



Operator Manual & Parts List

MAJOR RANGE of GRASS COLLECTORS

MJ-1400 and MJ-1600
MJ27-160 and MJ27-180



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Major reserves the right to modify the machinery and the technical data contained within the manual without prior notice.

Further to this, Major assumes no liability for any damages which may result from the use of the information contained within this manual.

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EEC certificate of conformity for machines

(conforming to Directive 98/37/EEC)

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declares in sole responsibility that the product:

FLAIL GRASS COLLECTOR

When properly installed, maintained and used only for it's intended purpose, complies with all the essential Health & Safety requirements of:

- **THE SUPPLY OF MACHINERY (SAFETY) REGULATIONS 2008.**
- **S.I. No. 299 of 2007**, Safety, Health and Welfare at Work (General Application) Regulations 2007 (Ireland).
- **Health & Safety at Work, etc. Act 1974 (c.37) (UK).**
- **EN ISO 14121-1: 2007** "Safety of machinery. Principles for risk assessment".
- **EN 745** - Agricultural Machinery - Rotary Mowers and Flail Mowers - Safety.
- **EN ISO 13857** - Safety of machinery: Safety distances to prevent hazard zones being reached by upper and lower limbs.
- **89/392/EEC, 91/368/EEC, 93/44/EEC, 93/68/EEC, EN292, EN 704**

I certify on behalf of Major Equipment Int. Ltd., that this machine when properly installed and operated correctly, complies with all the essential Health & Safety requirements of all legislation referred to above.

Signature :



Managing Director

Date 12/01/2012

Introduction

Thank you

We appreciate having you as a customer and wish you many years of safe and satisfied use of your machine.

Using Your Operator's Manual

This manual is an important part of your machine and should remain with the machine when you buy it. Reading your operator's manual will help you and others avoid personal injury or damage to the machine. Information given in this manual will provide the operator with the safest and most effective use of the machine.

Sections in your operator's manual are placed in a specific order to help you understand all the safety messages so you can operate this machine safely. You can also use this manual to answer any specific operating or servicing questions.

Safety Aspects

Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.

Intended use

This machine is a grass cutting machine and designed for cutting grass. Moreover, it must only be used with a suitable tractor (see "Product Specifications" section of this booklet) and driven by an adequate drive-line of the tractor PTO. All other use is strictly prohibited.

Product Identification

Machine Serial Numbers

If you need to contact MAJOR or your MAJOR dealer for information on servicing or spare parts, always provide the product model and serial numbers. Model and Serial number can be found on the Serial Plate located on the machine.

We suggest that you record your machine details below:

Model No: _____

Serial No: _____

Date of Purchase: _____

Dealer Name: _____

Dealer Telephone: _____



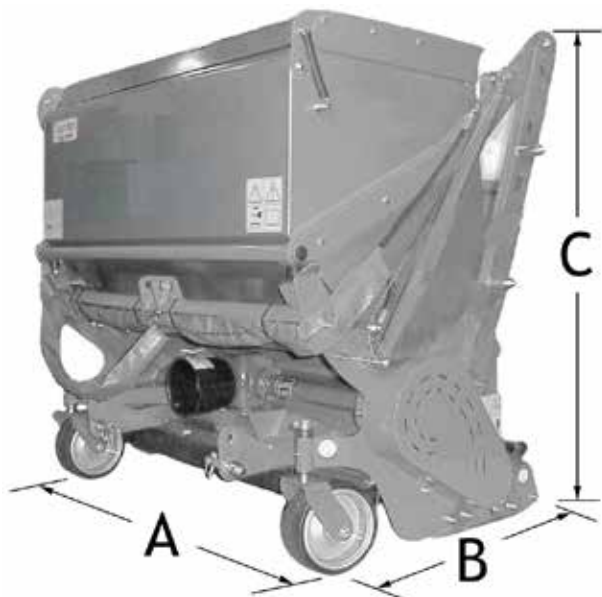
Register Your Product and Warranty Online

To register your product through the Internet, simply go to the Support section on www.major-equipment.com. Completing the information, either online or with the product warranty card, will ensure the customer that their product receives all post sales service and important product information.

This machine is warranted for 12 months with. No warranty is given where the machine is being used as a hire machine. Warranty is against faulty workmanship or parts.

Warranty covers parts only. All parts must be returned to the manufacturer. No warranty can be considered unless parts are returned. All replacement parts will be supplied on a chargeable basis until warranty has been accepted.

Product Specifications



Model	MJ-1400	MJ-1600	MJ27-160	MJ27-180
Working width (mm)	1400	1600	1680	1805
A (mm)	1516	1716	1880	2070
B (mm)	910	910	1862	1895
C (mm)	1400	1400	1352	1365
Weight (kg)	315	360	706	785
PTO (RPM)	540	540	504	540
Required power HP	20	30	30	35
No. of Blades	48	52	72	84
No. of Flails	24	26	36	42

Safety

Machine Safety Labels

The machine safety labels shown in this section are placed in important areas on your machine to draw attention to potential safety hazards.

On your machine safety labels, the words DANGER, WARNING, and CAUTION are used with this safety alert symbol. DANGER identifies the most serious hazards.

The operator's manual also explains any potential safety hazards whenever necessary in special safety messages that are identified with the word, CAUTION, and the safety-alert symbol



A - Danger sign

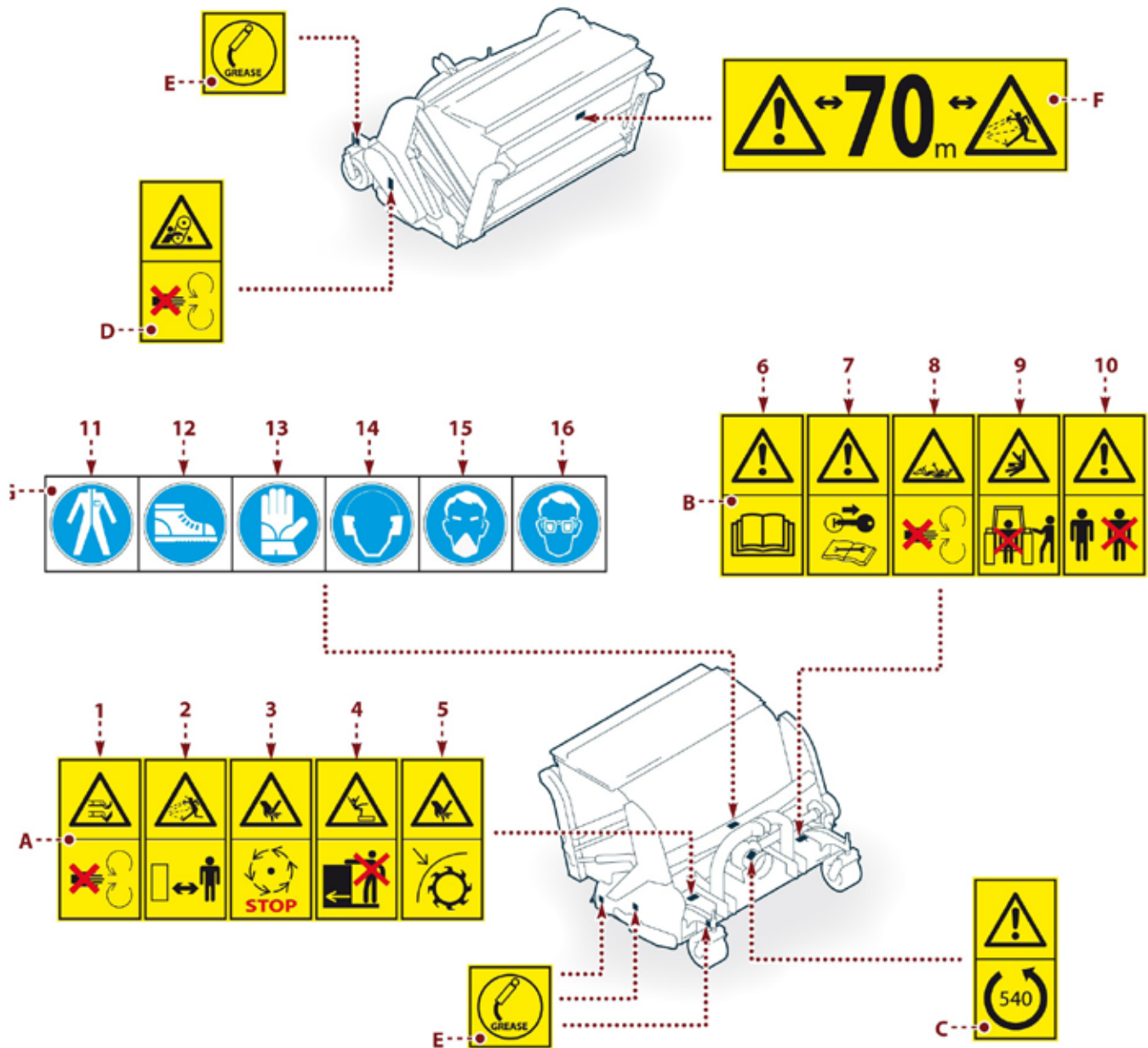
- 1) Parts in rotation and danger of serious injury to hands and feet.
- 2) Parts in rotation and danger of objects being thrown out, keep a safe distance from the machine.
- 3) Danger of serious injury to upper limbs, do not approach the machine until all parts are stationary.
- 4) Danger of falling from the machine, never climb the machine.
- 5) Danger of serious injury, do not perform any operation with the machinery in motion, wait until it is completely stopped.

