	
3.1	Testing.....	21
3.2	Delivery and handling of the packed machine.....	21
3.3	Packing size and weight.....	22
4.	Hitching to the tractor.....	22
4.1	Preliminary instructions on use of the machine.....	22
4.2	Coupling the machine to the tractor.....	24
4.3	How to shorten the driveline.....	26
5.	Use of the machine.....	28
5.1	Instructions on road circulation.....	28
5.2	Preparing the implement for work.....	28
5.3	Use of the machine.....	30
5.4	Demounting the implement from the tractor.....	33
5.5	Working with the rotary tiller (proper use).....	33
5.6	Side movement of the rotary tiller.....	33
5.7	How to store the machine for long periods.....	35
6.	Technical features.....	36
6.1	Technical data.....	36
7.	Maintenance.....	36
7.1	Foreword.....	36
7.2	Inspections made in our factory.....	37
7.3	Inspections before use.....	38
7.4	Periodical inspections.....	38
7.5	How to carry out the required inspections.....	42
7.6	Lubricating and greasing points.....	45

7.7	Dismantling.....	46
7.8	Proper torque for fasteners.....	47
8.	Troubleshooting.....	48
8.1	Troubleshooting.....	48

0.1 - Forward

This manual covers both rotary hoes and stoneburiers.

Stoneburiers have reversed rotation, i.e. their rotor roller rotates in the opposite direction to the advancing motion, and thanks to their ability to bury stones (of a reasonable size) they are suitable for work on stony ground or where grass, weeds, crop residues etc need to be destroyed or buried to produce a flat surface.

The stoneburiers are not different from the traditional hoes in terms of the safety requirements or the general conditions of use, however you must always follow the manual's instructions exactly.

Below is a list of the sections containing information specific to the stone-burying hoes:

- paragraphs 3.3 and 6.2 - Dimensions and weight
- paragraph 5.5 - Permitted use
- paragraph 6.1 - Technical features.

0.2 - Introduction

The user of the rotary tiller (also called "implement" or "machine" in the text) is personally responsible for his own safety and that of any other people in the vicinity of the machine.

It is therefore essential for the user to possess detailed knowledge about how to use, service and correctly mount the machine on the tractor.

The figures and descriptions in this handbook give both users and maintenance staff all the basic instructions to comply with when using and servicing the machine.

The user is responsible for ensuring that connection to the tractor and use of the machine comply with the current provisions in merit.

The machine may only be used and serviced by persons who have become fully familiar with the contents of this manual, which should always be kept ready to hand. Users should become particularly familiar with chapter 2 concerning safety precautions.

Always comply with the given instructions.

Consult the After-Sales Service Center or your nearest dealer in case of doubt.

Note

This machine is consigned according to the warranty conditions valid at the moment of purchase.

The user must not tamper with the machine or make modifications to its parts since such action shall void the guarantee.

The manufacturer reserves the right to modify the machine specifications and performances without advance warning and declines all responsibility for any errors caused by incorrect installation or improper use of the equipment.

Contact or your nearest dealer if there are substantial differences between the implement and the indications in this handbook.

The standards that govern the guarantee are cited in the "Certificate of Guarantee" which is supplied to the user with this manual. The section in this certificate headed "testing and delivery" must be filled in, leaving no gaps, and sent to the address printed on it within 15 days of the delivery date. If this is not done, the guarantee is annulled.

The following symbols are used in the manual to call the reader's attention to various levels of danger.



Warns of an imminent danger situation which, if not avoided, will cause death or serious personal injury.



Warns of a potential danger situation which, if not avoided, could cause death or serious personal injury, including dangers that occur when the shields are removed.



Warns of a potential danger situation which, if not avoided, could cause slight personal injuries or moderate wounds.



Symbol used to advise the user about procedures able to improve use of the machine and lengthen its life, preventing damage and optimizing the job.



For explanatory purposes, some illustrations in this manual depict the implement or its parts with the protective guards or shields removed.

Never ever use the machine in the absence of its shields or the safety protections listed in paragraph 1.4.



To prevent serious personal injury or death:

- avoid dangerous manoeuvres or maintenance operations;
- never operate or work on the implement without having read and become fully familiar with the contents of this manual;
- if the manual is lost, contact your nearest dealer or the offices for a new copy.



References in this manual to the right side and left side of the machine mean to the right and left side of the operator seated in the tractor' s driving seat.

0.3 - Staff

Operator

The machine' s user must be an operator with a suitable technical background to enable him to understand the contents of this manual, including the diagrams found herein. The operator must be familiar with the main hygiene and accident prevention regulations, and also the tractor on which the rotary tiller is mounted.

He must be able carry out the tasks necessary for the functioning of the unit comprising the tractor and rotary tiller together and also the maintenance and everyday inspections.

The operator must always use the machine with all the protective guards in place and in good condition.

Mechanical maintenance staff

This must b a qualified technician who is capable of working on all the mechanical parts.

0.4 - Disclaimer

The stone burier has been built in compliance with the accident prevention regulations in force and therefore the manufacturer cannot be held responsible for damage resulting from:

- use of the machine with faulty or missing guards;
- improper use of the machine;
- use of the machine by untrained or unauthorized personnel;
- incorrect application of the rotary tiller on the tractor;
- lack of maintenance;
- unauthorized modifications or work carried out on the machine;
- use of non-original spare parts or those which are not specific to the machine;
- failure to observe all or some of the instructions contained in this manual;
- exceptional weather conditions.

1

Identification data

1.1 - Foreword

An exact description of the “machine model” and its “serial number” will en-sure quick and pertinent answers from our Technical Assistance Service.

Always exactly state the machine model in your possession together with its serial umber when contacting our offices or your nearest dealer.

We suggest you write the data pertaining to your machine in the following space.

Year of manufacture.....
Model.....
Serial number.....
Date of purchase.....

1.2 - Identification data

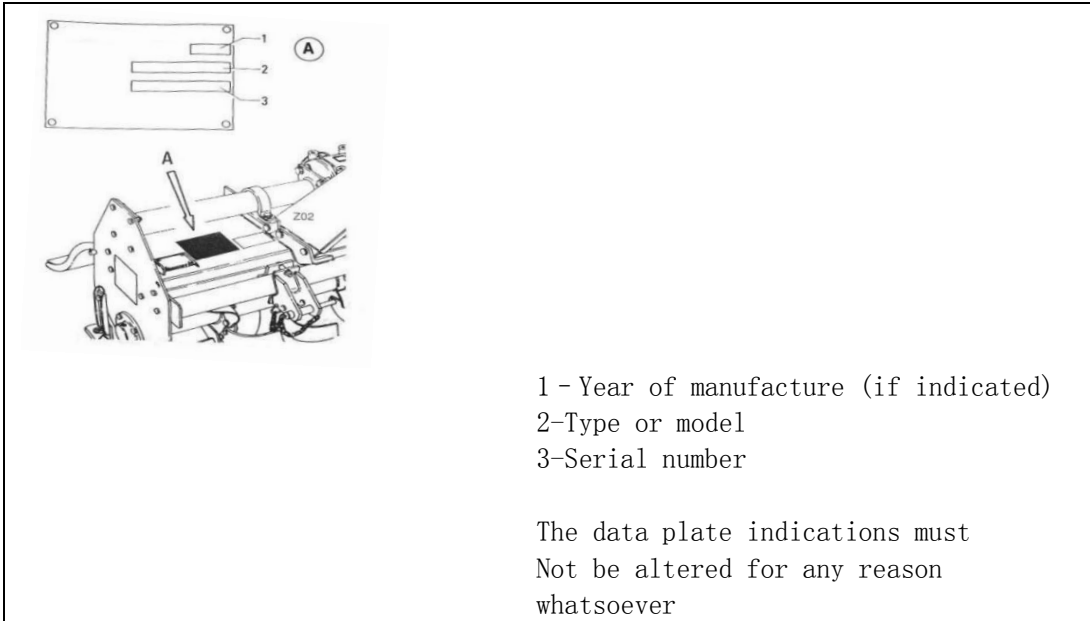


Fig. 1.2.1

1.3 - Main parts (fig. 1.3.1)

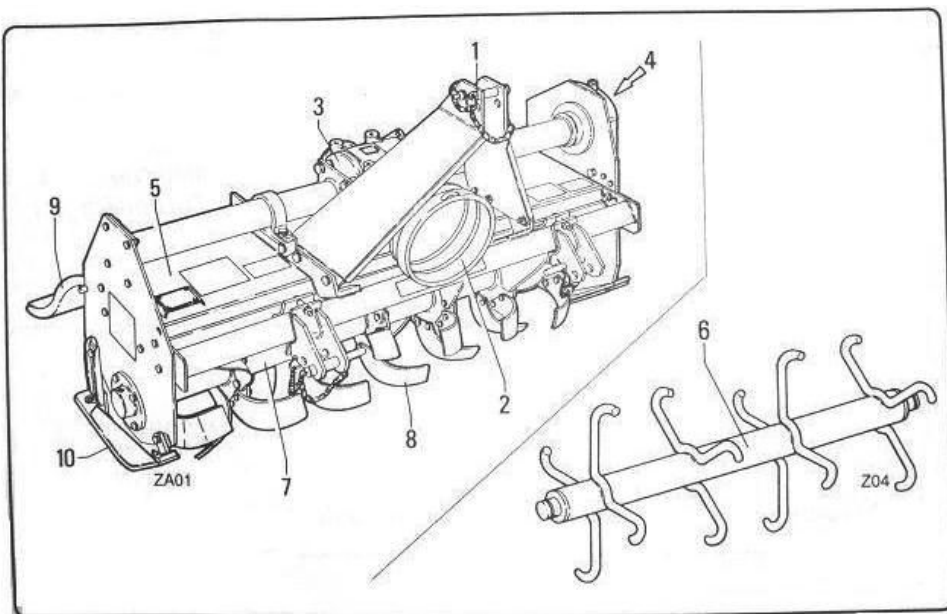


fig. 1.3.1

Key to the main parts in fig,1.3.1

- 1 - Three-point linkage used to couple the implement to the tractor.
- 2 - Pto shaft guard.
Prevents the user from coming into contact with the rotating part of the driveline engaged in the pto.
- 3 - Gearbox.
Reduces the rotation speed of the tractor pto.
- 4 - Drive transmission to the rotor shaft.
Drive output from the gear box is transferred to rotor "7" by means of the transmission chain.
- 5 - Chassis.
This is the bearing structure of the implement.
- 6 - Levelling roller(optional).
Adjusts the work depth of the tools.
As an alternative, some versions can be equipped with rear wheels that act in the same way as the leveling roller.
In alternative, the rotary tillers can be equipped with side skids" 10" .
Besides adjusting the work depth (as the leveling roller), these also act as a side protection.
- 7 - Rotor shaft.
The tractor drives the rotor shaft on which the tools are bolted by means of the gear box and transmission chain.
- 8 - Blades.
Soil crushing hoe blades are bolted to the flanges of the rotor shaft. They can be of various type according to the machine version and model.
- 9 - Rear hood (fig. 1.4.1).
The hood is mobile and is used to contain and level the soil crushed by the blades.
- 10 - Side skids
When installed, these allow the work depth of the blades to be adjusted.
They also act as important side guards.

1.4 - Safety devices



In compliance with the current pro-visions in force, your machine has been equipped with safety protections to safeguard the operator and any other people in the vicinity. Never ever tamper with the safety devices. Such action could cause serious injury to the operator and to others.

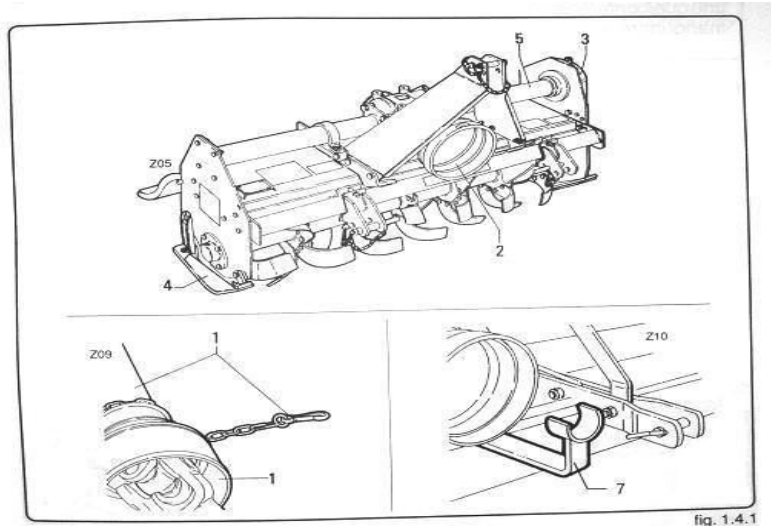


fig. 1.4.1

- Key to the safety devices (fig. 1.4.1)



For transport reasons, the accident prevention guards are supplied demounted from the machine and accompanied by instructions for their assembly. When the machine arrives, the user shall correctly assemble the guards, taking care to fully tighten all fastening elements.

It is forbidden to use the machine unless all the necessary and supplied guards have been mounted.

- 1 - Driveline shield.
The driveline is supplied with adequate plastic shields and relative fixing chains.
- 2 - Pto shaft guard.
There is a cowling to protect the spinning end of the cardan shaft where this couples to the gearbox of the machine.
- 3 - Drive chain guard.
It prevents the access to the gears and to the drive chain.
- 4 - Side skids.
Prevent material from being thrown up or a limb from being accidentally caught under the implement.
- 5 - Axle shaft guard.
Prevents contact with the moving shaft.
On some versions, this guard can be removed while on others it is fixed to the gearbox.

Note

The following components are only supplied in the states where it is obligatory to affix and use the CE conformity mark for industrial products.

6 - Barriers.

Safety bars or panels to prevent users from approaching dangerous parts of the machine.

The shape and size of these barriers vary according to the machine model.

7 - Driveline support.

Having detached the driveline from the tractor, the shaft itself can be placed on this support to prevent it from slipping and dropping.

1.5 - Work stations

When working with the machine, the operator must only seat in the driving seat of the tractor used to tow the implement.

No one else may approach the machine. Since objects thrown up by the machine may represent a hazard, the operator should always keep at a due distance from persons, built-up areas, etc.

Leave the driver's position only after having:

- disengaged the power takeoff;
- inserted the brake;
- turned off the engine;
- removed the ignition key from the dashboard.

- Noise

Measurements of the noise issued by the machine indicate that the equivalent noise level is such as to maintain the daily level to which the operators are exposed within a value of less than 70 dBA.

This measurement was made with a sound level meter set at a distance of about 1.6 m from the machine and at a height of 2 m, operated (no-load) at a pto rotation rate of 450 rpm on grassy land.

Please also note that the machine is normally used outdoors and that the position occupied by the operator is seated in the driving seat of the tractor.

Also consult the prescriptions listed in the tractor use and maintenance manual.

1.7 - Vibrations

During normal operation, the machine will not transmit appreciable vibrations to the tractor or, thus, to the operator. These vibrations are less than 2.5 m/sec^2 to the operator's upper limbs and less than 0.5 m/sec^2 to the seated part of the operator's body.

Consult the tractor manual for the vibrations transmitted by the tractor itself.

2

Safety regulations

2.1 - General safety regulations



This machine must only be used for the purpose for which it was designed and tested. Permitted uses are indicated in paragraph 6.3.

Moreover, it must only be used with a suitable tractor, see par. 4.1 and driven by an adequate driveline driven by the tractor PTO.

All other use is strictly prohibited.

Users should become thoroughly familiar with the contents of this manual before using, servicing, mounting the implement on the tractor and all other pertinent operations.



Never wear jewellery, loose clothing such as ties, scarves, belts, unbuttoned jackets or dungarees with open zips which could become caught up in moving parts.

Always wear approved garments complying with accident prevention provisions such as: nonslip shoes, ear muffs, goggles and gauntlets.

Wear a jacket with reflecting stickers if the implement is used during the evening near public highways.

Consult your dealer, the “Labour Health Service “ or your nearest equivalent authority for information about the current safety provisions and specific regulations to comply with in order to ensure personal safety.

2.2 - Regulations for use of the driveline



The machine may be supplied with a driveline complete with shields able to ensure the operator’s safety (see paragraph “1.4”).

Keep the non-rotation shields efficient and in a good condition. If their condition is poor, they should be changed before the implement is used.

Unless it is correctly protected, the driveline could even cause the user’s death since it can catch on parts of the body or clothing.

Always check that the shields are installed and perfectly efficient before using the machine.

Check that they are well fixed and correctly inserted into their housings. Check that the retaining chains are correctly fixed to the tractor or machine **in order to prevent** the shields from turning together with the driveline.

Take great care to prevent the shields from being damaged when the implement is coupled and released from the tractor.



Keep the grooved parts perfectly clean and greased so that they are able to correctly slide.

Besides being described in this manual, the method by which the driveline is coupled must also be checked out with the instructions in the tractor manufacturer' s manual.