B - Danger sign

- 6) Before carrying out any work on the machine, read the instruction manual supplied.
- 7) Stop the tractor, remove the ignition key and read the instruction manual before carrying out any work on the machine.
- 8) Danger of serious injury, do not wear clothing with straps, flaps or that are loose fitting that could engage the PTO shaft.
- 9) Danger of crushing, do not stand between the tractor and the machine.
- 10) Danger of serious injury, do not use the machine with multiple operators simultaneously.

C - Danger sign

Make sure that the direction of rotation and the number of rpm of the PTO of the tractor match the indications on the sign.



D - Danger sign

Keep hands away from transmission moving parts (belts and pulleys).

E - Information sign

Indicates greasing points.

F - Danger sign

Danger of objects being thrown out, maintain the safety distance specified on the label.

G - Obligation signs

- 11) It is compulsory to wear protective clothing.
- 12) It is compulsory to wear safety shoes.
- 13) It is compulsory to wear protective gloves.
- 14) It is compulsory to wear ear muffs to protect your hearing.
- 15) It is compulsory to wear dust mask.
- 16) It is compulsory to wear protective glasses.

Hazards associated with operating Grass Cutting Machinery

Shear Hazard

Shear hazards are created when the edges of two objects move toward or next to each other closely enough to cut relatively soft material. This can include the parts of the machine under hydraulic control when operating from transport to mowing position. Note, the wing units are designed to float independently of the centre deck & are free to move within operating limits.

Crush Hazard

Bystanders can be injured when machine is lowered into mowing position. Winged machines have crush points around the hinge areas & between the wing & main body. Always use transport locking bars when not in use (winged models only).

Rotating Blade Hazard

All persons are at risk if they place their hands or feet under the machine when it is raised from the ground when the blades are in motion.

Pinch Hazard

Pinch points are created when two objects move together, with at least one of them moving in a circle. This hazard is common in power transmission devices such as Belt Drives, Gear Drives & Rollers. Ensure all guarding is present.

Wrap Hazard

Any exposed, rotating machine component is a potential wrap point. Injuries usually occur when loose clothing or long hair catch on and wrap around rotating parts such as PTO shafts or Drive shafts on the machine. Ensure all guarding is present.

Free-wheeling parts Hazard

The heavier a revolving part is, the longer it will continue to rotate after power is shut off. This characteristic is called 'free-wheeling.' Blades, and various other components, drive shafts etc., will continue to move after power is shut off - often for several minutes. Injuries occur when:

- Operators shut off equipment, and attempt to clean or adjust a machine before components have completely stopped moving.
- Shear bolt protection device in PTO shaft shears & the mowing parts are still spinning but the primary PTO shaft is stationary. Operator awareness is the key to safety around freewheeling parts. Never raise the machine while the blades are still rotating.

Thrown objects Hazard

Machines throw material as a natural part of doing their job. Foreign objects, such as stones, sticks and other debris, may be taken into this equipment and expelled at tremendous speed. These objects are contained by the sides of the machine and by the rear/front rollers / guards / chain guards / rubber skirts depending on model of your machine.

Ensure bystanders are clear from the machine & cannot be hit with debris expelled from the machine. Bystanders or animals in the path of thrown objects could be seriously injured. Never operate machine with decks raised from the ground as this makes the front/rear protection redundant.

Hydraulic Hazard (if applicable)

Hydraulic systems store considerable energy. Careless servicing, adjustment, or replacement of parts can result in serious injury. High pressure blasts of hydraulic oil can injure eyes or other body parts. The following precautions are crucial:

- Make certain the hydraulic pump is turned off.
- Lower attached equipment to the ground.
- Confirm that load pressure is off the system.

A pinhole leak in an hydraulic hose is a serious hazard. A leak may not be visible, and the only sign may be a few drops of fluid. Never inspect hydraulic hoses with your hands, because a fine jet of hydraulic fluid can pierce the skin.

Slips, Trips and Falls Hazard

Slips and falls often result from:

1. Slippery footing on the ground
2. Cluttered steps and work platforms.

The potential for slips and falls can be greatly reduced by using good judgement and practicing good housekeeping on and around equipment.

Noise Hazard

Please note that the machine is normally used outdoors and that the position of the operator is seated in the driving seat of the tractor. It is advisable to consult the prescriptions listed in tractor operator and maintenance manuals.

The acoustic pressure at a distance of 2.6m from the centre of the machine and at a height of 2.0m, with the implement operating in a no load condition can reach 90 dBA. In a loaded condition & a PTO rate of 540 rpm the value can reach 97dBA. Higher rate of PTO input will result in in higher noise levels. Always wear hearing protection.

Operating Safely

This MAJOR machine is designed to operate at a PTO rate which is stated in the Product Specifications part of this booklet. Ensure tractor PTO output is set at a correct RPM rate. This MAJOR machine must only be used for purposes outlined in the Intended Use section of this booklet. All other use is strictly prohibited.



Users should become thoroughly familiar with the contents of this manual before using, servicing and mounting the implement to 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 non-slip shoes, ear muffs, goggles and gauntlets. Wear a jacket with reflecting stickers if the implement is used near public highways.



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



ALWAYS DISENGAGE PTO, SWITCH OFF THE TRACTOR ENGINE AND ENGAGE THE PARKING BRAKE BEFORE MAKING ADJUSTMENT TO THE MACHINE.



NEVER PLACE LIMBS UNDER THE MACHINE WHILE ROTOR(S) ARE TURNING. ROTOR(S) CAN REMAIN TURNING FOR UP TO 1 MINUTE AFTER DISENGAGING PTO.

Workstation

The operator must remain seated while working the machine. If the machine is a winged unit and the wings need to be raised/lowered the operator must not leave the tractor. Always ensure the PTO has been turned off and the parking brake applied before leaving the tractor cab or carrying out maintenance.



NEVER OPERATE THE HYDRAULICS WITH THE TRACTOR SWITCHED OFF

Regulations for use of the transmission

The transmission to the gearboxes is protected throughout the machine by both PTO shafts and bolt down covers. All guarding should be kept efficient and in good condition. If the condition is poor, the guarding should be renewed before the implement is used.



UNLESS IT IS CORRECTLY PROTECTED THE TRANSMISSION COULD CAUSE DEATH SINCE IT CAN CATCH ON PARTS OF THE BODY OR CLOTHING

Ensure retaining chains are correctly anchored on all PTO shafts, preventing them from turning. Ensure drive line can turn easily within the shield. Keep spline grooves clean and greased so that PTO shaft can connect easily. Besides being described in this booklet, the method by which the PTO shaft is connected to the tractor must be checked out with the instructions in the tractor manufacturer's manual.

PTO Shaft Safety

Maximum PTO input is specified in the Product Specifications section of this booklet. Contact your nearest dealer or a specialised retail outlet if the PTO must be replaced with a longer one, since this must belong to the same power category and possess the same characteristics. An unsuitable PTO could easily break.

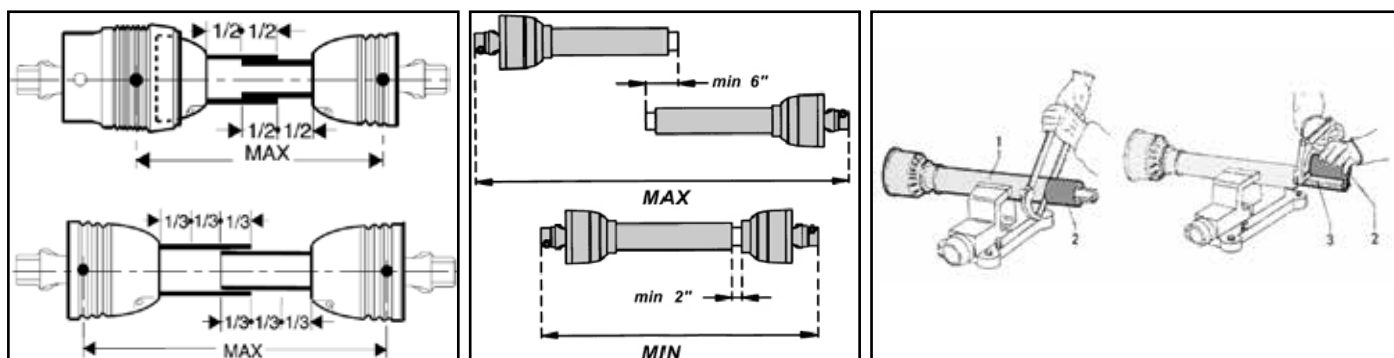
The tractor PTO shaft length may be altered to suit the individual tractor model. When the machine is in operation, the PTO shaft should have a minimum 1/3 engagement as shown in the diagrams. After the machine has been hitched to the tractor, it should be checked in various positions that the drive line is the correct length. If the PTO is too short and tends to slip out of place, it must be replaced with a longer one.

If the PTO shaft 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 off the engine.
- Separate the two halves of the PTO. 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.
- Line up the two halves of the PTO together, keeping them parallel.
- Using a felt tip pen, match mark the place where the two halves must be shortened as shown.
- First cut shield "1" and use part "2" as a reference to cut the splined shaft.
- Proceed in the same way for the second half.
- Trim and chamfer the two cut ends of the PTO and clean off all swarf and shavings.
- Grease the two profiles and join the two halves of the PTO together.
- Mount the PTO shaft and check that its length is correct as before.



Do not use the shaft cone as a step



Driving Safely on Public Roads

Check the local Highway Code regulations before driving the tractor on public highways with an implement attached. Check the reflectors, hazard flashers and/or projecting load indicators are installed when required and efficient. These indicators must be installed correctly and easily seen by the drivers of other vehicles.

Bystanders must not be allowed to lean against or climb onto the machine during transport or while working. Do not allow bystanders to ride on the machine.



MAXIMUM TRANSPORT SPEED MUST NOT EXCEED 30 km/hr (18 MPH)

General safety instructions

Precautions to be taken while working with the machine:

1. Do not operate the machine when you are tired;
2. Before starting mowing, make sure that the area is clear of people or animals.
3. Before starting adjusting the machine, it is mandatory to disconnect the PTO, to turn off the engine of the tractor, apply handbrake and wait for the turning parts to become still and placed on the ground.
4. It is mandatory to read all the safety requirements and the operator's manual of the machine.
5. If you are not sure how to use the machine, please contact the manufacturer or the dealer.

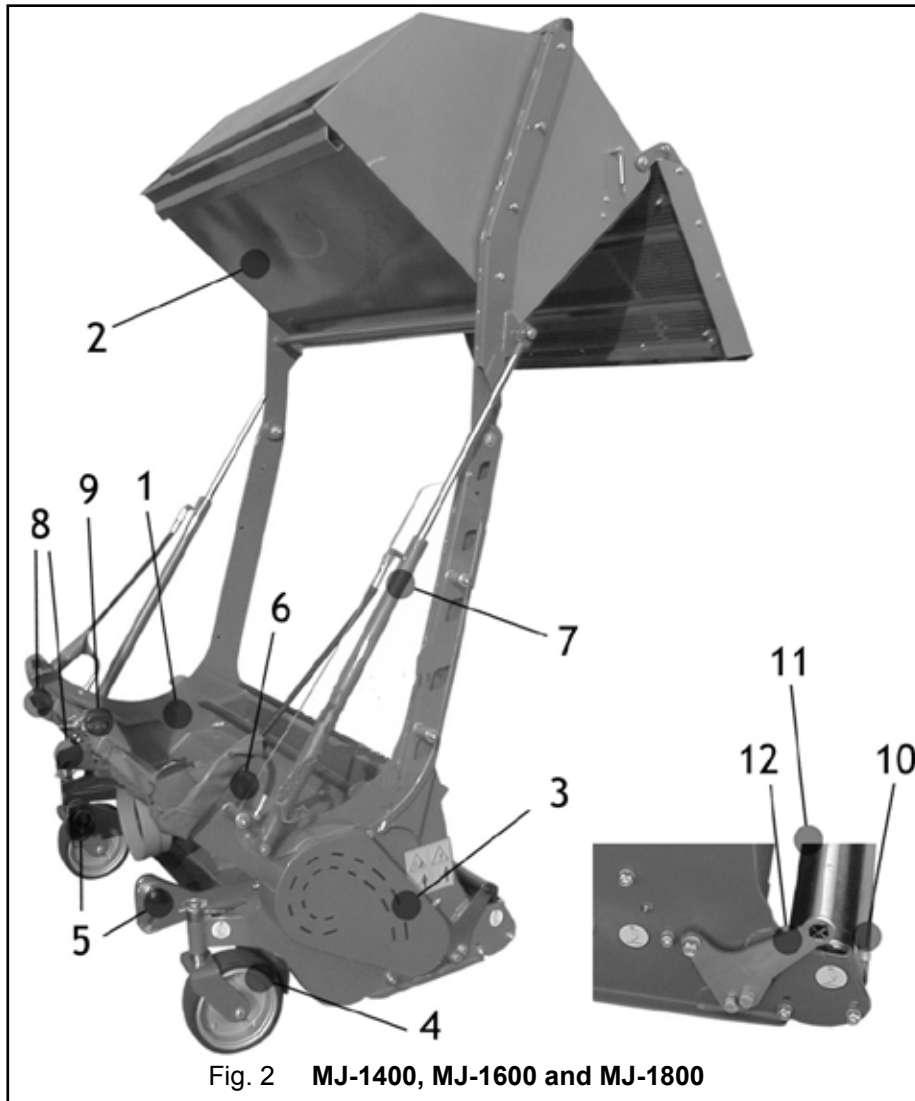
Operating the Machine

General description of the machine

The machine mainly consists of a steel frame which is the support for all the other components of the machine; it is designed to comply with safety regulations and to guarantee a perfect chopping of the product without having to use excessive power.

The machine is designed to be installed on the rear part of the tractor. The machine must be connected to the tractor by using a 3 point linkage connection. The displacement of the connecting device could be manual or mechanical.

Inside the main body there is a rotor which is supported by two high resistance bearings and it is operated by transmission belts. The rotor is dynamically balanced to obtain a correct rotation with no vibrations. The rotor is equipped with a blades or flail, which assure the perfect chopping of the product and good ventilation.



1	Frame chassis	7	Hydraulic ram
2	Collection box	8	Hydraulic hose connections
3	Belts cover	9	3 point linkage
4	Castor wheels	10	Scraper bar
5	Linkage	11	Roller
6	Gearbox	12	Roller adjuster

Connection to the tractor

As the connecting arms of the tractor has often a different length from one to the other, it is necessary to determine the adequate position for each one by lengthening or shortening the upper connecting arm of the tractor, also known as 3 point linkage (fig. 3 **D**), and/or, if necessary, shortening the PTO shaft, as described in this manual. The connection of the machine to the shredder shall be done as in fig. 3 below.

The flail mower can be connected to the tractors which have a "UNIVERSAL" 3 point linkage connection of category 1.



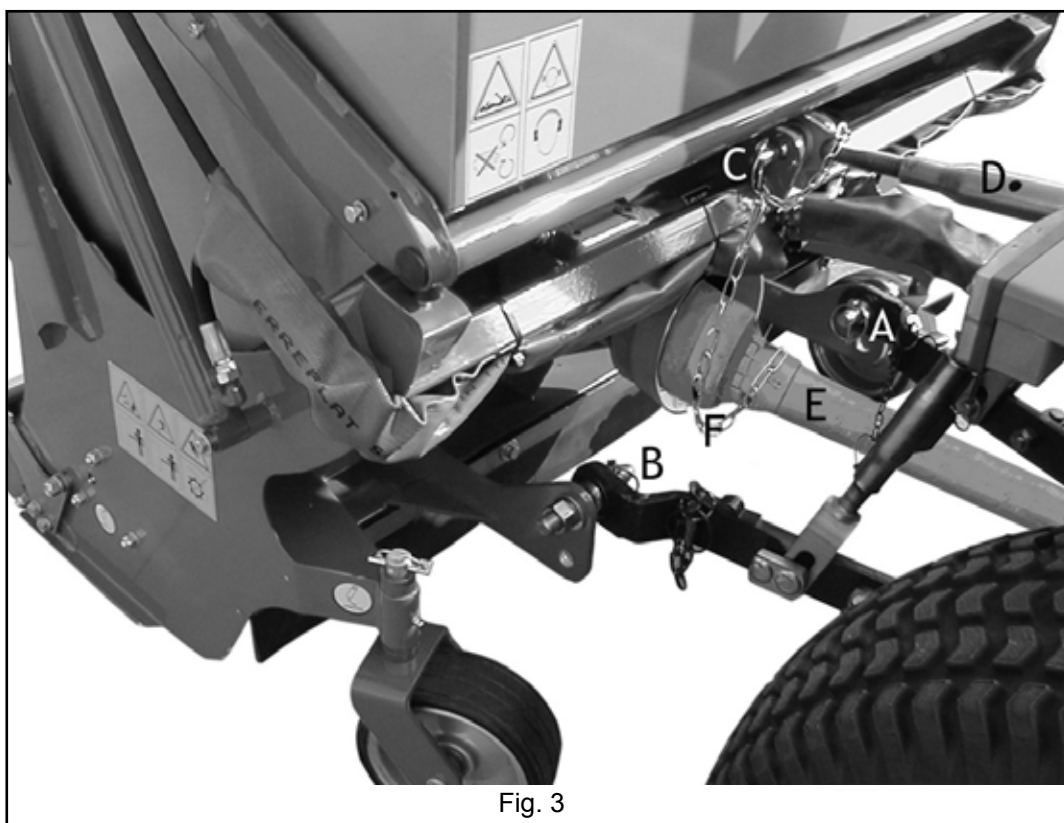
Do not stand between the tractor and the machine during the connection and disconnection operations.
Danger of crushing



The collection box must be in working position (as shown in figure 3), during the connection and disconnection operations.