The correct rotation speed of the tractor pto is indicated on the pto shaft guards of each machine.

This rate is usually 540 or 1000 rpm. Always comply with the indicated speed.

The following items are applied to the driveline (if delivered with the machine):

- a danger sticker on the shaft guard (fig. 2.2.2);
 -
 - a danger sticker on the driveline which becomes visible if the shield is damaged or missing (fig. 2.2.4).
 -
- Strictly comply with the instructions on the sticker.



fig. 2.2.1



fig. 2.2.2

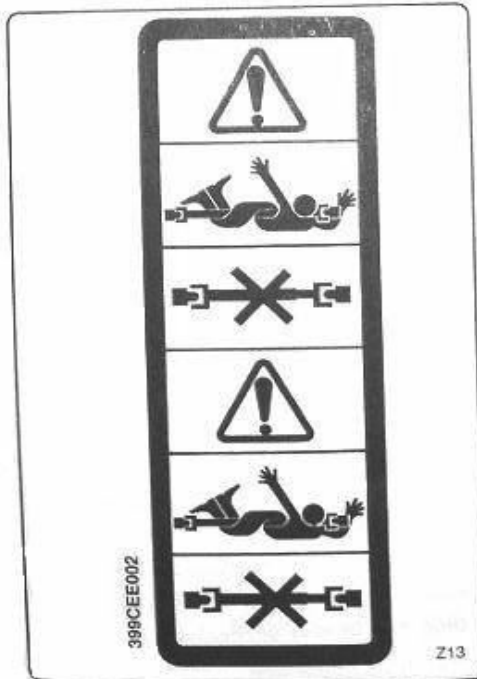


fig. 2.2.3



fig. 2.2.4



fig. 2.2.1

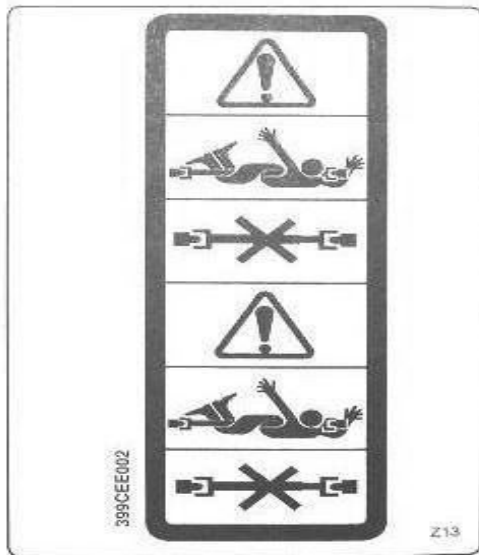


fig. 2.2.3

2.3 - Starting regulations



Always check that any imminently dangerous condition has been appropriately eliminated before using the implement.

Check that all guards and safety shields are installed, efficient and correctly mounted in place.

Never allow inadequately trained personnel to use the implement.

Before starting, always check that there are no persons, particularly children and animals, within the operative range of the implement.

Examine the work area in order to become familiar with the type of soil in question. Check that there no obstructions or objects in the area that could be caught up by the implement and thrown up at a distance. Clean all such objects from the area.

Never work near roads, paths, housing areas or places potentially frequented by people, vehicles, animals, etc. If such action is inevitable, check that these areas are deserted before beginning work and while on the job.



Never start the tractor before being correctly seated in the driving position.

Never start a faulty implement, even when such a condition is only suspected. Contact your nearest dealer and ask for the implement to be inspected.

2.4 - Regulations for correct use of the operating machine



Never ever use the machine while under the influence of alcohol or the effect of medicines such as tranquillizers, sedatives, stimulants, drugs or any other substance as could slow or alter the reflexes or sight.

Never ever work when there are persons on the implement. No one must ride on the tractor apart from the driver unless this is explicitly allowed by the tractor manufacturer.



The tractor must be equipped with a roll-bar and/or all other safety devices prescribed by the current laws in force.

To ensure his personal safety, the operator must use these devices correctly. Consult and strictly comply with the instructions in the tractor use and maintenance manual.

The operator should never allow himself to be distracted when working, He should pay great attention and concentrate on what he is doing.

Constantly keep the vehicle under control and always remember how to quickly stop and switch off both the tractor and implement.



Always check that children, adults and animals keep at an adequate safety distance from the implement when it is in use.

Tate great care when working on sloping surfaces. It is preferable to work upwards or down-wards rather than crosswise in order to avoid the risk of over-turning.

Always check and comply with the tractor manufacturer' s instructions, particularly in relation to the maximum gradient on which it is possible to work.

When working on slopes, it is advisable to reduce the work speed, gradually varying the speed and direction of the vehicle during manoeuvres.

Never repeatedly stop and start the machine.

Never operate on wet, slippery grass or soil or where the tyre grip is precarious.

If such action is inevitable, always work at low speed to ensure the operator' s safety.

Pay great attention to any obstructions, stones or other objects which could hit the knives.

The tractor engine must always be turned off, and the ignition key must be removed from the dashboard when intervening on the machine.

For example, when it is necessary to detach the machine from the tractor or if grass or other objects that might have become tangled up in it must be removed.



Before dismounting from the tractor, always disengage the power takeoff (P.T.O), turn off the engine, remove the ignition key from the dashboard, insert the brake, and do not approach the machine before the tolls have come to a complete stop.

After having hit an obstacle, simultaneously stop the tractor and machine tool, turn off the engine, remove the ignition key from the dashboard, insert the brake, and check for any possible damage. If the machine has been damaged, all repairs must be carried out before continuing the working process. Al-ways carry out any required repairs before continuing work.

When the knives are turning, always keep the limbs well away from moving parts and those which heat during work, such as the gearbox and the gear case.

Never ever attempt to check or adjust the chain tension while the implement is operating. Always stop it before this operation.

Never ever lubricate the machine while it is operating, or when the pto is engaged. Never smoke while refueling.

Never refuel near smoldering, sparking material or open flames.



Always check whether the soil around the tractor is slippery.

Clean all mud from the soles of the shoes before mounting the tractor.

Keep the steps, bearing surfaces, handrails, shackles and tractor pedals (brake, clutch and acelerator) clean and free from all foreign bodies such as oil, grease, mud or snow in order to prevent all possibility of slipping or tripping.

Keep the operator support areas on the tractor free from mud or any thing else that

could cause the operator to slip when the implement is mounted or demounted from the tractor.

Never jump on or off the tractor.

Always keep both hands and one foot well anchored.

Never use the control levers or hose pipes as holds.

These are mobile parts and do not offer a safe grip. Involuntary activation of a control could also cause the tractor or implement to accidentally move.

Before the machine is released from the tractor, it should be rested on the support foot where installed. Always check that the machine is balanced and stable, then release it from the tractor, checking again to ensure that it is firmly positioned.

2.5 - Regulations for transit on public highways



When driving on public roads, always comply with the highway code provisions in force in the country where the machine is being used.

Pay particular attention near crossroads, underpasses, level crossings, when meeting other vehicles, overtaking stationary or slower vehicles, etc...

Drive near the edge of the road and try not to hold up the traffic.

Never park the tractor and/or the operating machine near cross-roads, bends, level crossings or where the equipment could be a danger or obstruction to pedestrian traffic.



Before driving on to public highways, always check that the width of the machine complies with current provisions governing maximum permitted vehicle widths.

Some models have accessories enabling the shredder to be transported longitudinally.

Mount the rear reflecting triangles, marker lights and the hazard flashers.

Always check local laws and regulations governing transit on public highways.

Never drive on public highways when the implement or tractor are particularly dirty since soil, grass and other items could drop on to the road and obstruct the normal road traffic.

Disengage the pto and disconnect the driveline when transporting the implement.



Correctly remount all guards and shields that were removed during the maintenance and repair operations.

2.6 - Instruction for maintenance technicians



The implement must be stationary and the tractor pto disengaged before any work is carried out on the implement.



Routine and extraordinary maintenance operations must be carried out in a specially prepared place using correct and efficient tools.

This place must always be kept clean and dry.

There must be sufficient space around the implement to allow work to be easily carried out.

Only trained and specialized personnel must be allowed to service the implement. Contact your nearest dealer when maintenance work is required.

Comply with the indicated bans and procedures when servicing the implement.



Never ever use gasoline, solvents or other inflammable fluids as detergents.

Use the non-flammable and nontoxic commercially available solvents authorized by the competent authorities.

Never use compressed air or highly pressurized water to clean the implement. When this is absolutely inevitable, protect the eyes using goggles with side guards and use the lowest possible pressure. At the end of the job, check and inspect the implement while it is still disconnected from the tractor.

Check the wear of the work tools.

Never carry out welding operations without the manufacture's permission and instructions.

Before welding, always detach the implement from the tractor in order to prevent damage to the battery. Always wear a protective mask, goggles and gauntlets when welding, lapping or grinding, hammering or drilling.

Having completed the maintenance operations, thoroughly inspect the implement and check

that all nuts, bolts and hydraulic connections (if any) are well tightened and that all stops, plugs, split pins and so forth, are in a good condition.



Correctly remount all guards and shields that were removed during the maintenance and repair operations.

2.7 - Prescriptions relating to the hydraulic system

Make sure that all fittings and components are installed before completing the machine when a hydraulic operating system is installed.

If fittings, tubes or parts of the hydraulic system are demounted, make sure that the oil is not pressurized. Oil escaping under pressure can cause serious injuries.

A physician should be immediately consulted if fluids are accidentally swallowed or persons are injured by oil spurting from the hydraulic system.

Splashes of fluid on the skin should be immediately dealt with by the medical service since they can cause series infection or dermatosis.

A physician should be immediately consulted in these cases.

Remember that fluid leaking from a very small hole may be almost invisible but may have sufficient force to penetrate under the skin. Always use a piece of cardboard or a piece of wood when searching for leaks.

Never search for leaks with the hands.

2.8 - Text regulations



Always operate the implement outdoors.

If the implement connected to the tractor must inevitably be started in a closed room, eg. during tests after maintenance, always ensure that there is adequate ventilation to prevent harmful exhaust gas from accumulating.

Carry out various manoeuvres assisted by specialized personnel in order to simulate the different work conditions and acquire the necessary familiarity with the implement.



Before starting, always check that there are no foreign bodies such as stones, soil

or other, clinging to the rotor. When the rotor turns, such items could detach and be violently thrown at even notable distances.

Always operate within a protective cage, or at least near a solid wall.

Always check that no one is too near or in a potentially dangerous position if the implement is to be operated raised from the ground, when testing for example.

Always disengage the pto before driving the tractor to transport the implement from one place to the other.

2.9 - Warning and danger plates and stickers (fig. 2.9.1)



Comply with the warnings on the stickers.

Failure to comply with the given instructions could cause death or serious personal injury.

Check that the stickers are always installed and legible.

If this is not the case, contact your nearest dealer or us in order to obtain replacements (state the code number printed on the left-hand side of each sticker when ordering).

Fig. 2.9.1 show the stickers in question.

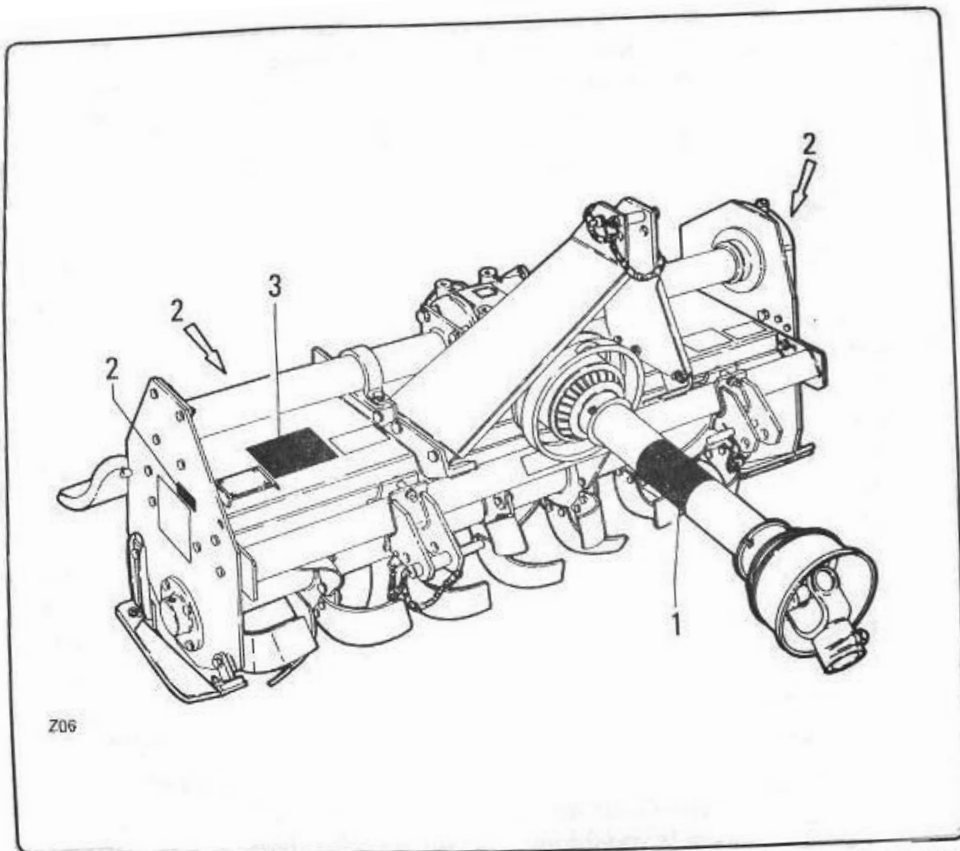


fig. 2.9.1



Fig. 2.9.2



Fig . 2. 9. 3



Fig .2.9.4

IMPORTANT NOTICE	
<p>BEFORE OPERATING THIS MACHINE, BE SURE TO CHECK THE FOLLOWING CHECK-POINTS (HAVING FIRST STOPPED THE TRACTOR ENGINE, DISENGAGED THE P.T.O. AND CAREFULLY READ AND UNDERSTOOD THE OWNER'S MANUAL):</p>	
<ol style="list-style-type: none"> 1. Check oil levels (if necessary add SAE 90 EP oil). 2. Grease the driveline spiders. 3. Grease all marked point on the machine. 4. Check to be sure the nut/bolts are snug on those parts wich are under the most stress (tines, blades, front linkage bolts, gear box bolts, etc.). 	
<p>(GB)</p>	

Fig .2.9.5

3

Testing and delivery of the machine

3.1 - Testing

All machine are tested in our plants to ensure that all moving parts and the hydraulic

system (when installed) operate correctly.

3.2 - Delivery and handling of the packed machine

All items are thoroughly checked before dispatch or delivery.

When the implement is received, always check that it has not been damaged during transport. Contact your dealer if such damage is discovered.

The following paragraphs describe how to proceed with the lifting operations, which depend on the model and type of packing in question.

Packaging may vary from country to country according to shipping requirements (fig. 3.2.1).



Use a lift truck, a crane or other equipment with an adequate carrying capacity to lift the implement, checking its weight in the table on par. 3.3.

Check that the load is stable and well positioned on the truck forks or crane hook.

Keep the load as low as possible when moving the implement. This will ensure greater stability and visibility.

Set the forks to their maximum width if a lift truck is used.

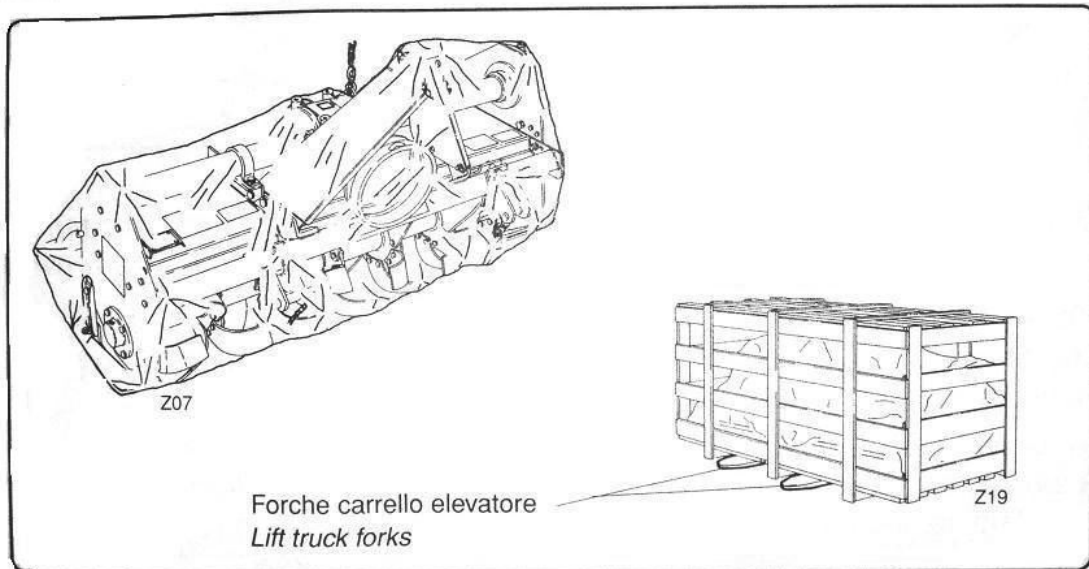


fig. 3.2.1

3.3 - Packing size and weight

With the exception of particular cases, the machine will be shipped wrapped in nylon film.