Connection procedure:

- 1) Place the raising device bars inside the connecting device of shredder (see **A - B** points, figure 3).
- 2) Insert the pins to block the connection between the shredder and the tractor and block them with the safety pins.
- 3) Insert the shaft and check that it is correctly blocked, as in figure 13 **E**.
- 4) Lock the connecting bars by means of the proper chains and tighteners.
- 5) Connect the linkage bars (figure 3 **C**) making sure that the machine is perfectly parallel to the ground.
- 6) Check that the power of the tractor is suitable to control and operate the machine when working or during transport.



Connection of hydraulic hoses

Before connecting the machine's quick couplings to the tractor, it is compulsory to turn off the engine of the tractor, to wear protective gloves, and glasses for protecting eyes from eventual oil's squirts.



It is compulsory to operate with the collection box closed, so that machine doesn't throw stones or other objects.

Transport position

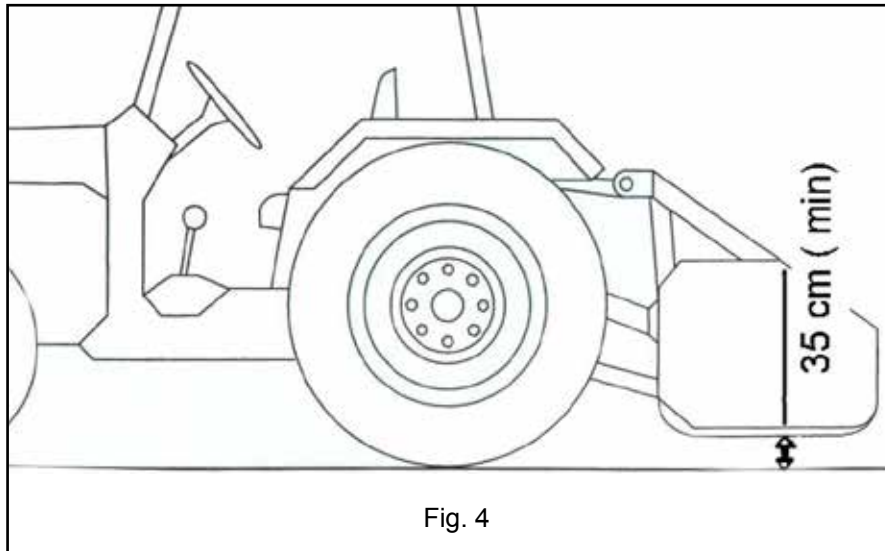
During the transport and any time the machine shall be raised, the raising device shall be adjusted to assure that the machine is 35cm over the ground (see Fig. 4).



Before raising the machine wait until the transmission and the rotor are completely still.



During the transport of the machine the PTO shaft must be disconnected.



Before operating the machine make sure that:

- Machine is in a working order;
- Machine is correctly connected to the tractor (as described in this manual);
- Hydraulics are correctly connected to the tractor and are fully functionable;
- Safety chains are fastened on the PTO shaft;
- Machine is parallel to the ground;
- All safety devices and equipment are operational and used;
- The area is clear of bystanders.

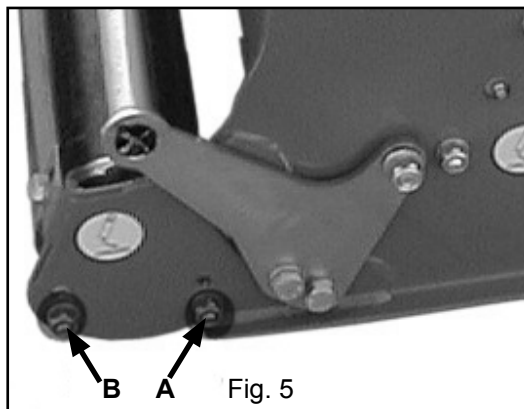
Position of the machine on the ground

Before starting working, check the position of the flails respect to the ground. If the flails touch the ground, adjust the levelling and support roller and the side skids.

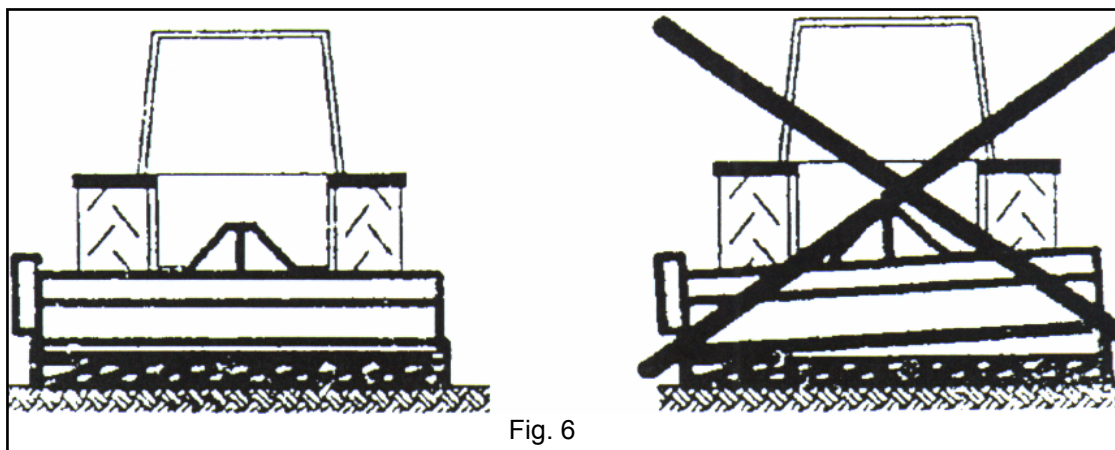
Adjustment of the levelling and supporting roller

To adjust the levelling and supporting roller, please proceed as follows (Fig. 5):

- 1) Loose the screws position A and remove the screws position B;
- 2) Move the support in the required position, insert the screws B again and block them with the nuts A and B;
- 3) Repeat the check and put the machine on the ground and parallel to it.



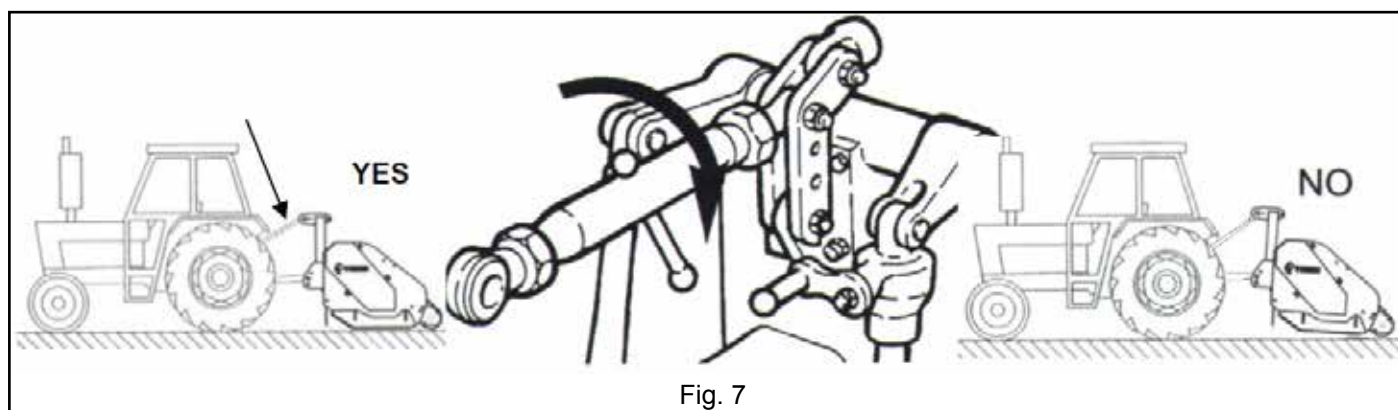
Before making any adjustments to the machine, turn off the tractor engine, remove the key and apply the handbrake. Make sure that the machine is parallel to the ground (Fig. 6).



Adjustment of the 3 point linkage

The machine shall be perfectly parallel to the ground to obtain a correct chopping of the product.

The adjustment shall be done by operating the top link (see Fig. 7).



Working position and adjustment

The machine must be positioned on the same central axis of the tractor, as figure 8 shows. The adjustment shall be done by regulating the bars of the first and second point connection of the tractor (point A and B).

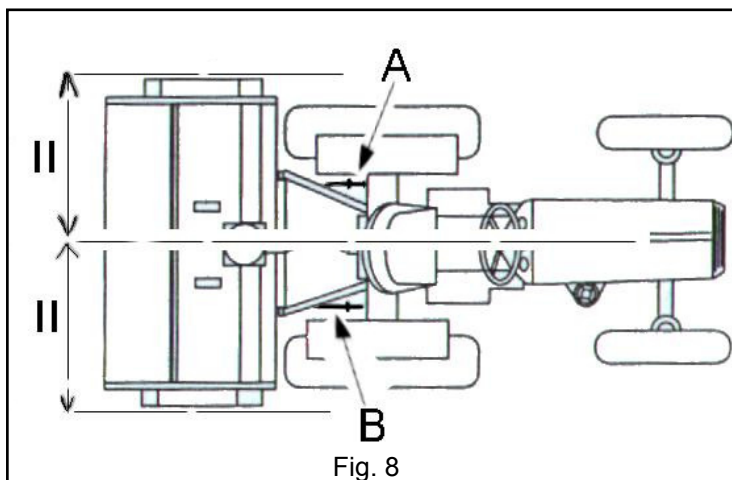


Fig. 8

Precautions to be taken while working with the shredder

- 1) Do not operate the shredder when you are tired;
- 2) Before starting shredding, make sure that the area is clear of people or animals.
- 3) Before starting adjusting the machine, it is mandatory to disconnect the PTO, to turn off the engine of the tractor, apply handbrake and wait for the shredder to become still and placed on the ground.
- 4) It is mandatory to read all the safety requirements and the operator's manual of the machine.
- 5) If you are not sure how to use the shredder, please contact the manufacturer of the machine.



While operating the machine do not exceed the speed of 10 km/h

Discharging process

- Ensure the tractor is on level ground;
- Do not tip the grass tank (hopper) while in inclined positions;
- Ensure there are no bystanders around the machine;
- Power the appropriate hydraulic spool from the tractor cab to empty the catcher;
- The grass catcher tips up over backwards emptying the contents;
- Reverse action on the hydraulic spools will lower the catcher; continue to hold the spool in position and the chute will fall back into operating position;
- Do not try to force the discharge operation in case of machine malfunction. Please get in touch immediately with your dealer, should the tank remain jammed in high position.



While discharging, disconnect the PTO shaft from the machine



Fig. 9

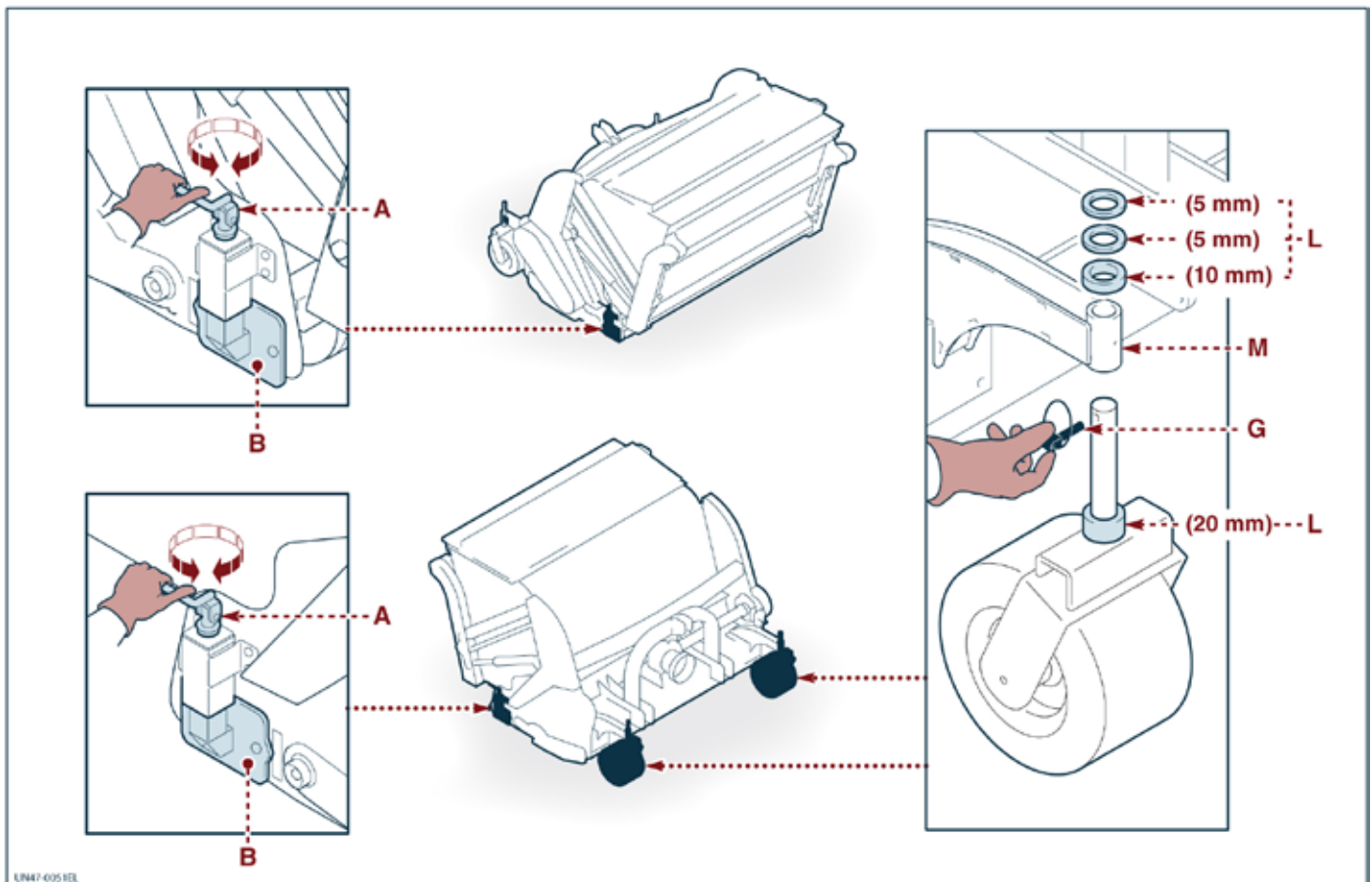
Adjustment of roller and front wheels (MJ27-160/180/200)

Any time adjustment is carried out the following instructions are mandatory:

- PTO must be disconnected
- Put the machine down on the ground
- Never stand behind the machine when the tractor is running.

To adjust the height of the roller and the front wheels follow the procedure:

1. Lift the machine the bare minimum to make the adjustment.
2. Support the raised machine with suitable means to prevent it falling accidentally and causing injury to persons involved in the operations.
3. Lift and rotate the levers (A) the same amount to raise or lower the levelling roller from the ground.
 - The change of position of the levelling roller is indicated by the graduated scale (B).
 - Raise the roller to bring tools closer to the ground.
 - Lower the roller to distance tools from the ground.
4. When finished lower the levers (A).
5. Remove the pin (G).
6. Add or remove spacers (L) from above or below the support (M) as required (to raise or lower the wheel).
7. Insert the pin (G).
8. Repeat the same procedure to adjust the other wheel.
9. Lower the machine onto the ground.



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Maintenance

Any time you perform maintenance the following instructions are mandatory:

- Disconnect the PTO
- Put the machine down on the ground
- Never stand behind the machine when the tractor is running.

1. After every 50 working hours, check the oil level of the gear box (point B figure 10) and fill with oil if necessary (point A). Change the oil of the gear box after the first 160 working hours, and subsequently after any 400 working hours; the oil discharge point C is under the gear box. Lubricant type: SAE EP90 gear oil.
2. After every 20 working hours, lubricate the roller supports and the rotor through the lubricant points D/E figure 10 on both the sides of the machine.
3. After every 20 working hours lubricate castor wheel pivot points F.
4. After every 100 working hours, check the machine and its safety protections by authorised workshops.



Always disengage PTO, Switch off tractor engine and engage the parking brake before making adjustment to the machine

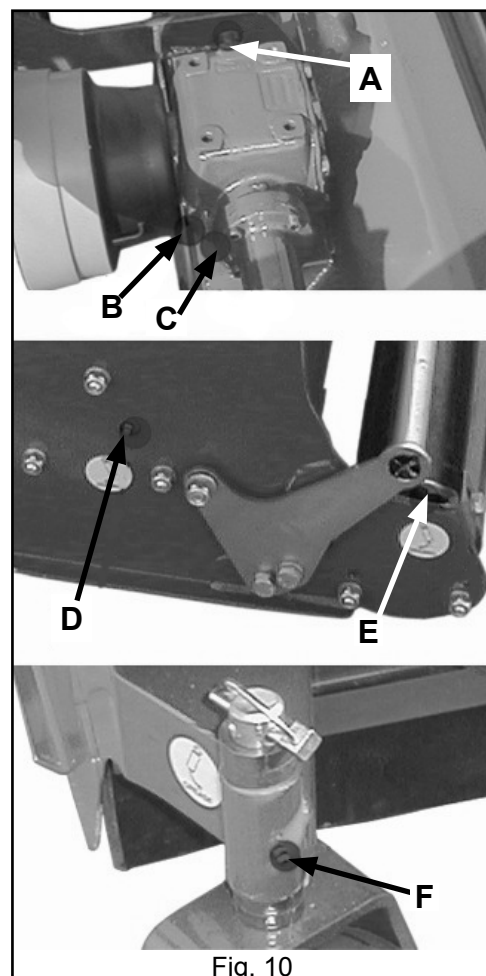


Fig. 10

Adjustment and replacement of belts (MJ1400-1600)

The belts shall be checked and adjusted after the first 5 working hours. The next check of the belt tension shall be done after every 50 working hours.