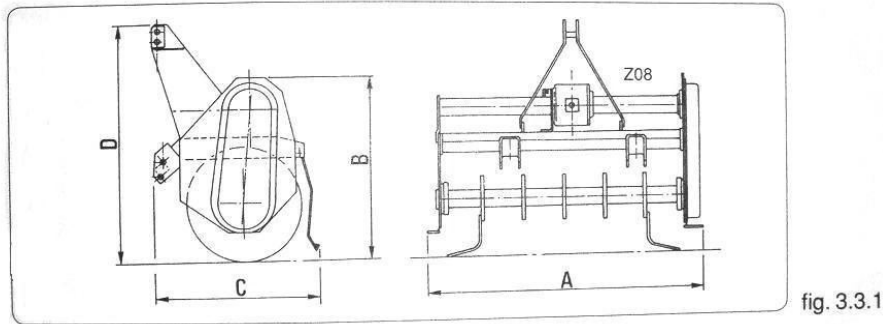


fig. 3.3.1

table of weights and dimensions

Model	A (max.)		B (max.)		C (max.)		D (max.)		Weight	
	mm	inch	Mm	inch	Mm	inch	Mm	inch	Kg	lbs
105	1150	45	590	23	750	29	800	32	165	6
115	1250	49	590	23	750	29	800	32	175	7
MA 125	1350	53	590	23	750	29	800	32	185	7
MZ4 135	1450	57	590	23	750	29	800	32	190	7
145	1550	61	590	23	750	29	800	32	200	8
165	1750	69	590	23	750	29	800	32	215	8

4

Hitching to the tractor

4.1 - Preliminary instructions on use of the machine



Check that all the guards and shields listed in paragraph 1.4 are installed and efficient.

Always operate on a flat and leveled surface when hitching the implement to the tractor. This will prevent dangerous movements.



Keep the hands and feet well away from the knives when hitching the implement to the tractor.

Never allow anyone to stand between the tractor and the machine.



The implement must be used with a suitable tractor. Pay particular care when checking the following conditions:

- **stability.** The weight and dimensions of the implement must suit the technical specifications of the tractor.

An initial indication as to the most suitable tractors is given in the “Average power” column in paragraph 6.1.

- **Maximum tractor power rating.**

Consult the values in the “Maximum power” column in paragraph 6.1.

- **PTO speed.** Consult the values in the “PTO speed” column in paragraph 6.1. when choosing the work speed.

- The user shall ensure that the implement is fit for use with the tractor in his possession.



Before using the machine, check the level of the lubricant in the gearbox and side casing.

Top up with oil of the same type if necessary.

Also check that the right support of the rotor roller has been adequately greased. Consult paragraph 7.6 for the required type of lubricant.

Check that the blades of the rotor roller and leveling roller are free from foreign bodies.

Very worn or broken blades must be replaced.

Check that all warning and danger stickers are installed and legible.

Replace them if necessary.

Check that the tractor is in a good condition.

Check the oil levels in the engine, gearbox and brakes.

Check the cooling water level and tyre pressure.

Always refer to the instruction manual supplied with the tractor.

4.2 - Coupling the machine to the tractor

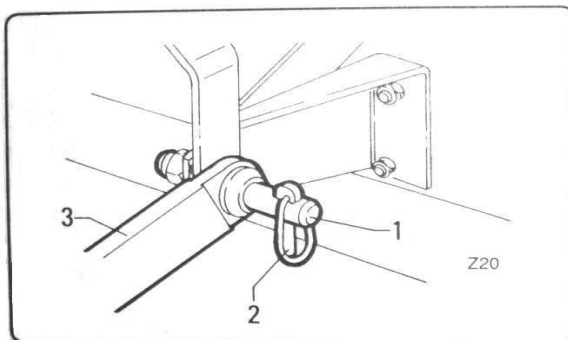


fig. 4.2.1

IMPORTANT

Carefully read the instructions in paragraph 5.6 on rotary tillers with the side shifting function.

- Reverse the tractor towards the machine, aligning the tractor lift links with the two side coupling pins "1" fig. 4.2.1.
- Turn off the tractor engine, remove the ignition key from the dashboard and insert the brake.
-
- Insert the ends of the lift links into implement coupling pins "1".
-
- Fix them in place by means of the relative safety pins "2" fig. 4.2.1.
-
- Fix the upper rod "12" fig. 4.2.2 of the three - point hitch "11" and adjust it until the pto of the implement is parallel to the ground.

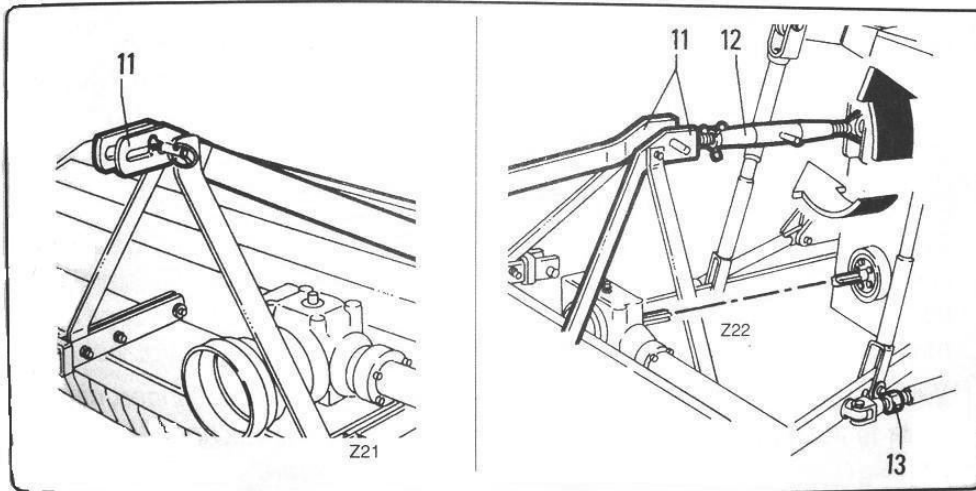


fig. 4.2.2

- Start the tractor engine and lift the machine from the ground, then turn off the tractor engine and remove the ignition key from the dashboard.
-
- Operate lift link rod "13" to prevent excessive oscillations to the side.
-
- Oscillation of about 50 mm each side (2 inches) is recommended.
-
- Level the machine at the sides by adjusting the tractor lift links.
-
- The knives must be at the same distance from the ground on both sides of the implement.
- Mount the driveline, checking that it correctly meshes at both ends.
-
- Consult the descriptions on the following pages for greater details.
If a safety system is required, this must be mounted from the side of the implement and not from the side of the tractor.
-
- Check that the driveline is the correct length fig. 4.2.3.
The minimum coupling length must be no less than 180 mm (6 inches) in each work position.

Driveline travel must still be about 25 mm (1 inch) in the maximum coupling position.
See fig. 4.2.3.

These are the correct regulations for safe working conditions.



Always couple the two end forks of the driveline and check that they are perfectly locked in place.

To achieve this condition, completely insert the pins and safety bolts "1" fig. 4.2.3 into the relative grooves in the pto shafts on both the tractor and machine sides.

An unlocked shaft could slip out of position, causing notable mechanical damage and serious injury to anyone near.

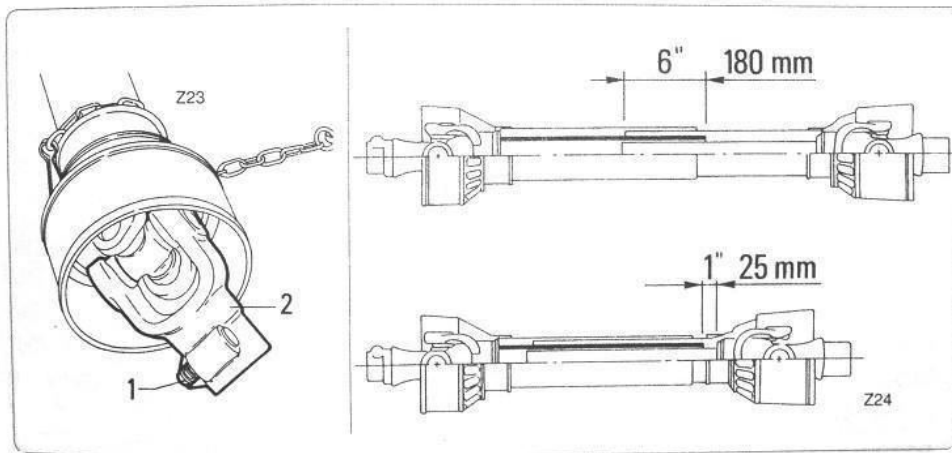


fig. 4.2.3

4.3 - How to shorten the driveline

After the machine has been hitched to the three-point coupling of the tractor, it should be lifted and lowered to check that the driveline is the correct length, If the driveline is too short and tends to slip out of place, it must be replaced with a longer one.



Contact your nearest dealer or a specialized retail outlet if the drive-line must be replaced with a longer one, since this must belong to the same power category and possess the same characteristics.

An unsuitable driveline could easily break.

If the driveline is too long, it should be shortened in the following way:

- Set the machine at a minimum distance from the tractor, then brake the tractor and switch the engine off.
- Separate the two halves of the drive-line. Insert the female part into the tractor pto and the male part into the machine pto, checking that the position is correct by means of the fixing pins.

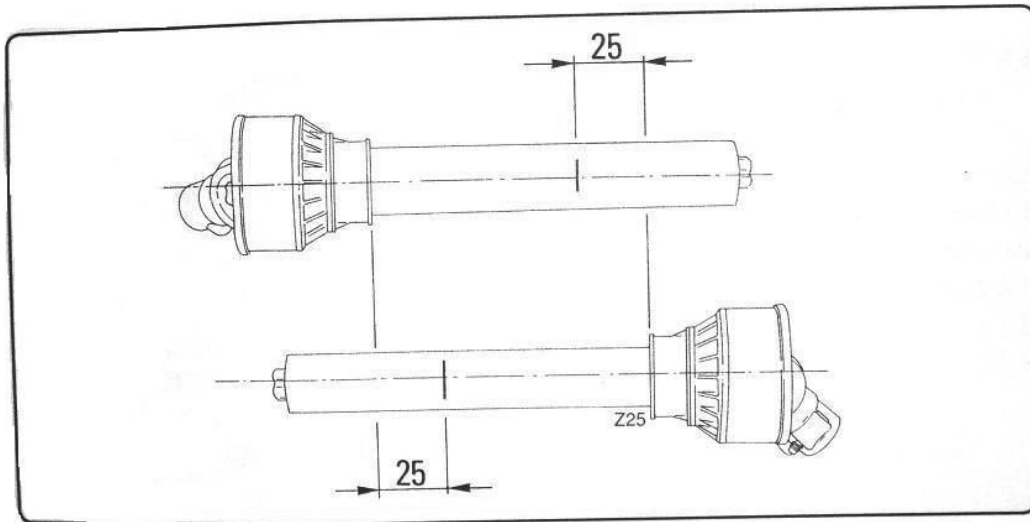


fig. 4.3.1

- Near the two halves of the driveline together, keeping them parallel.
- Using a felt-tip pen, matchmark the place where the two halves must be shortened, measuring 25 mm from the beginning of each half, as shown in fig. 4.3.1.
- First cut shield "1" fig. 4.3.2 and, use part "2" as a reference to cut the splined shaft.

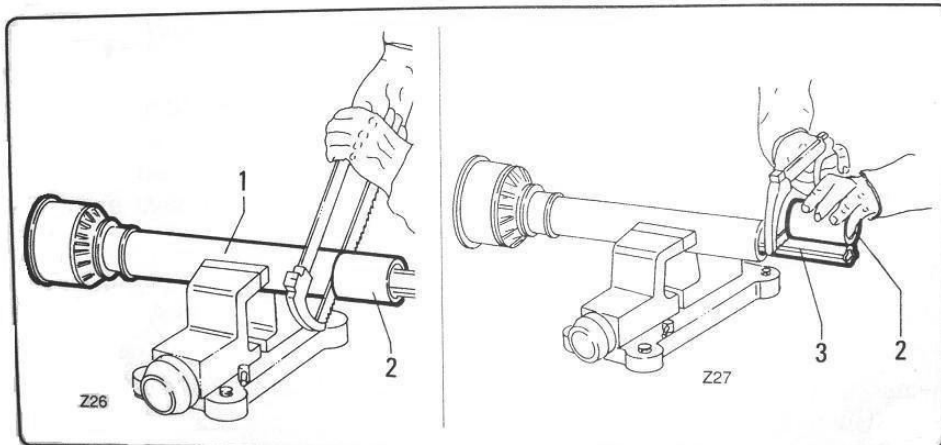


fig. 4.3.2

- Proceed in the same way for the second half.
- Trim and chamfer the two cut ends of the driveline and clean off all swarf and shavings.
- Grease the two profiles and join the two halves of the driveline together again.
- Mount the driveline and check that its length is correct by lifting and lowering the machine.

The shaft must not reach the end of the tube or project from this. It is particularly essential to comply with the previously indicated values (25 and 180 mm).



WARNING!!!

Consult the driveline manufacturer's use and maintenance manual in case of doubt.

IMPORTANT

The driveline may be equipped with safety systems able to eliminate the power overload. The machine will therefore be safeguarded from damage even if it encounters excessive resistance during work.

The following safety systems can be mounted:

- torque limiter with shear bolt;
-
- clutch with friction disks;
- ratchet torque limiter.

The user must keep these systems in an efficient condition and ensure that they are always functional.

Consult the driveline use and maintenance manual for instructions on how to install and service these safety systems.

Contact the driveline manufacturer if the manual is mislaid.

5

Use of the machine

5.1 - Instructions on road circulation



Check the local highway code regulations before driving the machine on public highways with the towed implement.

Check that the reflectors, hazard flashers and/or projecting load indicators are installed, when required, and efficient.

These indicators must be installed at the rear of the implement.

They must be clearly seen by the drivers of other vehicles behind.

If the implement must be transported at night or in other conditions of poor visibility, it should be equipped with sidelights of the type approved by the highway code regulations in force. During transport, the machine should be kept completely lifted with the pto disengaged.

On request, some very wide models may be equipped with a wheeled support for road transport in a longitudinal direction.



No one must either lean against or climb on to the machine during the work or transfer phases.

This is a farm machine. It **MUST NOT** be used to transport persons or property.

5.2 - Preparing the implement for work



Always be careful to check that the power rating of the tractor used to tow the implement does not exceed the maximum power rating for the model in your possession (consult table 6.1).

Check that the P.T.O. speed conforms with the speed required by the machine. Compare the values given near the P.T.O. shaft of the machine.

IMPORTANT

Comply with the instructions in paragraph 5.2 in order to prevent early faults and damages to the implement.

5.2.1 - Adjusting the work depth



The following procedures must be carried out after the machine tool has been disconnected from the tractor. If interventions must inevitably be carried out while the machine tool is still attached to the tractor, proceed as follows:

- disengage the power takeoff;
- insert the brake;
- turn off the tractor engine;
- remove the ignition key from the dashboard.

Never near the limbs to the moving knives. Wait until they have completely stopped.

The work depth is established by regulating skids “1” (fig. 5.2.1) or the leveling roller if installed (see paragraph 5.2.2).

- Use bolts “2” to lower the skids (shallower work depth) or to raise them (deeper work depth).
Fully tighten bolts “2” after having adjusted the work depth.

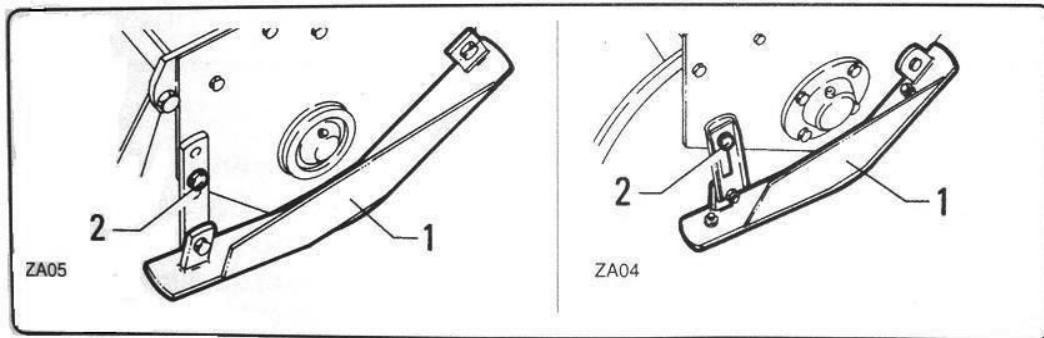


fig. 5.2.1

IMPORTANT

Make the same adjustment on both sides to obtain the same work depth.
 Make sure that the work depth does not exceed the length of the blades when tilling since this would impair the system.