Operations for the removal and adjustment of the belts:

- 1) Remove the guard which protects the belts;
- 2) Loosen the locking bolts which lock the gear box and the side transmission (screws H).
- 3) The belts must be removed one by one and be replaced by a new kit.
- 4) Check the tension of the belts at the central point; apply a force of about 9kg at the centre to obtain a deviation of about 6-8mm (see Fig. 11).
- 5) Tighten the locking screws of the gear box checking that the axis is parallel to the machine. If the transmission is not parallel to the machine, the belts wear out quickly.
- 6) Correctly assemble the transmission and fasten the guard to protect the belts.

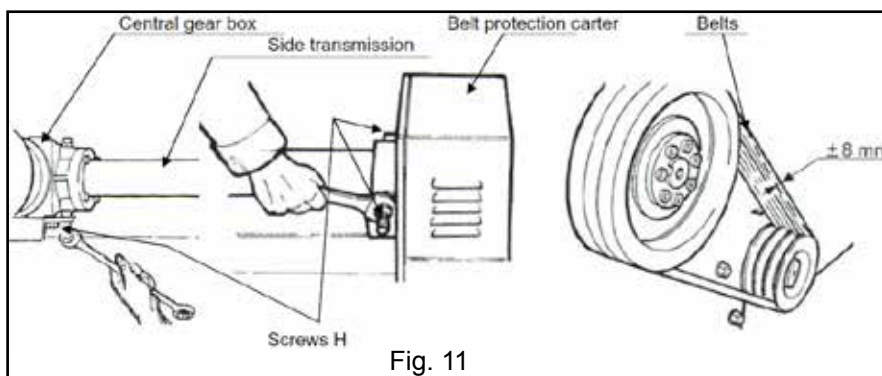


Fig. 11

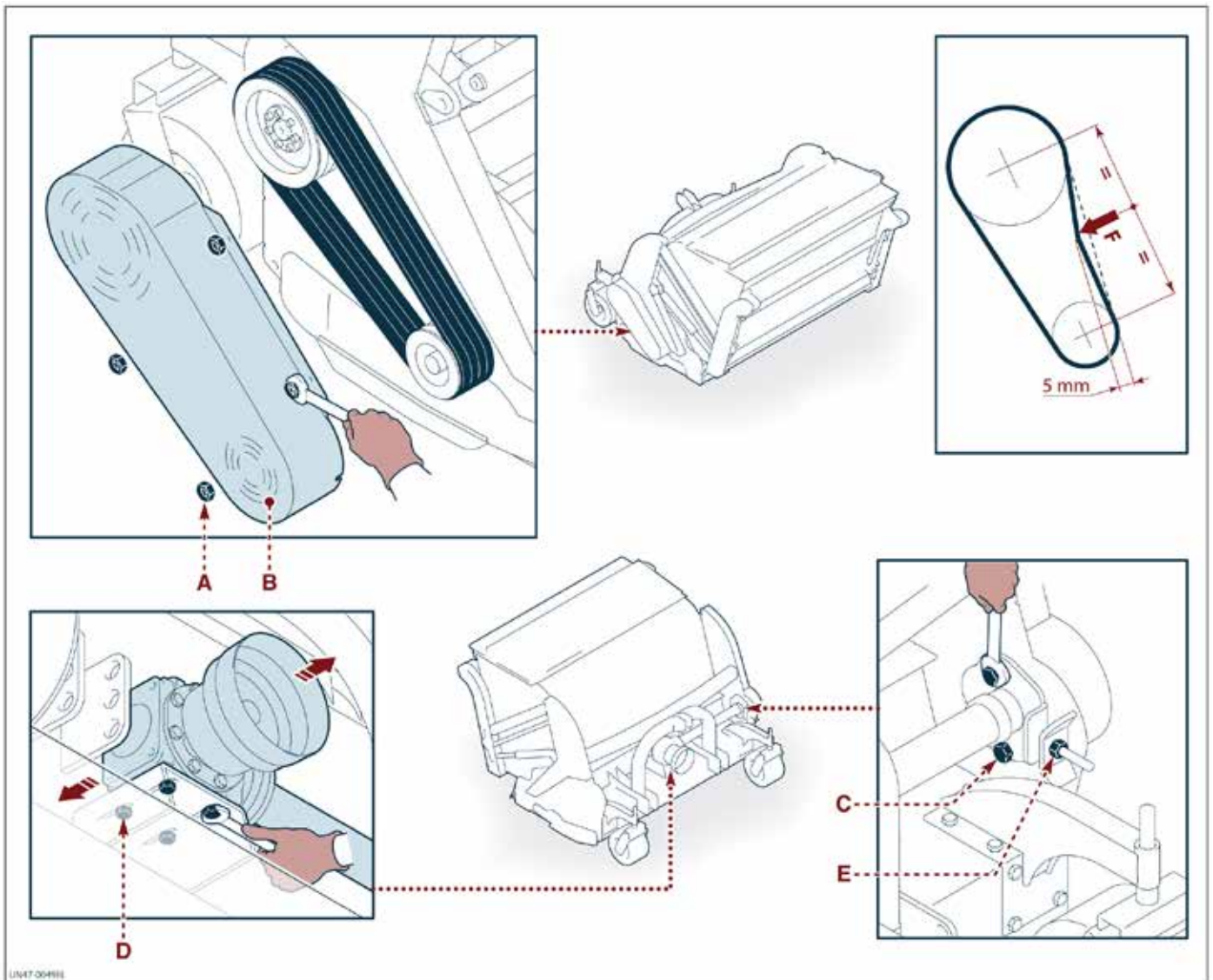
Belt adjustment (MJ27-160/180/200)

Any time adjustment is carried out the following instructions are mandatory:

- PTO must be disconnected
- Put the machine down on the ground
- Never stand behind the machine when the tractor is running.

To adjust the height of the roller and the front wheels follow the procedure:

1. Unscrew the nuts (A).
2. Remove the fixed guard (B).
3. Loosen the screws (C).
4. Loosen the screws (D).
5. Turn the nut (E) to adjust the belts tension.
To adjust the belts tension, apply a force (F) of 55 Nm (see figure).
The force applied (F) should cause a deflection of the belt of about 5 mm.
6. Tighten the screws (C).
7. Move the gearbox on its support in parallel to the machine frame.
8. Tighten the screws (D).
9. Mount the fixed guard (B).
10. Tighten the nuts (A).



Replacement of the blades and hammers

After every 100 working hours, check the condition of blades or hammers. If some blades or hammers are worn or broken or missing, the complete blade or hammer kit shall be replaced. If only some blades or hammers are replaced, the others could unbalance the rotor during the operation of the shredder and high vibrations could arise and damage the machine or the rotor.



IT IS VERY IMPORTANT TO CHECK ALSO IF THE SCREWS ARE WORN, IF THEY ARE WORN IT IS MANDATORY THAT THEY ARE SUBSTITUTED BY MANUFACTURER'S ORIGINAL SCREWS.

Do not replace the blades or the hammers by rising the shredder by means of the tractor: it is extremely dangerous for your and other people's safety.

In order to change blades or hammers, please follow the instructions below:

- 1) Disconnect the machine from the tractor.
- 2) Turn the machine on the side on a perfectly plain ground.
- 3) Replace the blades and hammers as shown in the assembly Fig. 14. Carefully tighten the screws.
- 4) When the blades or hammers are replaced, carefully lower the machine.

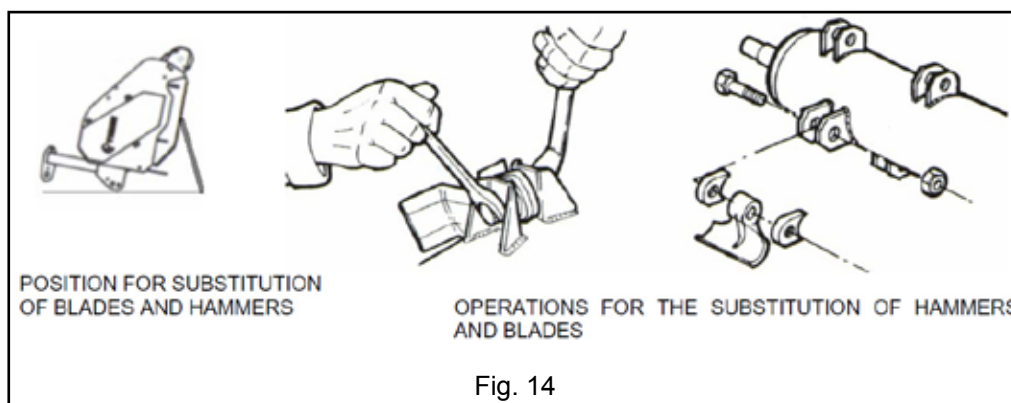


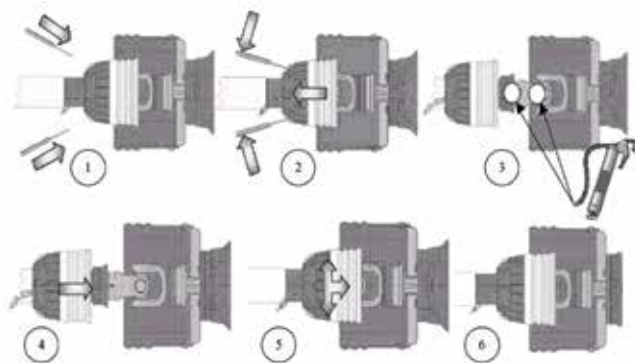
Fig. 14

P.T.O. Maintenance

The machine must always be disconnected from the tractor before any cleaning, lubricating and servicing operations can be carried out. Maintenance must be carried out by qualified personnel

If emergency operations are required whilst the machine is connected to the tractor, switch off the engine, engage the parking brake and disengage the PTO.