When lifting the machine from the soil, check that the driveline cannot touch any of its parts.

5.2.2 - Regulating the work depth with the leveling roller (optional)

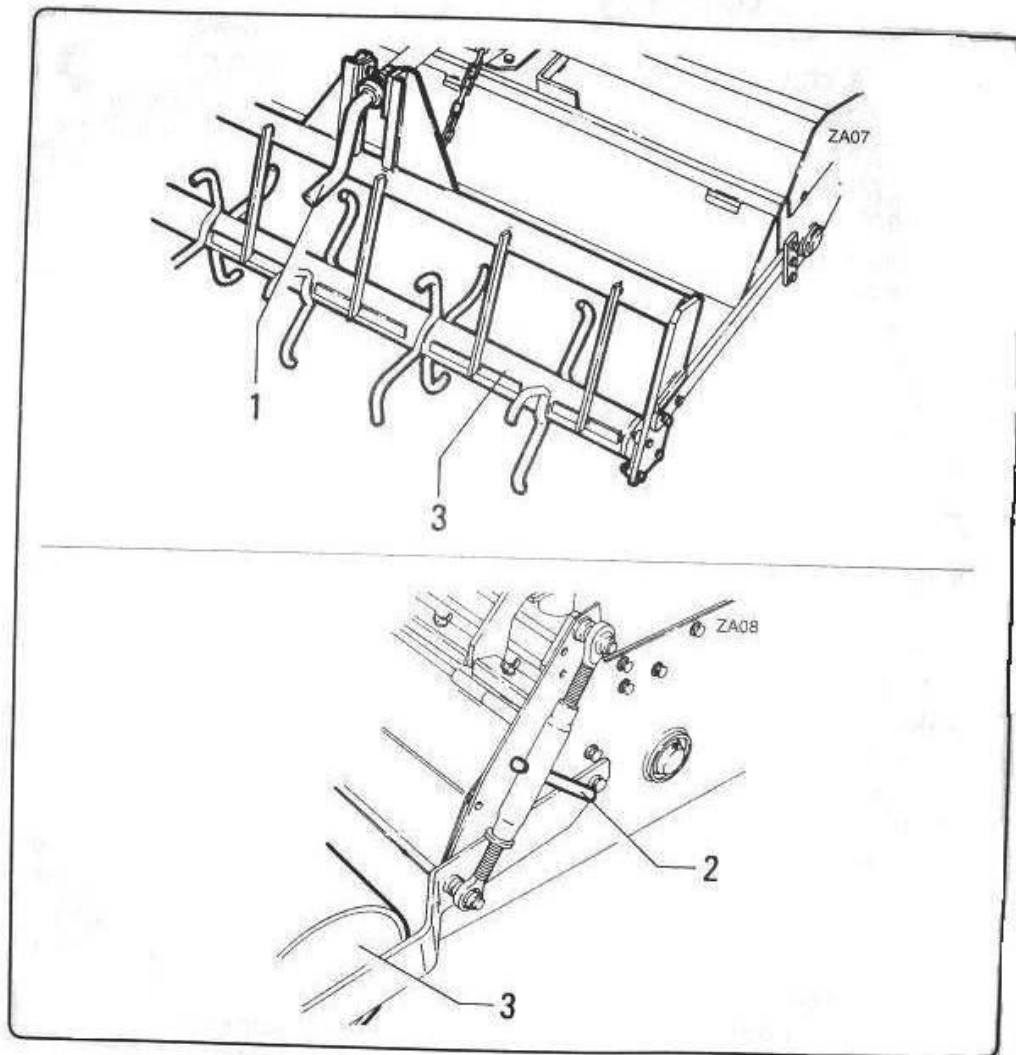


fig. 5.2.2

Use crank “1” or lever “2” to raise leveling roller “3” (deeper work depth) or to lower it (shallower work depth).

5.3 - Use of the machine



Before working with the machine, always check that all the safety shields listed in paragraph 1.4 are installed, correctly mounted and efficient.

Failing this, stop the rotary hoe and replace or repair the damaged shields.

Never continue work until all the shields installed by the manufacturer are efficient. Contact your nearest after-sales service center if necessary.

Always make sure to check that there are no adults, children or animals in the vicinity before beginning work with the machine.

Always check that the work area is free from any objects that could be hit or broken

and thrown up by the knives.

Check that no one enters within the field of action of the machine and always work at a safe distance from roads, built-up areas or places frequented by persons.

Make the height adjustments described in paragraph 5.2. Check that all oil supplies are at the correct level and grease all required points.

Always become familiar with machine use before working with the implement. Make sure that you know how to quickly stop the work operations.

- Lower the lift until the knives are near the ground without touching it.
- Engage the pto.
- Completely lower the tractor lift.

IMPORTANT

Do not allow the machine to drop violently on to the ground. Lower it slowly to allow the knives to gradually cut into the soil.

Violently impact would strongly stress all machine components and could cause serious damages.

During work, the lift must always be fully lowered with the draft control and position devices dis-engaged so that they are unable to influence the work depth of the machine. This should only be regulated by means of the devices (roller, etc.) on the machine itself.

-
- Accelerate the tractor by depressing the accelerator pedal to about half its travel and then engage the pto.
 - Advance with the tractor, setting the pto to the required rpm rate (usually 540 or 1000 rpm).

The forward speed of the tractor must be chose according to the type of soil and the degree to which this must be crumbled. Optimum work speeds will be between 1,5 and 2,5 Km/hour (1 to 2 mph). The maximum forward speed able to guarantee satisfactory work is generally the best. To identify this optimum speed, first select the lowest gear and progressively increase until the most satisfactory result has been identified. Gear down and to not release the accelerator if the speed is too fast.

IMPORTANT

The slower the machine advances during work, the more the soil will be crumbled. Always raise the implement from the ground during manoeuvres, round bends and when reversing.

After having worked for a few meters, stop and check whether the desired result is being obtained. Make any adjustments which may be necessary and then continue with the job. The worked soil should always be kept to the driver' s right.

—  **DANGER!!!**  —

Whenever adjustments must be carried out on the machine tool, always turn off the tractor, remove the ignition key from the dashboard, and insert the brake.

Never move the limbs near to the spinning blades. Wait for them to stop.

—  **CAUTION!!!**  —

Do not reverse with the machine unless this is strictly necessary. In these cases, disengage the PTO, lift the implement from the soil and make sure that the manoeuvre area is clear.

Never lift the implement more than 250 mm from the ground with the pto engaged or the driveline could break and risk injury to the operator.

The maximum tilt the driveline can bear with the pto engaged is 20° (see fig. 5.3.1), a greater inclination may cause strong vibrations and /or breaks.

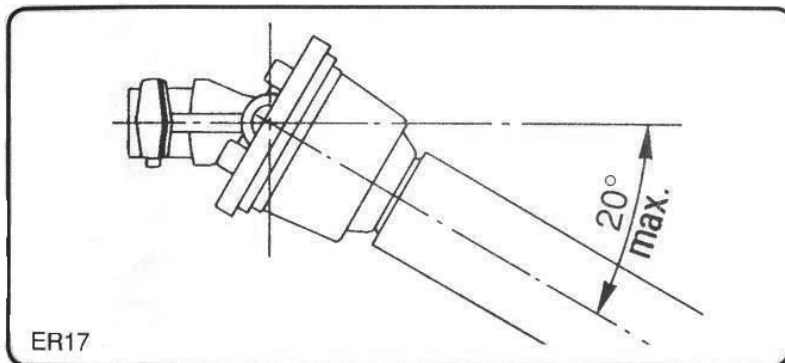


fig. 5.3.1

—  **DANGER!!!**  —

It is strictly forbidden to lean on and/or climb on to the machine during the work or transport phases.

The machine is an implement. It is **NOT** designed to carry persons or property.

5.4 - Demounting the implement from the tractor

- Disengage the pto. Set the implement on a flat surface.

Stop the tractor and engage the parking brake.

- Rest the machine on the ground.
- Switch off the tractor engine.
- Remove the ignition key from the dashboard.
- Remove the driveline.
- Detach the implement from the tractor by disconnecting the three-point hitch.
- Carry out the operations described in paragraph 4.1 in reverse.
-

5.5 - Working with the rotary tiller (proper use)

The rotary tiller is used to crumble the soil and to prepare it:

- 1) for seeding;
- 2) in order to bury grassy residuals in ploughed soil or soil which has been subjected to a first working process;
- 3) on compact soil.

The rotary tiller is not generally suitable for work on stony soil.

A few small stones are usually tolerated and will create no difficulties.

On the other hand, working on excessively stony soils can damage the knives and the machine itself. Such use will also void the guarantee.

This model buries stones in limited quantities and only stones which fall within the size limits indicated in the table below.

In general, to ensure the best performance, the stones to be buried must not be larger than half the work depth (e.g. for a job that is 10 cm deep, stones of up to 5 cm can be buried) and the quantity must not be predominant in relation to the quantity of earth. The best results are achieved with stones whose quantity does not exceed 15% of the volume of earth worked. If there are any stones on the ground which are bigger than the specifications in the table below, they must be removed before starting work. If not, they could catch on the rotor and set off the safety clutch and /or damage the machine.

If there is an excessive quantity of stones on the ground (even if they are acceptable in size), the quality of the work could be compromised as it will not be possible to bury all of them.

5.6 - Side movement of the rotary tiller

5.6.1 - Rotary hoes with mobile couplings

Make the side movements with the machine uncoupled from the tractor.

Make sure that the machine is firmly resting on the ground.

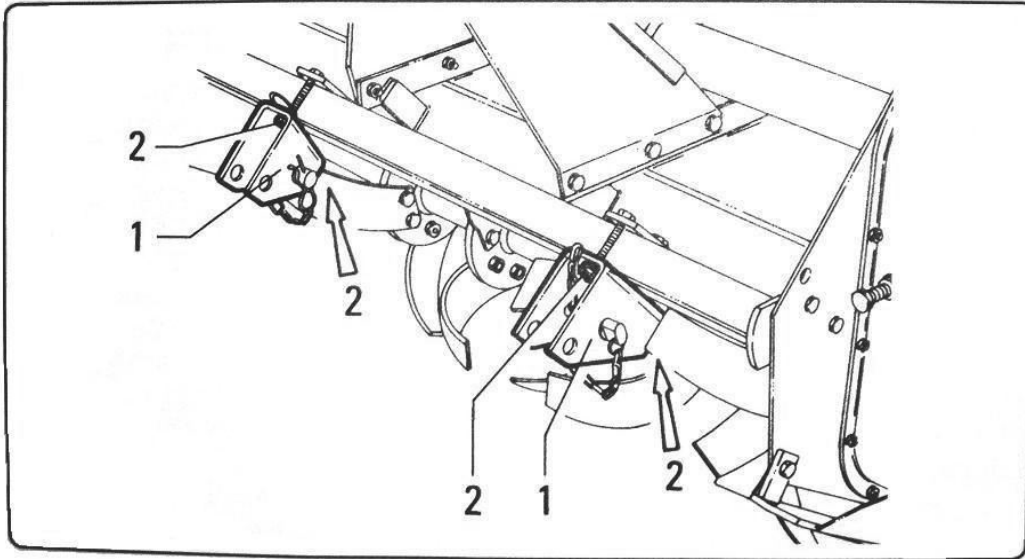


fig. 5.6.1

To facilitate the process, certain types of rotary tiller are equipped with mobile couplings so that it can be shifted to the right or left of the tractor.

- Slacken off nuts "2" of mobile coupling "1".
- Move mobile couplings "1" to the desired position and lock them in place by fully tightening nuts "2".

IMPORTANT

After having moved the mobile couplings, make sure that the driveline is not tilted more than 15° (see fig. 5.6.2).

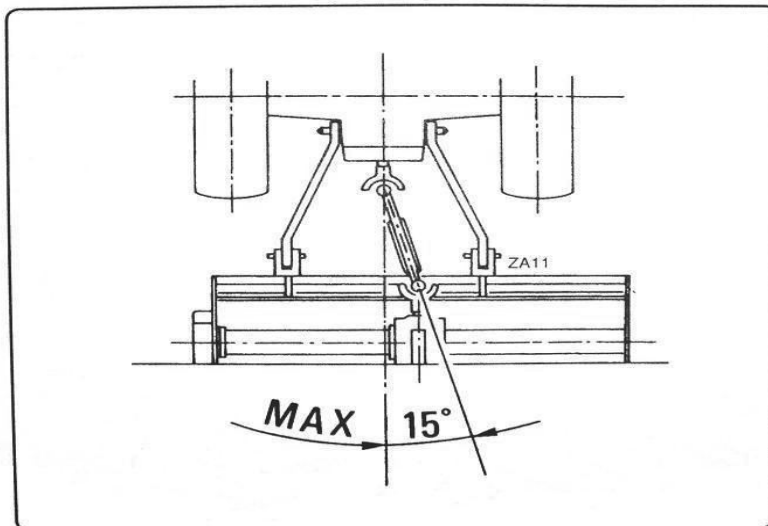


fig. 5.6.2

5.6.2 - Rotary tiller with three-point linkage and manual movement

This model of rotary tiller can work shifted from the tractor axis maintaining the driveline meshed with the tractor PTO.

Proceed in the following way to shift the rotary tiller sideways:

- loosen nuts "1" fig.5.6.3 without completely unscrewing them.
- Manually push on the three point linkage to shift the unit to the desired position, then fully tighten the nuts "1".

Some models have a crank to make the three point linkage easier to move.

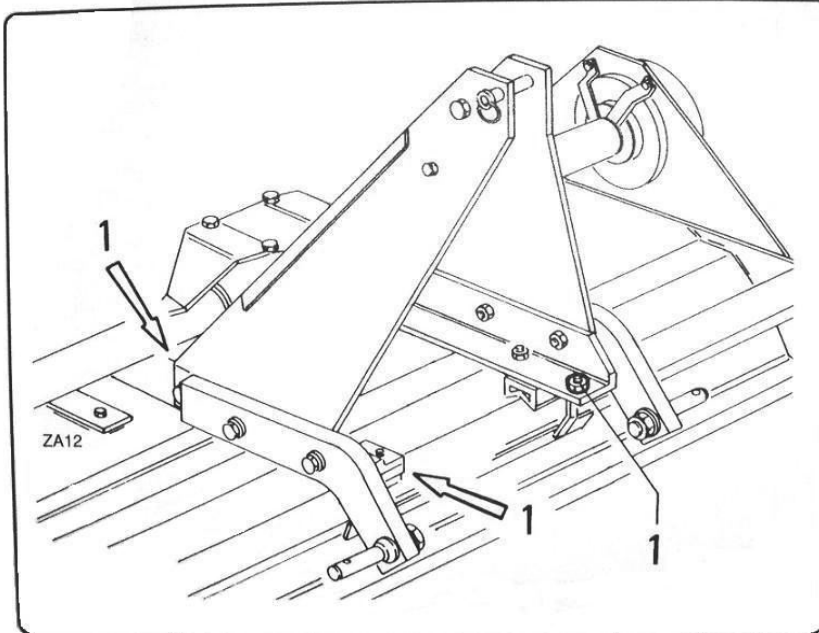


fig. 5.6.3

5.7 - How to store the machine for long periods

Clean all dirt from the implement.

Always remove all dirt clinging to the leveling roller or between the knives.

Park the machine on a flat surface, in a sheltered place inaccessible to either children or animals.

The implement should be set in a stable position, where it is unable to move, drop or overturn, etc.

Check that the implement stands on a firm floor surface or ground. In particular, check that the weight of the machine is not too heavy for the surface on which it rests .



Never climb or sit on the machine since this could lead to personal injury or damage to the machine itself.

6

Technical features

6.1 - Technical data

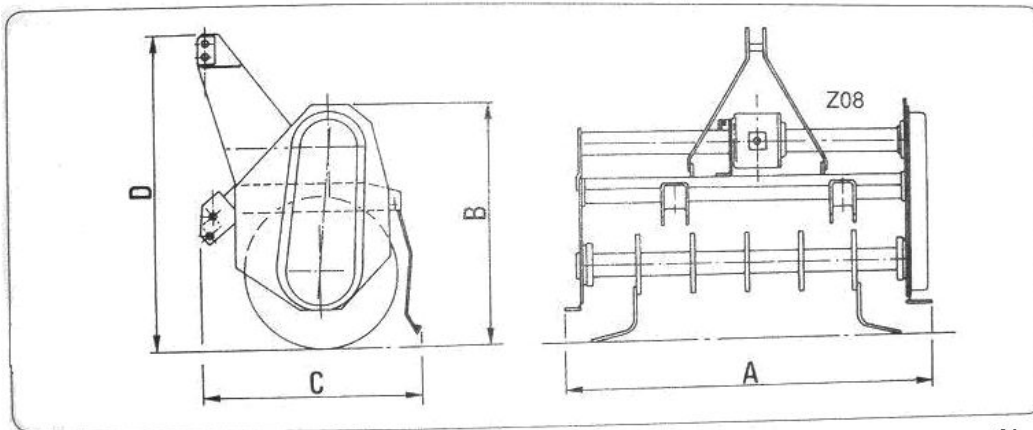


fig. 6.2.2

Model	WORKING WIDTH		HP RATING		P. T. O. speed R. P. M.	ROTOR SPEED R. P. M.	Rotor speed with Multi speed gear box			
	(mm)	(inch)	Med.	Max.			1°	2°	3°	4°
85	850		12-18	35	540		/	/	/	/
105	1050	34	18-23	35	540	201	/	/	/	/
115	1150	42	23-27	35	540	201	/	/	/	/
125	1250	46	27-32	35	540	201	/	/	/	/
135	1350	50	32-35	35	540	201	/	/	/	/
145	1450	54	35-40	40	540	201	/	/	/	/
165	1650	58	35-40	40	540	201	/	/	/	/
		65				201				

7 Maintenance

7.1 - Foreword



The machine must always be disconnected from the tractor before any cleaning, lubricating and servicing operations are carried out.

If interventions must inevitably be carried out while the machine tool is still attached to the tractor, proceed as follows:

- disengage the power takeoff;
-
- insert the brake;
-
- turn off the tractor engine;
-
- remove the ignition key from the dashboard.
-

Good, regular maintenance and correct use are essential if the machine is to remain safe and long lasting.

In particular, comply with the instructions given on the stickers affixed to the machine, as shown below:

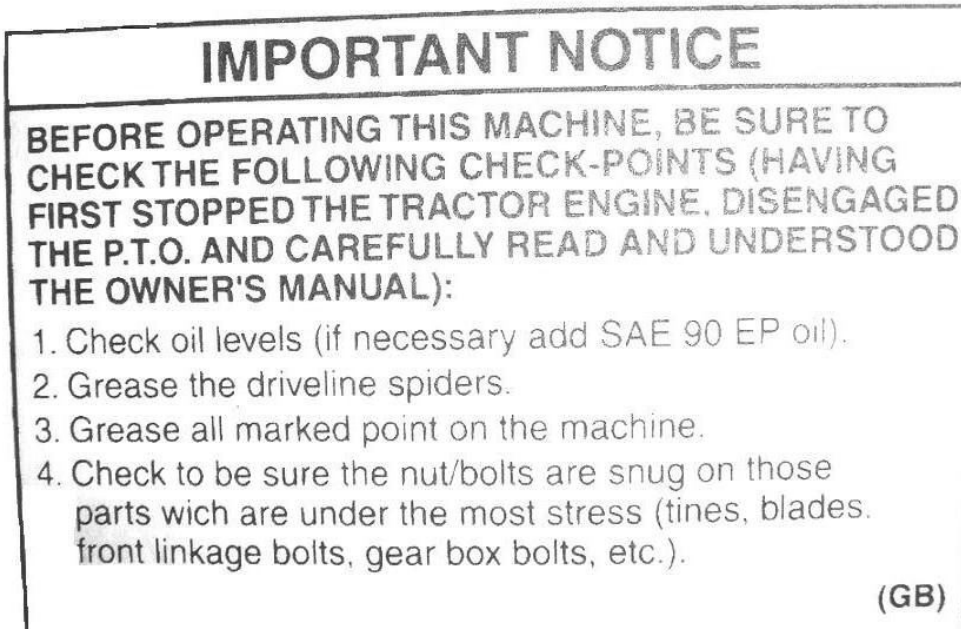


Fig 7.1.1

Only ever use genuine spare parts to ensure the steady and reliable operation of your machine and prevent the warranty from becoming void.

7.2 - Inspections made in our factory

Your implement will have been subjected to various tests and trials both in our factory and on the dealer's premises. This procedure ensures that operation and the necessary adjustments will be correctly carried out.

In particular, the following inspections are made:

7.2.1 - Preliminary inspections

- 1 - The implement is checked to see that the serial number and all stickers have been affixed.
- 2 - Grease each point as described in paragraph 7.6 and check the oil levels in the reduction unit and gear casing.
- 3 - Check for oil leaks.
- 4 - Check to see that all safety devices are installed and efficient.
- 5 - General inspection during operation.

Besides the above inspections, your implement needs to be constantly checked and inspected according to the following frequencies.

7.3 - Inspections before use



To carry out the following procedures, it is necessary to first:

- disengage the power takeoff;
- insert the brake;
-
- turn off the tractor engine;
- remove the ignition key from the dashboard.

- Inspect the knives to ensure that they are free from foreign materials.
-
- Check the implement for wear and damage.
Particularly check the knives and the rear roller integrity.

- Check that all nuts and bolts are fully tightened, with particular reference to the knife bolts (for the correct tightening torque, see the relative table on page 47
- Check that the oils and greases in the various points are at the correct level, as described in paragraph 7.6.
-
- Despite the previous inspections, lubricant may have partially spilt during transport and need topping up.
-
- Make sure that all the guards with which the machine is equipped have been correctly mounted.
-
- Thoroughly clean the stems of the hydraulic shifting unit.
-

7.4 - Periodical inspections



The following procedures must be carried out after the machine tool has been disconnected from the tractor. If interventions must inevitably be carried out while the machine tool is still attached to the tractor, proceed as follows:

- disengage the power takeoff;
- insert the brake;
-
- turn off the tractor engine;
- remove the ignition key from the dashboard.

If work is required under the machine, check that this has been sufficiently raised and safely latched to prevent all risks of injury to the operator.

To prevent all risks, the operator should not merely trust in the hydraulic system of the tractor since this can be liable to leaks able to lower the machine even when the engine is off.

Always block the machine with a rigid support when work must be carried out underneath.

IMPORTANT

The given frequencies with which the maintenance operations listed in this chapter must be carried out are indicative, since they refer to the machine when used in normal conditions.

These frequencies may be varied according to the type of work, the weather conditions, the texture and dust content of the soil.

If the machine is used in heavy duty conditions, the maintenance operations must be carried out more frequently.

Thoroughly clean the lubricators before injecting grease. This will prevent impurities from penetrating the various components.

Make sure that the oil used to top up the supply is the same type as that by the manufacturer.



Store the lubricant in a sheltered place, well away from childrens' reach.

Always read the recommendations given on the lubricant containers.

Prevent the lubricants from being splashed on the skin. Wash the effected part with water if this occurs.

Old lubricants must be handed over to authorized disposal com-pa-nies in compliance with the antipollution provisions locally in force.

Every 8 hours service

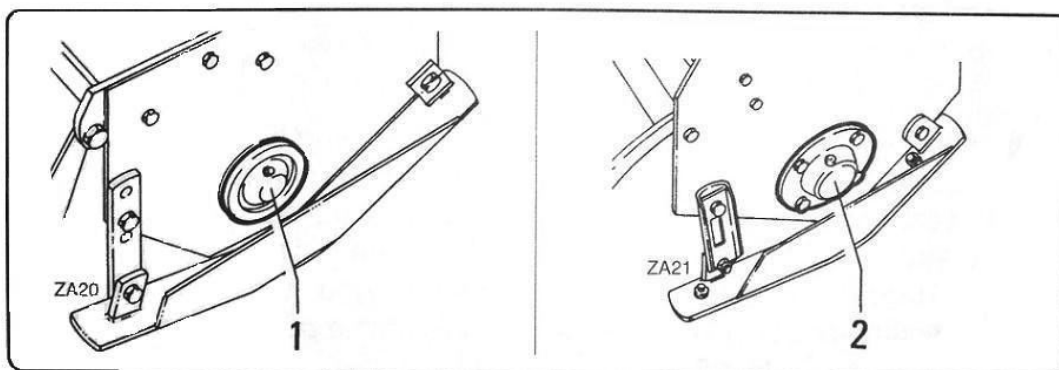


fig. 7.4.1

- Grease the right support “1” fig. 7.4.1 of the rotor or make sure that there is oil in the right support “2” fig. 7.4.1 (in versions with support in an oil bath).

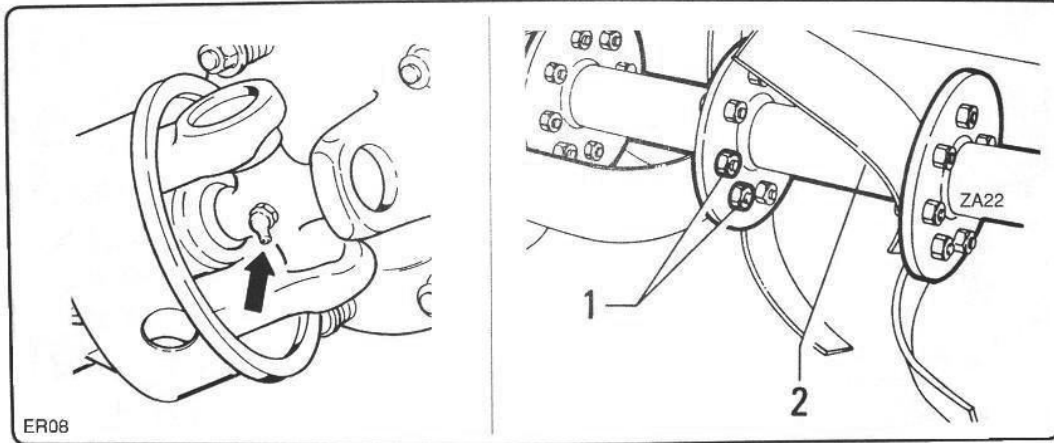


fig. 7.4.2

- Make sure that the driveline is in a perfect condition and grease the spiders (fig. 7.4.2).
- Check that the bolts "1" that lock the blades to rotor "2" (fig. 7.4.2) are well tightened.
- Check the knives for wear. Replace them if necessary, in compliance with the instructions in paragraph 7.5.4.
-
- Demount and clean the driveline.
Be sure to remove all foreign bodies from the sliding parts of the shaft. Cover the sliding parts with grease before remounting the driveline (as indicated in paragraph 7.5.1).
- Check that all nuts and bolts are fully tightened, particularly the bolts of the gearbox of the machine.

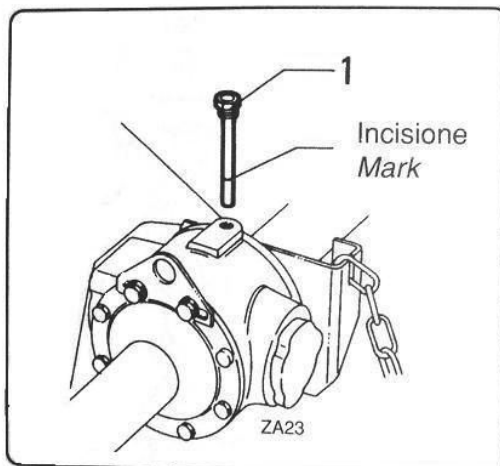


fig. 7.4.3

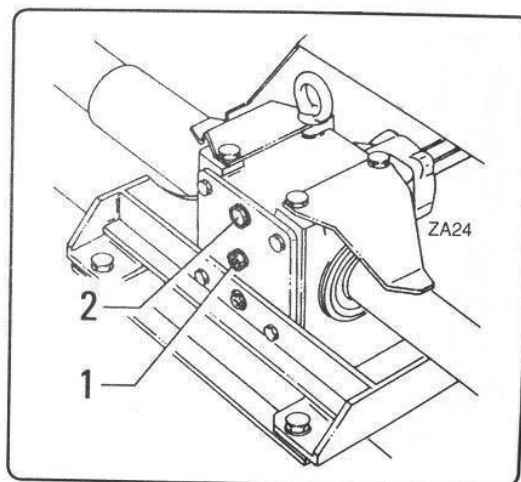


fig. 7.4.4

- Check the level of the lubricant in the gearbox through the inspection plug (fig. 7.4.3 pos. 1) and top up to the mark on the rod if necessary.
- Consult paragraph 7.6 for the lubricant specifications.

The oil must reach the lower edge of the hole of level plug "1" fig. 7.4.4

in versions without a dipstick.

Top up the level by pouring oil through plug “2” .

Consult paragraph 7.6 for the oil specifications.

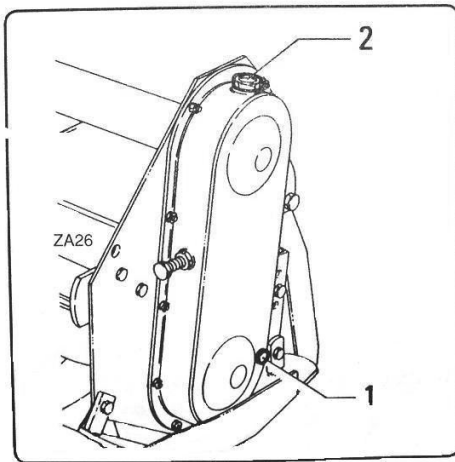


fig. 7.4.5

The level must reach beyond the mark on the dipstick.

Consult paragraph 7.6 for the oil specifications.

- Check the level of the oil in the side transmission housing.
Remove level plug “1” fig. 7.4.5 and check that the oil reaches the lower edge of the plug housing.

If necessary, top up the level through plug “2” , using oil with the characteristics specified in paragraph 7.6.

IMPORTANT

The oil level must be checked with the machine standing on a flat surface and after it has been left at a standstill for at least 10 minutes.

-
- Check the tension of the transmission chain in compliance with the instructions in sub-paragraph 7.5.3.

IMPORTANT

Every 150 working hours, or once a year whichever occurs first, the following procedures have to be carried out:

- take down the chain case;
- clean chain and sprockets using a non-toxic and non-flammable detergent;
- put the chain case on again being sure that the case gasket is not damaged, if it is take away the damaged one, clean the side metal sheet, put a new gasket in place and than put the chain case on again.

Every 250 hours service

- Change the oil in the reduction unit. Consult paragraph 7.6 for the required type of oil.
- Change the oil in the side transmission housing. Consult paragraph 7.6 for the required type of lubricant.

7.5 - How to carry out the required inspections

7.5.1 - Cleaning and greasing the driveline (fig. 7.5.1)

- 1 - Remove the splined parts.
- 2 - Using non-toxic and non-inflammable solvents, degrease the dirty parts, particularly the sliding grooved sections and universal couplings.



Use non-toxic, non-inflammable solvents to prevent the risk of intoxication or fire outbreaks.

- 3 - Using a clean brush, spread a film of grease on the surfaces of the sliding section. Consult paragraph 7.6 for the recommended type of grease.
- 4 - Grease the journals until grease oozes from all the articulations of each journal.

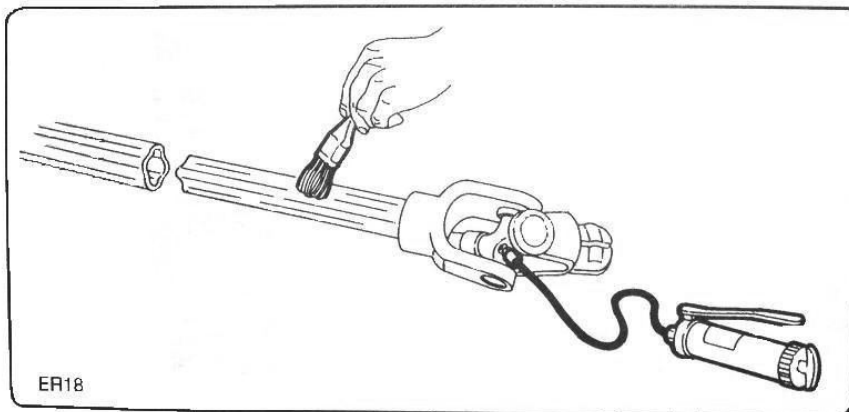


fig. 7.5.1

7.5.2 - Changing the oil in the reduction unit

Change the first oil fill after the first 50 hours service. Following this, the oil should be changed after every 250 hours service. Consult paragraph 7.6 for the recommended type of oil.

7.5.3 - Tightening the transmission chain



The chain must be tightened only after having turned off the tractor engine, removed the ignition key from the dashboard, inserted the brake and disengaged the power takeoff.