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



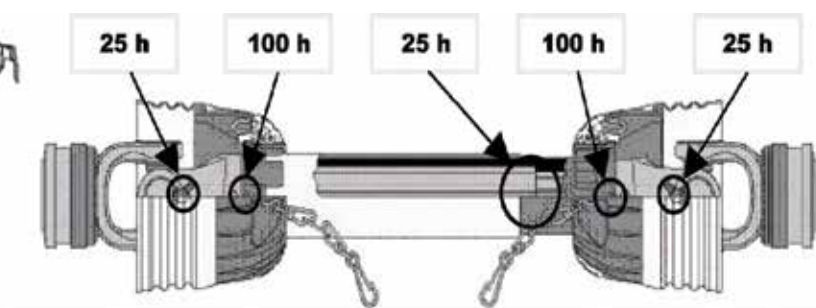
PTO Shaft Maintenance

Guard Removal and Yoke End Greasing

1. Prise back locking tabs
2. Pull back PTO Guard
3. Grease points as shown
4. Push Guard into position
5. Click into place
6. Tie check chain



PTO Guard Greasing Intervals

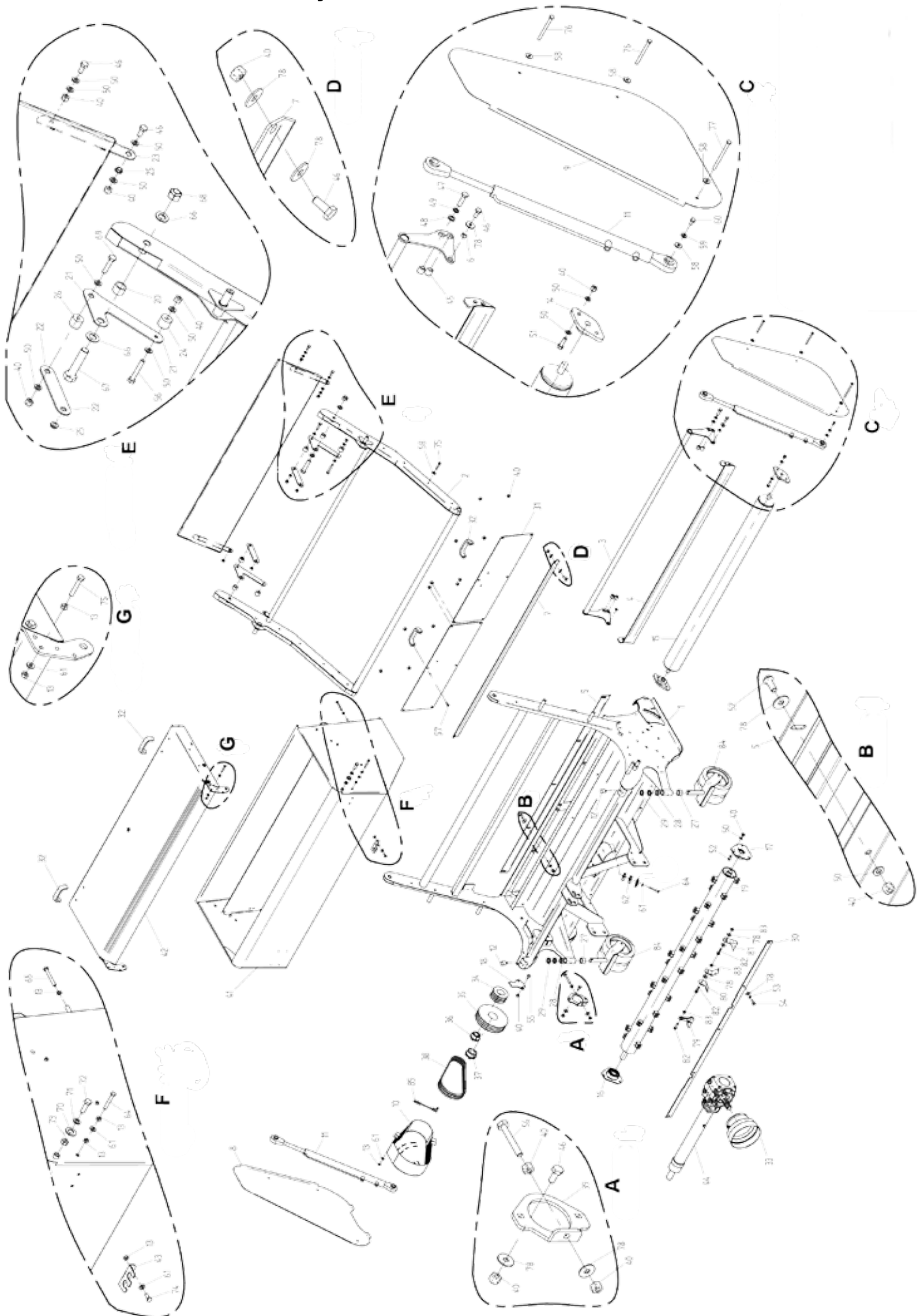


Troubleshooting

Fault	Cause	Remedy	
Leaves a streak of uncut or partially cut grass	Carrier RPM too low	Use correct PTO speed	
	Ground speed too fast	Reduce ground speed by shifting to a lower gear	
	Possible build-up materials under shredder	Clean the machine	
	Blades mounted incorrectly (cutting edge against direction rotation)	Change blades so that cutting edge is facing correct rotation.	
Material discharges from machine unevenly; bunches of material along with swath	Material too high and too much material	Reduce ground speed but maintain tractor PTO or make two passes over material. Raise mower for the first pass and lower to desired height for the second and cut a 90 degree angle to first pass	
Gearbox overheating	Low on lubricant	Fill to proper level	
	Improper type lubricant	Replace with proper lubricant	
Flails are scalping the ground	Machine too low	Raise the machine	
	Field is ridged	Cut field at a different angle	
	Field is too wet	Stop and wait until it is dried	
Shredder will not cut.	Shear bolt sheared	Install new shear bolt	
Flails wear too fast	Cutting in sandy conditions	Increase cutting height	
	Cutting in rocky conditions	Increase cutting height	
	Flails hitting ground	Increase cutting height	
Machine seems to require excessive power	Advancing into grass too rapidly	Reduce forward travel speed	
	Hitting ground	Raise the machine	
	Worn or dull flails	Sharpen or replace flails	
	Tractor not large enough	Use larger horsepower tractor	
	Belts are torn	Replace belts	
Excessive vibration	Check gearbox bolts	Tighten if loose	
	Wires around the rotor	Clean the rotor	
	Flails broken	Replace flails in sets	
	New flail or bolts matched with worn flails or bolts	Replace blades or bolts in sets	
	Damage to the rotor or the driveline of the shredder	Phase the driveline. Verify the balance of the rotor of the machine by authorised workshop.	
	Worn bearing	Replace bearings	
Noisy machine	Worn bearing	Replace bearings	
	Low oil in gearbox	Check level and add oil	
	Loose Parts	Check all bolts are fully tightened	
	Wrong PTO rpm rate	Check PTO rate & adjust as necessary	
	Rotors bent / broken	Replace bent or missing blades	
	Bent PTO shaft	Check PTO shafts are aligned correctly	
		Check output shaft on gearboxes are not bent	
Check driveline between gearbox and pulley is aligned.			
Gearbox leaking	Damaged oil seal	Replace seal	
	Bent shaft	Replace oil seal and shaft	
	Shaft rough in oil seal area	Replace or repair shaft	
	Oil seal installed incorrectly	Replace seal	
	Oil seal not sealing in the housing	Replace seal or use a sealant on outside diameter of seal	
	Oil level too high	Drain oil to proper level	
	Hole in gearbox	Replace the gearbox	
	Gasket damaged	Replace gasket	
	Bolts loose	Tighten bolts	