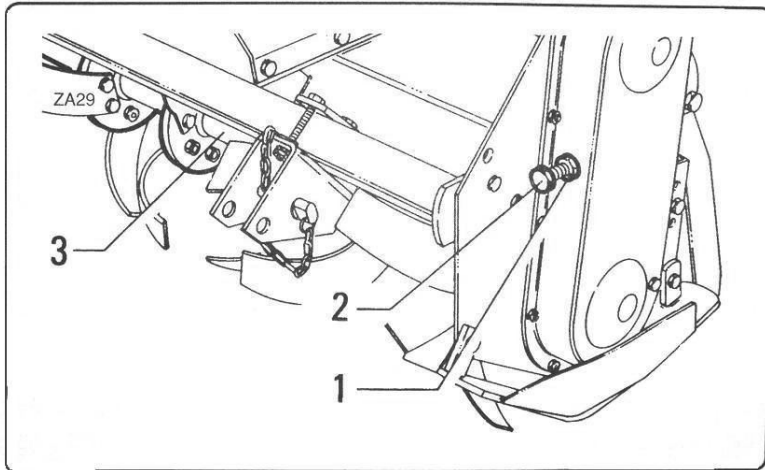


fig. 7.5.2

The tension of side transmission chain will need to be periodically regulated. Proceed in the following way:

- slacken off check nut "1" of chain tension idler "2" a few turns.
-
- Tighten idler "2" by hand as far as possible, meanwhile using the other hand or a foot to turn tool rotor "3".
-
- Having obtained the maximum possible tension with the hands alone, unscrew idler "2" one turn, then keep it in this position by tightening lock nut "1".
-
- Turn the rotor several times by hand to check that it rotates without encountering excessive resistance.
-
- If the rotor jams in a certain point, repeat the chain tensioning procedure from the beginning.

7.5.4 - Changing the hoe blades (fig. 7.5.3)



The following operations must be carried out with the machine uncoupled from the tractor.

If interventions must inevitably be carried out while the machine tool is still attached to the tractor, proceed as follows:

- disengage the power takeoff;
-
- insert the brake;
- turn off the tractor engine;
- remove the ignition key from the dashboard.

Sufficiently lift the machine so that the operation can be carried out and support it on rigid supports in order to work in safety.

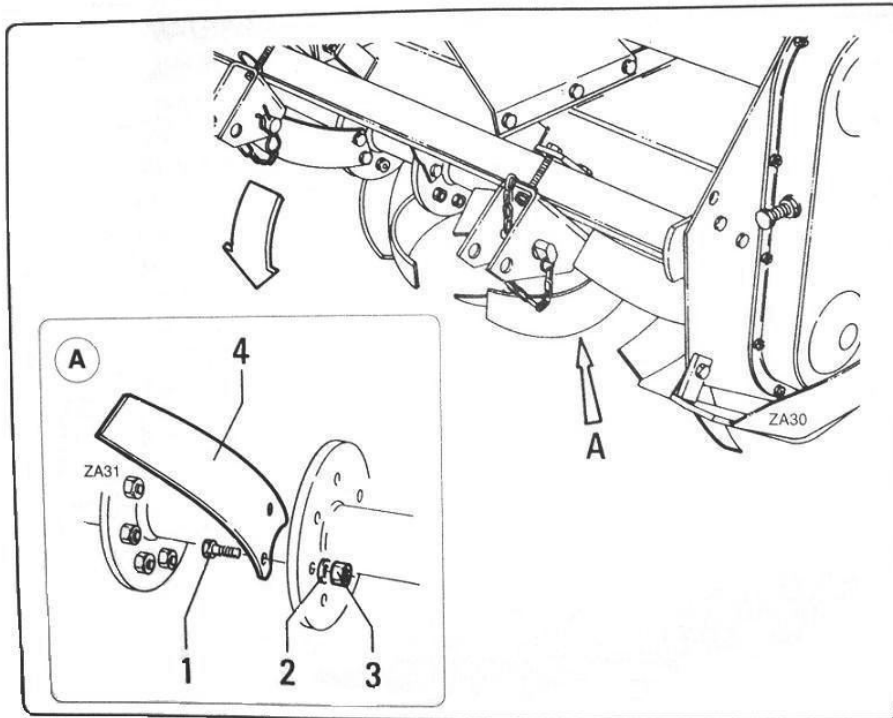


fig. 7.5.3

- The hoe blades “4” fig. 7.5.3 must be replaced if they are damaged, bent, worn blunt or liable to break during work.
-
- Remove the damaged hoe blades by unscrewing bolts “1” and fitting new blades in their place.
Take great care to ensure that the new blades are mounted in the same position as the old ones.
If more than one hoe blade must be replaced, change one blade at a time to prevent positioning errors.

IMPORTANT

The sharp side of the blades must point in the same direction as that in which the rotor turns. The bolts that fix the blades to the rotor flange must be mounted with the head of bolt “1” on the blade side and with washer “2” and nut “3” on the flange side.

7.6 - Lubricating and greasing points fig. 7.6.1 and 7.6.2

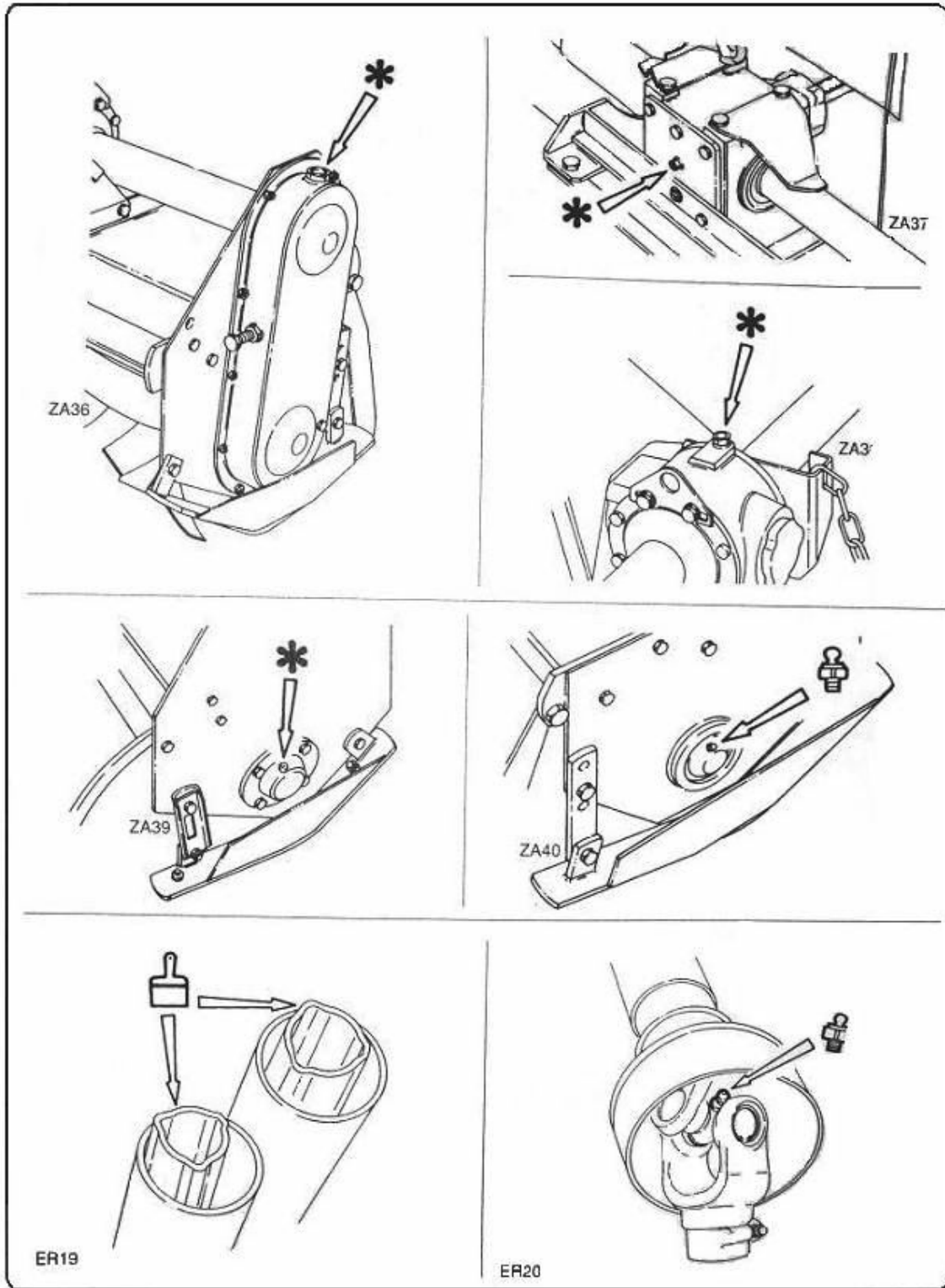


fig. 7.6.1

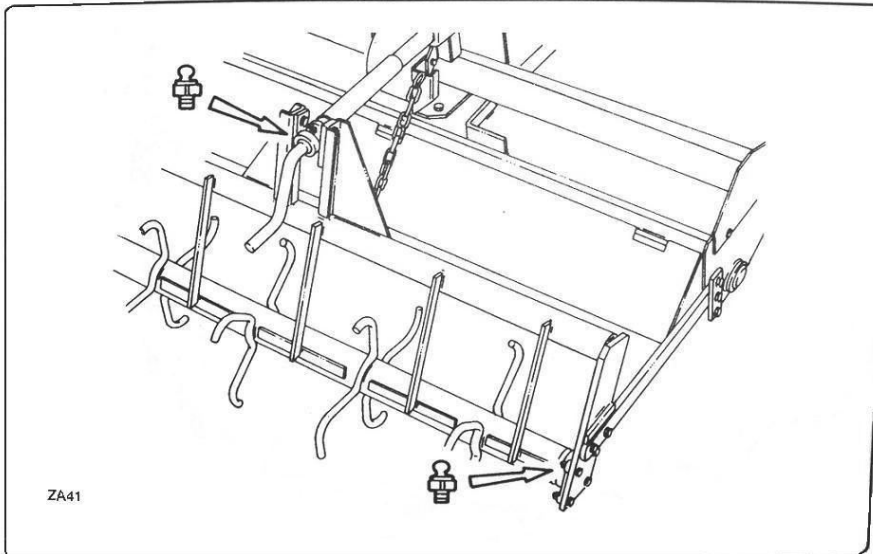




fig. 7.6.2

7.6.1 - Table of recommended lubricants

		AGIP	ESSO	IP	SHELL
	Gearbox and side transmission oil	BLASIA 460	GEAR OIL EP320	OIL 460	OIL 460
	Grease	GRMU3	E. P. 3	GR3	R3

IMPORTANT

Never mix oils either together or with different types. This could jeopardize the condition and life of the parts in question.

Always collect old oil and consign it to the authorized disposal organizations.

Do not litter.

7.7 - Dismantling

When the machine is no longer usable and must be dismantled, remember that it is almost completely made of ferrous material.

The only potentially polluting components on the machine are the lubricants. To prevent them from polluting the environment, spread a waterproof tarpaulin on the ground, position the machine on this and then drain out the lubricants which must be collected in suitable containers.

Now dismantle the machine, separating the components in the following way:

- painted parts;
- ferrous parts;
- plastic parts;

- rubber hoses.

Contact those companies that are legally authorized to dispose of such materials.

7.8 - Proper torque for fasteners

The charts below list correct tightening torque for fasteners (screws, nuts, etc.).

When bolts are to be tightened or replaced, refer to the charts to determine the grade of bolt and the proper torque.

BOLT CLASSIFICATION AND IDENTIFICATION CHART

Metric	
Class	Bolt head markings
5.8	5.8
8.8	8.8
10.9	10.9

- Standard torque data for metric nuts and bolts -

Nm = Recommended torque in
Newton/meters

Fp = Recommended torque
In foot pounds

Bolt diameter	Class 5.8		Class 8.8		Class 10.9	
	Nm	Fp	Nm	Fp	Nm	Fp
Millimeters						
6	6.5	6	10	9	15	13
8	15.5	14	24, 5	23	35	31
10	32	28	50	45	70	61
12	53	49	85	78	119	106
14	84	78	135	125	190	170
16	128	121	205	194	288	263
18	177	168	283	268	398	364
20	250	237	400	378	562	515
22	332	323	532	504	748	702
24	432	409	691	654	971	890

8

Troubleshooting

8.1 Troubleshooting

FAULT	CAUSE	REMEDY
<ul style="list-style-type: none"> - Noisy machine 	<ul style="list-style-type: none"> - Loose parts - Insufficient oil in the reduction gear and/or side transmission housing - Wrong pto rpm rate - No lubricant in the side support of the rotors <p>Loose drive chain</p>	<ul style="list-style-type: none"> - Check that all nuts and bolts are fully tightened - Check the oil level and top up if necessary - Adjust the pto to the correct rpm rate - Inject lubricant by means of the relative grease nipple in the grease supports - Top up the level in the oil lubricated sup- Ports by pouring lubricant through the Relative plug(see paragraph 7.6) - Tighten the chain(see subpar.7.5.3)
<ul style="list-style-type: none"> - Excessive vibrations and/or machine that jumps over the ground 	<ul style="list-style-type: none"> - Wrong pto rpm rate - Foreign bodies jammed between the knives - Broken or worn blades - Incorrectly mounted blades or blades with the not sharp part that penetrates into the soil first - The rotor is deformed or has been subjected to strong impact 	<ul style="list-style-type: none"> - Adjust the pto to the correct rpm rate - Remove the foreign bodies and make sure that the blade are in a good condition. - Replace any broken or worn blades(see par.7.5.4) - Correctly remount the blades - Contact an authorized dealer for repairs

FAULT	CAUSE	REMEDY
- The knives frequently clog	<ul style="list-style-type: none"> - Excessively wet soil - Excessive advancement speed - Grass too tall to be worked 	<ul style="list-style-type: none"> - Stop working and wait until the soil dries - Lower the speed of the tractor - Cut the grass beforehand
- Overheated supports	- Grass and or soil clinging to the ends of the rotor	- Clean the rotor and eliminate all foreign bodies
- Insufficient work depth	<ul style="list-style-type: none"> - Excessively fast advancement - Insufficient engine power - Very hard soil - The hoe blades roll across the soil instead of penetrating it 	<ul style="list-style-type: none"> - Lower the speed of the tractor - Lower the speed of the tractor (gear down) - Make repeated runs - Reduce the tractor speed
- The knives are unable to penetrate the soil	- Excessively fast advancement	- Lower the speed of the tractor
- The work depth differs on the two sides of the rotary tiller	- The two side skids are regulated in different ways	- Adjust the two side skids to the same height
- Excessively crumbled soil	<ul style="list-style-type: none"> - Knife speed too - Shallow work depth 	<ul style="list-style-type: none"> - Lower the speed of the knife rotor in versions with speed gears - Increase the forward speed of the tractor in version without a gear box - Increase the work depth by means of the skids (or of the leveling roller)
- Soil insufficiently crumbled	<ul style="list-style-type: none"> - Excessively low knife speed - Soil too wet 	<ul style="list-style-type: none"> - Increase the rotation speed of the knives (in versions with speed gears) - Reduce the forward speed of the tractor - Wait until the soil dries

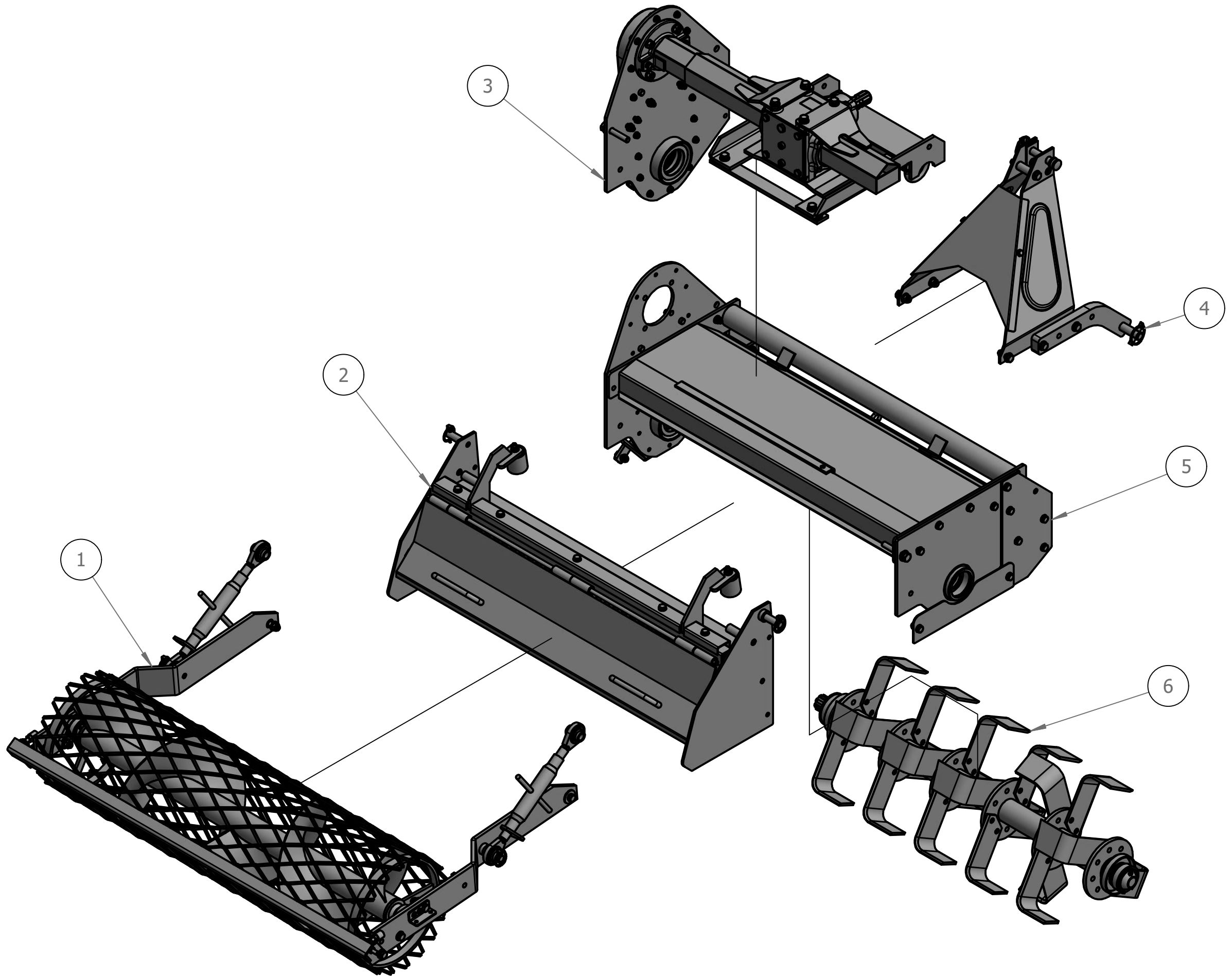
FAULT	CAUSE	REMEDY
- Rotor roller jammed (does not rotate)	-Gearing chain too tight - Foreign body trapped in rotor	- Loosen the chain (see subparagraph 7.5.3) - Remove the foreign body and check the state of the knives. If the knives are damaged, replace them. Before starting to work again, make sure the rotor has not been damaged in any way. If the rotor is damaged, contact an authorized retailer to have it repaired.

Note

Since the oil heats, the gearbox may reach a rather high temperature during work and its outer surface may become **“hot”** to touch.

This is normal and will cause no damage. It is, however, **important** to always check that the oil is at the correct level and of the indicated type (consult the table in paragraph 7.6).

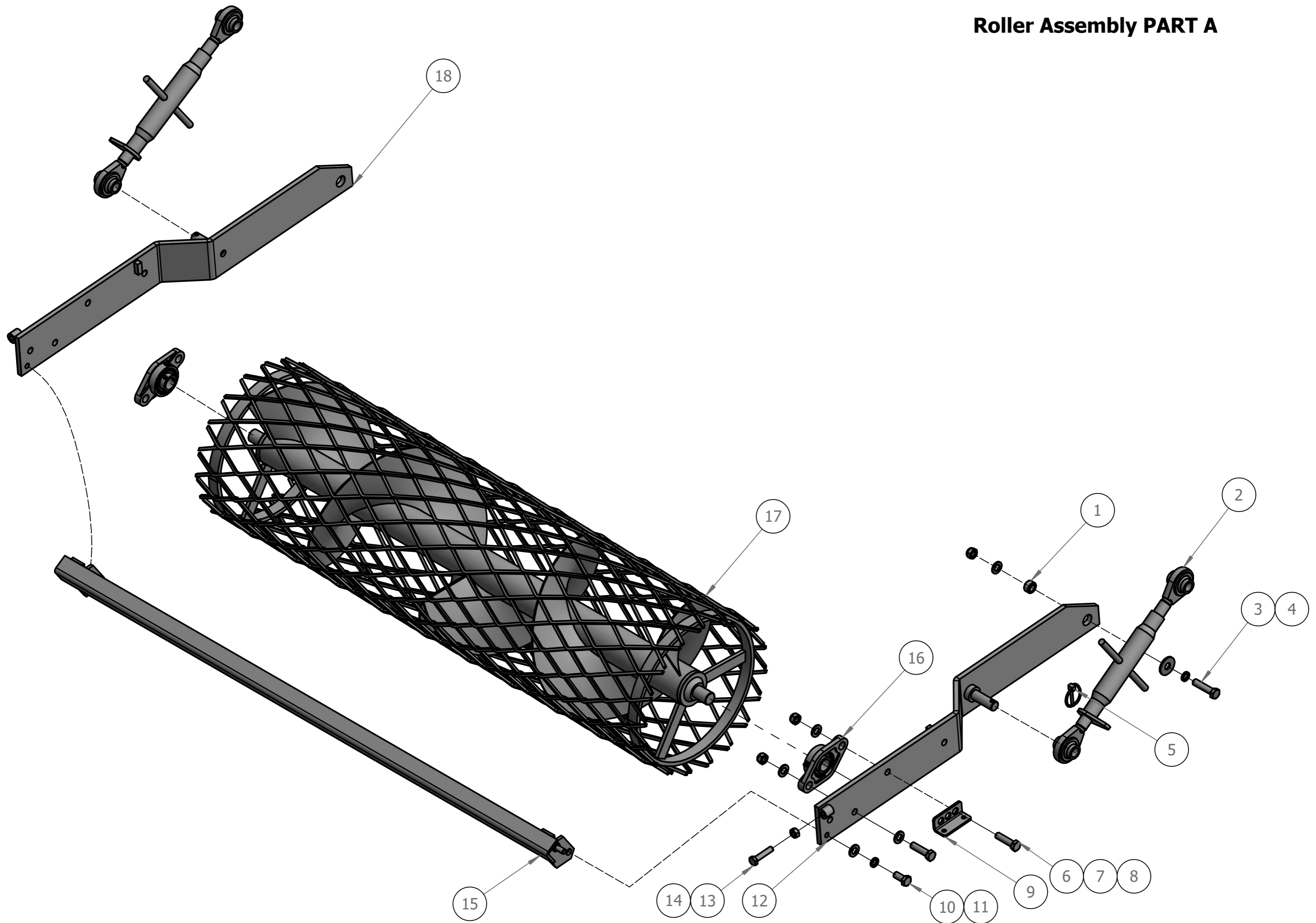
Stone burier GENERAL VIEW



SB GENERAL VIEW

Part	Item	Description	Qty	Remarks
1		Roller assembly	1	
2		Teeth assembly	1	
3		Transmission assembly	1	
4		Hanging assembly	1	
5		Hood assembly	1	
6		Blade shaft assembly	1	

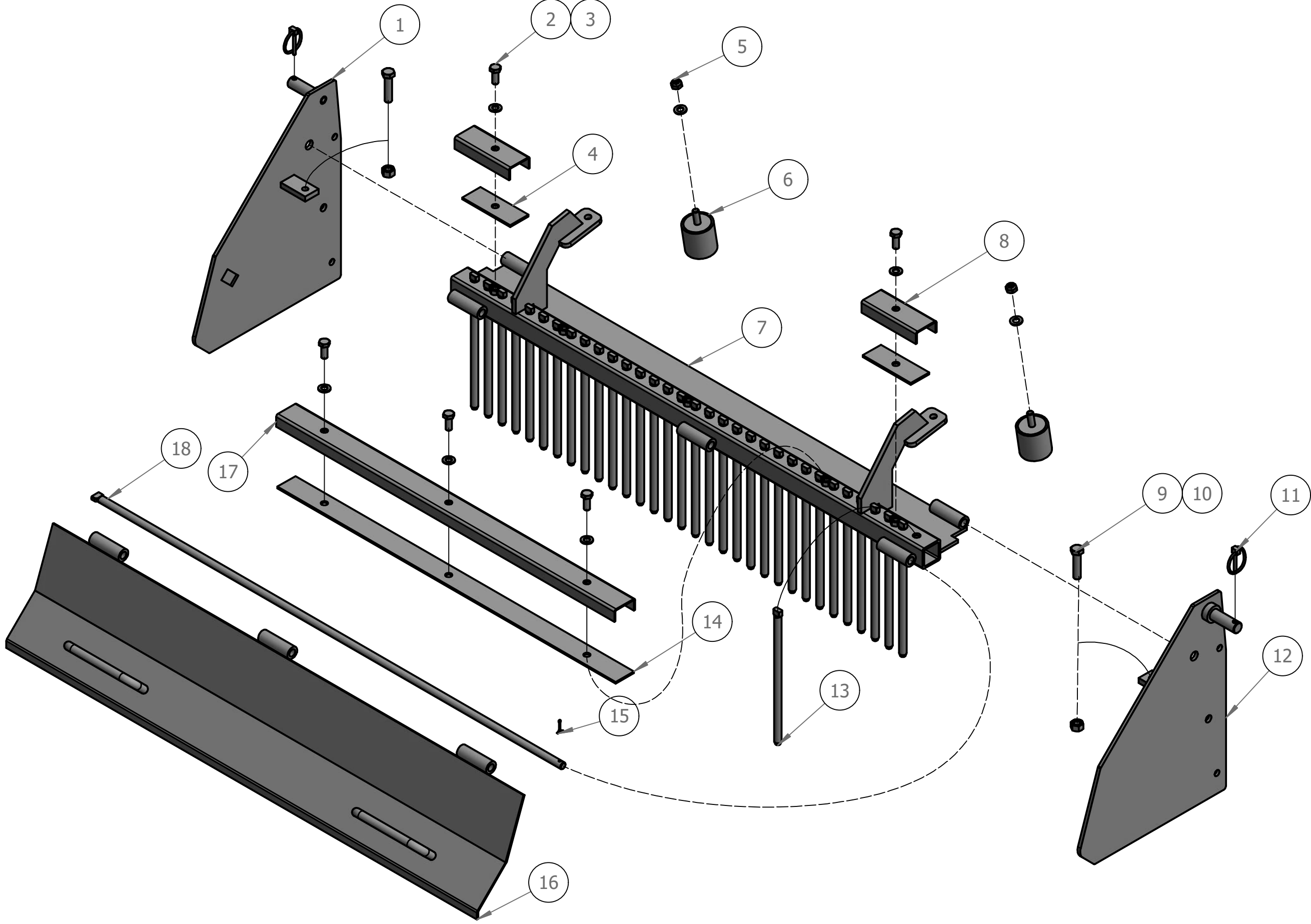
Roller Assembly PART A



Roller Assembly

Part	Item	Description	Qty	Remarks
A1	MZ105.106	Spacer	2	
A2	MZ105.024	Adjusting rod assembly	2	
A3	GB5782-86	Bolt M12x50	2	
A4	GB96.2-2002	Washer 12	2	
A5	TY-SXZJ-05	Lock pin Φ 5	2	
A6	GB5782-86	Bolt M12x45	4	
A7	GB97.1-85	Washer 12	10	
A8	DIN985-87	Nut M12	6	
A9	MZ105.113	Spring plate	2	
A10	GB5783-86	Bolt M12x25	2	
A11	GB93-87	Spring washer 12	4	
A12	MZ105.015	Left supporting plate	1	
A13	GB5783-86	Bolt M10x45	2	
A14	GB6170-86	Nut M10	2	
A15	MZ105.022	Scraper SB60	1	
		Scraper SB125		
		Scraper SB145		
		Scraper SB165		
A16	GB7810-95	Bearing with seat UCFL205	2	
A17	MZ105.023	Roller weldment SB105	1	
		Roller weldment SB125		
		Roller weldment SB145		
		Roller weldment SB165		
A18	MZ105.020	Right supporting plate	1	

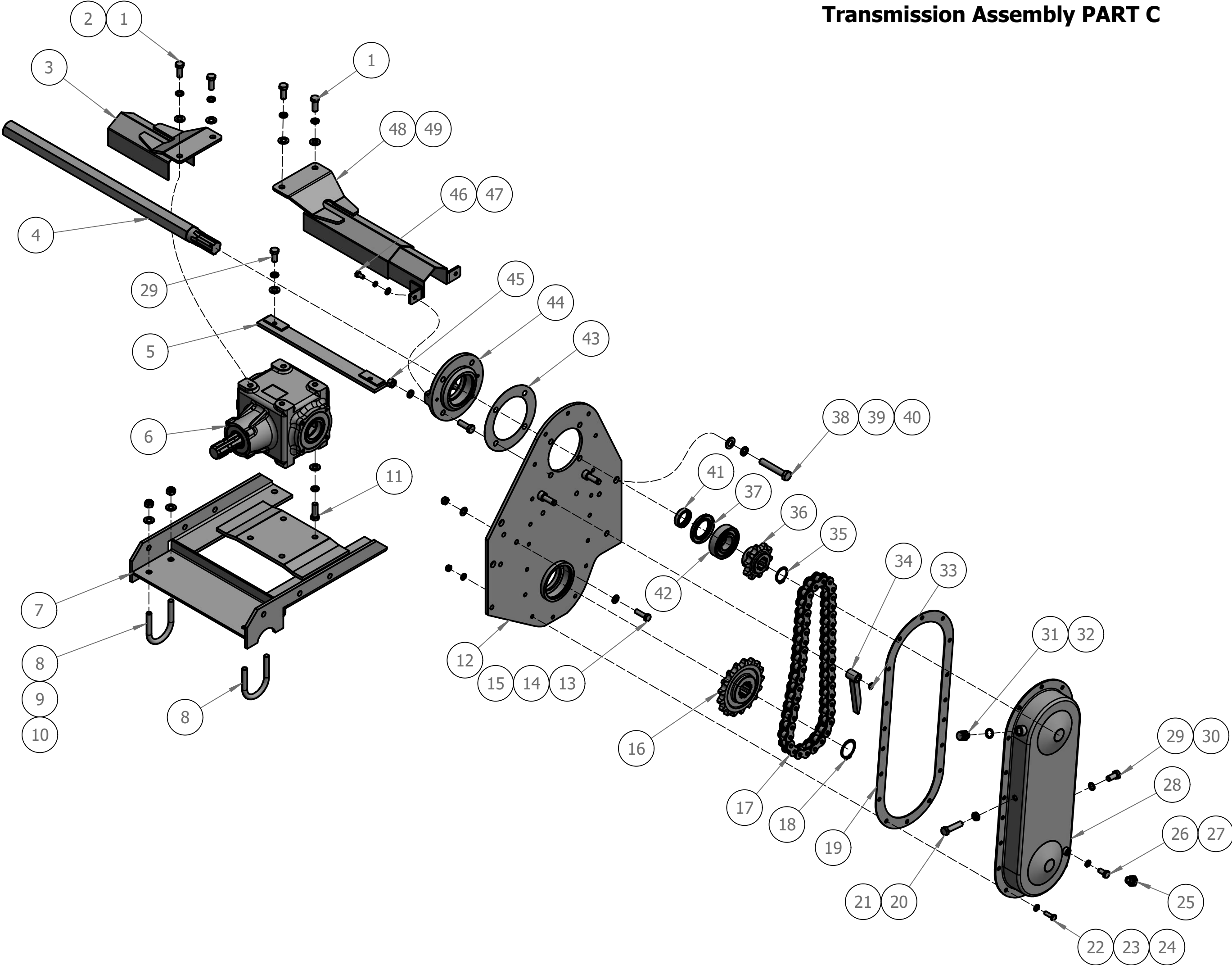
Teeth Assembly PART B



Teeth Assembly

Part	Item	Description	Qty	Remarks
B1	MZ105.013	Right plate	1	
B2	GB5783-86	Bolt M10x25	5	
B3	GB97.1-85	Washer 10	7	
B4	MZ105.112	Short rubber gasket	2	
B5	DIN985-87	Nut M10	2	
B6	MZ105.019	Damping block	2	
B7	MZ105.026	Teeth frame SB105	1	
		Teeth frame SB125		
		Teeth frame SB145		
		Teeth frame SB165		
B8	MZ105.108	Short press plate	2	
B9	GB5783-86	Bolt M12x50	2	
B10	GB6170-86	Nut M12	2	
B11	TY-SXZJ-05	Lock pin $\Phi 5$	2	
B12	MZ105.014	Left plate	1	
B13	MZ105.117	Teeth	33	
B14	MZ105.111	Long rubber gasketSB60	1	
		Long rubber gasketSB125		
		Long rubber gasketSB145		
		Long rubber gasketSB165		
B15	GB91-2000	Cotter pin 2.5X20	1	
B16	MZ105.025	Rear plate SB105	1	
		Rear plate SB125		
		Rear plate SB145		
		Rear plate SB165		
B17	MZ105.109	Long press plate SB105	1	
		Long press plate SB125		
		Long press plate SB145		
		Long press plate SB165		
B18	MZ105.110	Rear plate rod SB105	1	
		Rear plate rod SB125		
		Rear plate rod SB145		
		Rear plate rod SB165		

Transmission Assembly PART C

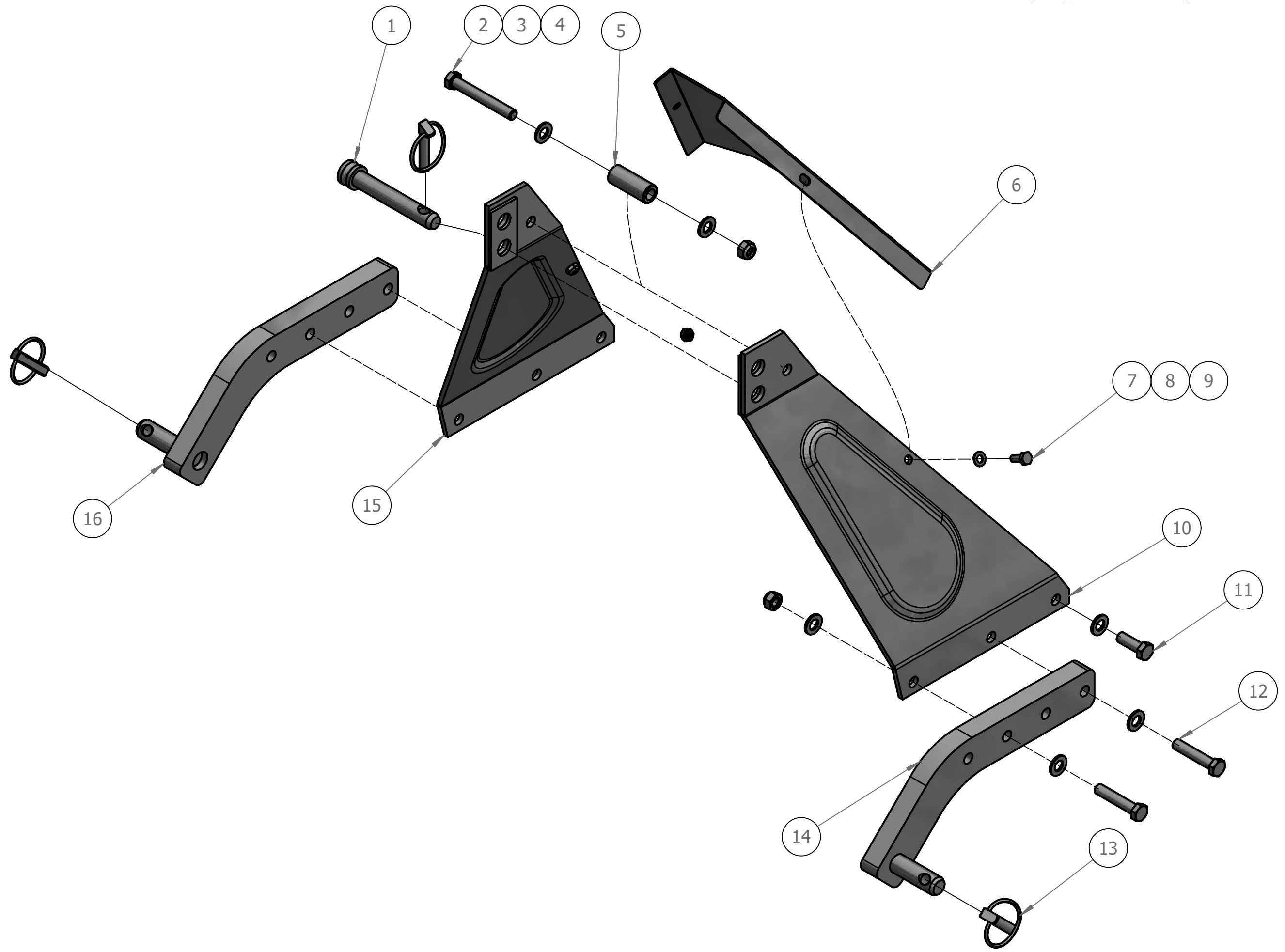


Transmission Assembly

Part	Item	Description	Qty	Remarks
C1	GB5783-86	Bolt M12x30	4	
C2	GB93-87	Spring washer 12	14	
C3	MZ105.016	Shaft end cover	1	
C4	MZ105.126	Transmission shaft	1	
C5	MZ105.017	Linkage plate	1	
C6	XH40.146J.02W	Gearbox assembly	1	
C7	MZ105.031	Gearbox support	1	
C8	MZ105.103	U bolt	2	
C9	GB97.1-85	Washer 12	14	
C10	DIN985-87	Nut M12	4	
C11	GB5783-86	Bolt M12x35	8	
C12	MZ105.033	Right plate	1	
C13	GB5783-86	Bolt M10x35	4	
C14	GB97.1-85	Washer 10	8	
C15	DIN985-87	Nut M10	4	
C16	MZ105.122	Driven chain	1	
C17	GB1243.1-83	Chain	1	
C18	GB894.1-86	Circlip 42	1	
C19	MZ105.121	Rubber gasket	1	
C20	GB5783-86	Bolt M12x50	1	
C21	GB6172-86	Nut M12	1	
C22	GB5783-86	Bolt M8x25	18	
C23	GB97.1-85	Washer 8	38	
C24	DIN985-87	Nut M8	18	
C25	4M-16WD	Plug	1	
C26	GB5783-86	Bolt M10x20	1	
C27	JB / T 982-1977	Washer 10	1	
C28	MZ105.034	Side cover	1	
C29	GB5783-86	Bolt M12x25	3	
C30	JB / T 982-1977	Washer 12	1	
C31	WG-0003	Breathe M16x1.5	1	

C32	JB / T 982-1977	Washer 16	1	
C33	GB894.1-86	Circlip 12	1	
C34	MZ105.027	Tension plate	1	
C35	GB894.1-86	Circlip 34	1	
C36	MZ105.127	Drive chain	1	
C37	GB9877.1-88	Oil seal FB-72×45×8	1	
C38	GB5783-86	Bolt M14X80	1	
C39	GB93-87	Spring washer 14	1	
C40	GB97.1-85	Washer 14	1	
C41	MZ105.124	Oil seal sleeve	1	
C42	GB276-94	Bearing 6307	1	
C43	MZ105.131	Paper gasket	1	
C44	MZ105.128	Bearing seat	1	
C45	GB6170-86	Nut M12	4	
C46	GB5783-86	Bolt M8x16	2	
C47	GB93-87	Spring washer 8	2	
C48	MZ105.018	Extension sleeve	1	
C49	MZ105.018-1	Extension sleeve set	1	

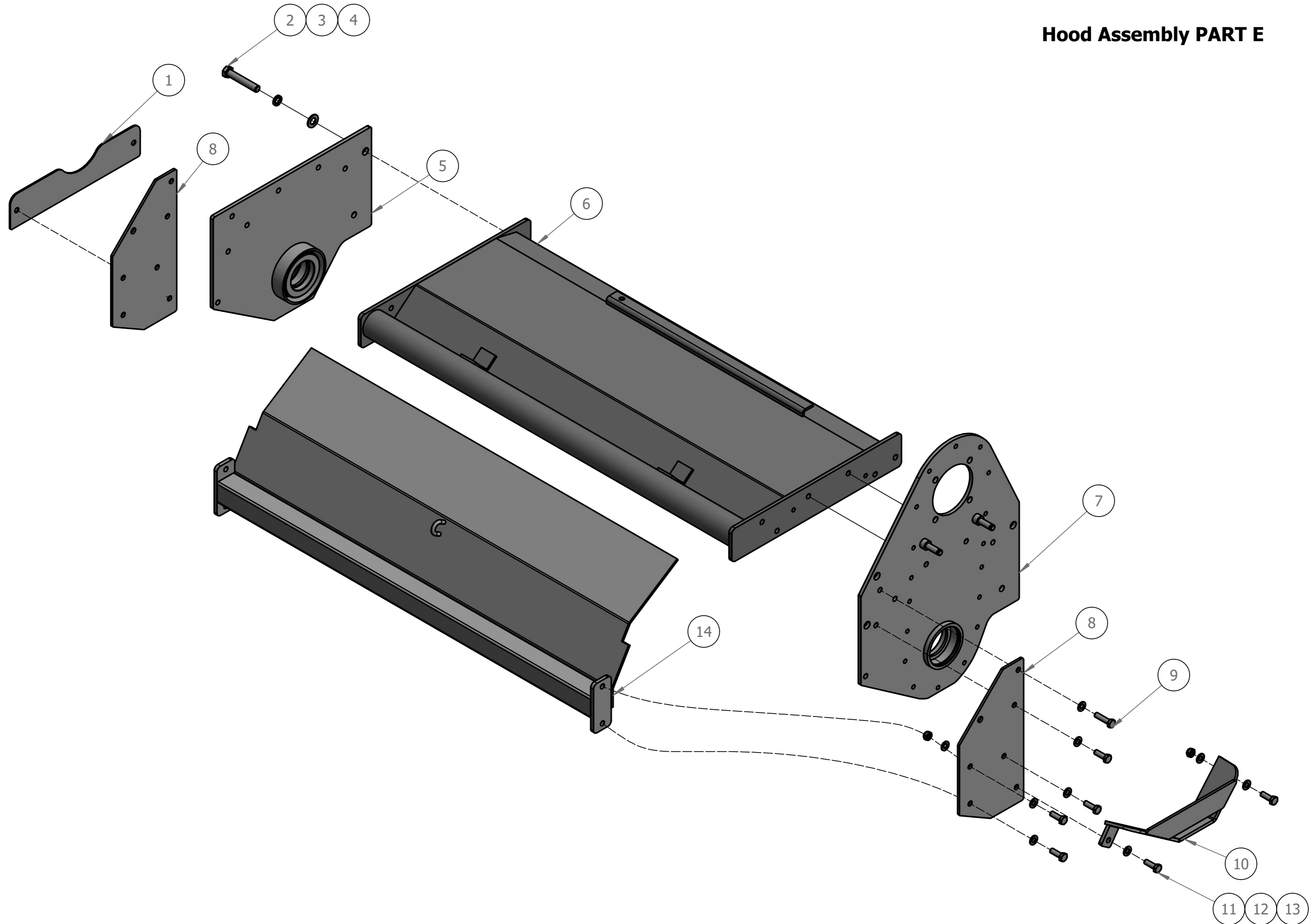
Hanging Assembly PART D



Hanging Assembly

Part	Item	Description	Qty	Remarks
D1	WC42-0101	Up hanging pin	1	
D2	GB5782-86	Bolt M12x90	1	
D3	GB97.1-85	Washer 12	14	
D4	DIN985-87	Nut M12	7	
D5	MZ105.130	Spacer	1	
D6	MZ105.101	Cover	1	
D7	GB5783-86	Bolt M8x20	2	
D8	GB97.1-85	Washer 8	2	
D9	DIN985-87	Nut M8	2	
D10	MZ105.035	Right hanging plate	1	
D11	GB5783-86	Bolt M12x35	2	
D12	GB5782-86	Bolt M12x60	4	
D13	TY-SXZJ-12	Lock pinΦ12	3	
D14	MZ105.030	Left hanging arm weldment	1	
D15	MZ105.036	Left hanging plate	1	
D16	MZ105.032	Right hanging arm weldment	1	

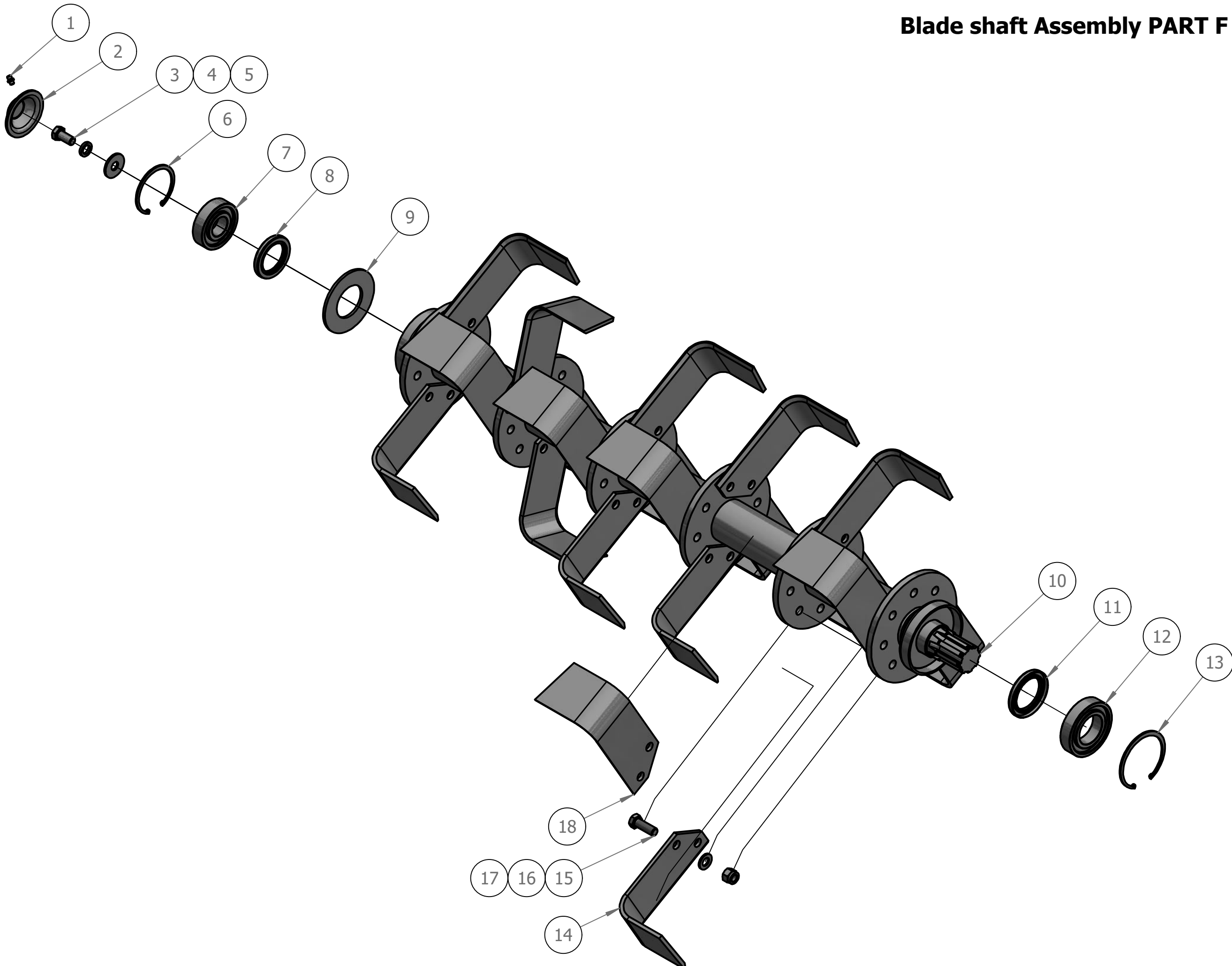
Hood Assembly PART E



Hood Assembly

Part	Item	Description	Qty	Remarks
E1	MZ105.105	Left frame linkage plate	1	
E2	GB5783-86	Bolt M14x80	1	
E3	GB93-87	Spring washer 14	1	
E4	GB97.1-85	Washer 14	1	
E5	MZ105.021	Left frame weldment	1	
E6	MZ105.029	Hood SB60	1	
		Hood SB125		
		Hood SB145		
		Hood SB165		
E7	MZ105.033	Right frame weldment	1	
E8	MZ105.104	Front linkage plate	2	
E9	GB5782-86	Bolt M10x40	2	
E10	MZ105.012	Chain box protection	1	
E11	GB5783-86	Bolt M10x30	10	
E12	GB97.1-85	Washer 10	36	
E13	DIN985-87	Nut M10	18	
E14	MZ105.011	Inside cover SB105	1	
		Inside cover SB125		
		Inside cover SB145		
		Inside cover SB165		

Blade shaft Assembly PART F



Blade shaft Assembly

Part	Item	Description	Qty	Remarks
F1	GB1152-89	Oil cup M6	1	
F2	MZ105.116	Cover	1	
F3	GB5783-86	Bolt M12x25	1	
F4	GB93-87	Spring washer 14	1	
F5	GB96.2-2002	Washer 12	1	
F6	GB893.1-86	Circlip 72	1	
F7	GB276-94	Bearing 6306	1	
F8	GB9877.1-88	Oil seal FB-65x45x8	1	
F9	MZ105.118	Seal felting ring	2	
F10	MZ105.028	Blade shaft SB60	1	
		Blade shaft SB125		
		Blade shaft SB145		
		Blade shaft SB165		
F11	GB9877.1-88	Oil seal FB-72x50x8	1	
F12	GB276-94	Bearing 6209	1	
F13	GB893.1-86	Circlip 85	1	
F14	MZ105.119	Blade (R)	10	
F15	GB/T 5783	Bolt M12x35	20	
F16	GB/T 97.1	Washer 12	20	
F17	GB/T 889.1	Lock nut M12	20	
F18	MZ105.120	Blade (L)	10	