Spare Parts

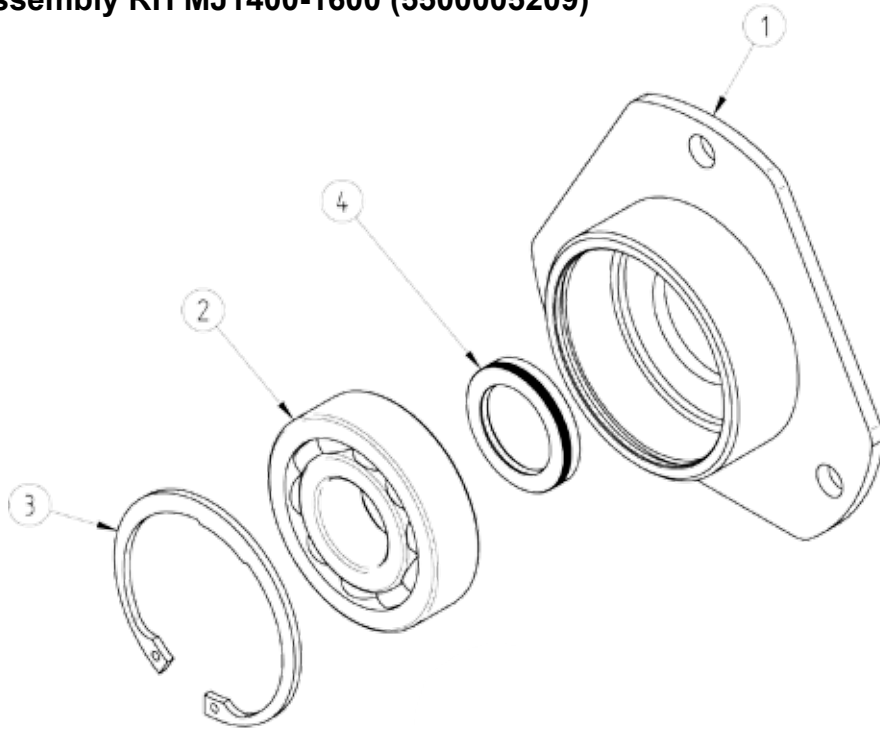
MJ-1400 and MJ-1600 Assembly



MJ-1400 and MJ-1600 Assembly

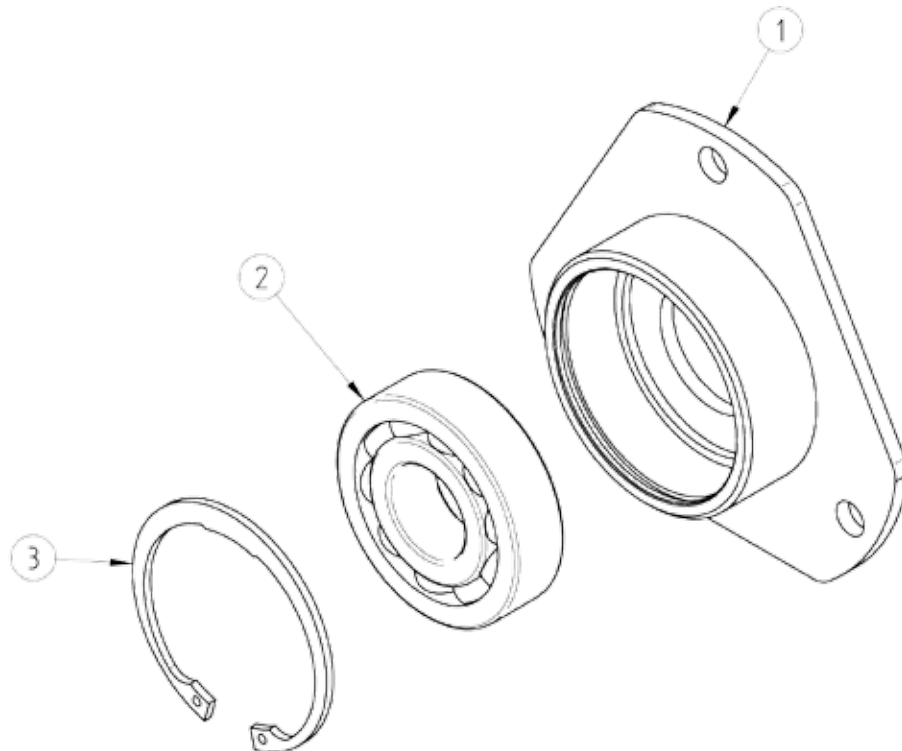
Item	Part No	Description	Qty			
				38	1600000201	BELT A39 3
				39	1600000127	BELT TENSIONER PLATE 1
				40	M10	M10 NYLOC NUT 24
1	1614015101_5	BOGEY MJ-1400	1	41	1614006201_1	HOPPER MJ-1400 1
1	1616015101_5	BOGEY MJ-1600	1	41	1616006201_2	HOPPER MJ-1600 1
2	1614006202_2	OUTLET CHUTE MJ-1400	1	42	1614006205_1	HOPPER LID MJ-1400 1
2	1616006202_2	OUTLET CHUTE MJ-1600	1	42	1616006205_1	HOPPER LID MJ-1600 1
3	1614006206	ADJUSTER MJ-1400	1	43	1600000801	HYDRAULIC HOSE HANGER 1
3	1616006206	ADJUSTER MJ-1600	1	44	0000005301	GEARBOX 1
4	1614006207	SCRAPER MJ-1400	1	45	1600000120_1	BUSH 4
4	1616006207	SCRAPER MJ-1600	1	46	M10x25BZP	M10x25 BOLT 5
5	1614001215	REAR SCRAPER MJ-1400	1	47	M12x45BZP	M12x45 BOLT 1
5	1616001215	REAR SCRAPER MJ-1600	1	48	FWM14	M14 FLAT WASHER 1
6	1600000121	BUSH	2	49	SWM12	M12 SPRING WASHER 1
7	1614001213_1	ROLLER SCRAPER MJ-1400	1	50	FWM10	M10 FLAT WASHER 12
7	1616001213_1	ROLLER SCRAPER MJ-1600	1	51	M10x35BZP	M10x35 BOLT 1
8	1600000601_1	RAM GUARD RH	1	52	M10x25BZP	M10x25 BOLT 2
9	1600000603_1	RAM GUARD LH	1	53	SWM10	M10 SPRING WASHER 1
10	1600000602	BELT GUARD	1	54	M10x30BZP	M10x30 BOLT 1
11	5500006105	RAM	2	55	M10x20BZP	M10x20 BOLT 1
12	1600001218	CAP	2	56	M10x70BZP	M10x70 BOLT 2
13	M8	M8 NYLOC NUT	9	57	M6x20BZP	M6x20 BOLT 1
14	5500000402	BEARING UCFL 205	2	58	FWM8L	M8 FLAT WASHER LARGE 5
15	5514005401_1	ROLLER MJ-1400	1	59	SWM8	M8 SPRING WASHER 1
15	5516005401_1	ROLLER MJ-1600	1	60	M8x16BZP	M8x16 BOLT 1
16	5500005209	ROTOR BEARING ASSEMBLY RH	1	61	FWM8	M8 FLAT WASHER 5
17	5500005210	ROTOR BEARING ASSEMBLY LH	1	62	SP215/DOU	1/4" DOUBLE HOSE CLAMP KIT 4
18	5500000602	COVER	1	64	M8x60BZP	M8x60 BOLT 2
19	5514005205	ROTOR MJ-1400	1	65	M8x70BZP	M8x70 BOLT 1
19	5516005205	ROTOR MJ-1600	1	66	FWM20	M20 FLAT WASHER 2
20	1600001228	BUSH	2	67	M20x90BZP	M20x90 BOLT 1
21	1600001219	ROTATION BRACKET	2	68	M20	M20 NYLOC NUT 1
22	1600001220	SUPPORT PLATE	2	69	M10x50BZP	M10x50 BOLT 1
23	1614001225_1	CHUTE FLAP MJ-1400	1	70	FWM18	M18 FLAT WASHER 1
23	1616001225_1	CHUTE FLAP MJ-1600	1	71	FWM12	M12 FLAT WASHER 1
24	1600001227	BUSH	2	72	M12x40BZP	M12x40 BOLT 1
25	M10	M10 NYLOC NUT	4	73	M12	M12 NYLOC NUT 1
26	1600001226	BUSH	2	74	M8x20BZP	M8x20 BOLT 1
27	32201581	BUSH Ø 38/25.4 Sp 20	2	75	M8x50BZP	M8x50 BOLT 2
28	32201582	BUSH Ø 38/25.4 Sp. 10	2	76	M8x100BZP	M8x100 BOLT 2
29	32201583	BUSH Ø24,5	4	77	M8x120BZP	M8x120 BOLT 1
30	1614000601_3	RUBBER FLAP MJ-1400	1	78	FWM10L	M10 FLAT WASHER LARGE 10
30	1616000601_2	RUBBER FLAP MJ-1600	1	79	5500000210	FLAIL -
31	1614000118_2	INSPECTION COVER MJ-1400	2	80	5500000213	KNIFE -
31	1616000118_1	INSPECTION COVER MJ-1600	2	81	5500000214	LIGHT FLAIL -
32	1600000119	HANDLE	4	82	M10x40BZP	M10x40 BOLT 3
33	0000000613	PTO GUARD	1	83	M10	M10 NYLOC NUT 3
34	5200000168	PULLEY SPA 100/3-55	1	84	1600005902	WHEEL MJ-1600 2
35	5500000208	PULLEY SPA 200/3 65	1	84	5500005905	WHEEL MJ-1400 2
36	5200000169	LOCKING BUSH RCK 30/55	1	85	1000005201	GREASE TUBE 1
37	5200000307	LOCKING BUSH RCK 40/65	1			

Rotor bearing assembly RH MJ1400-1600 (5500005209)

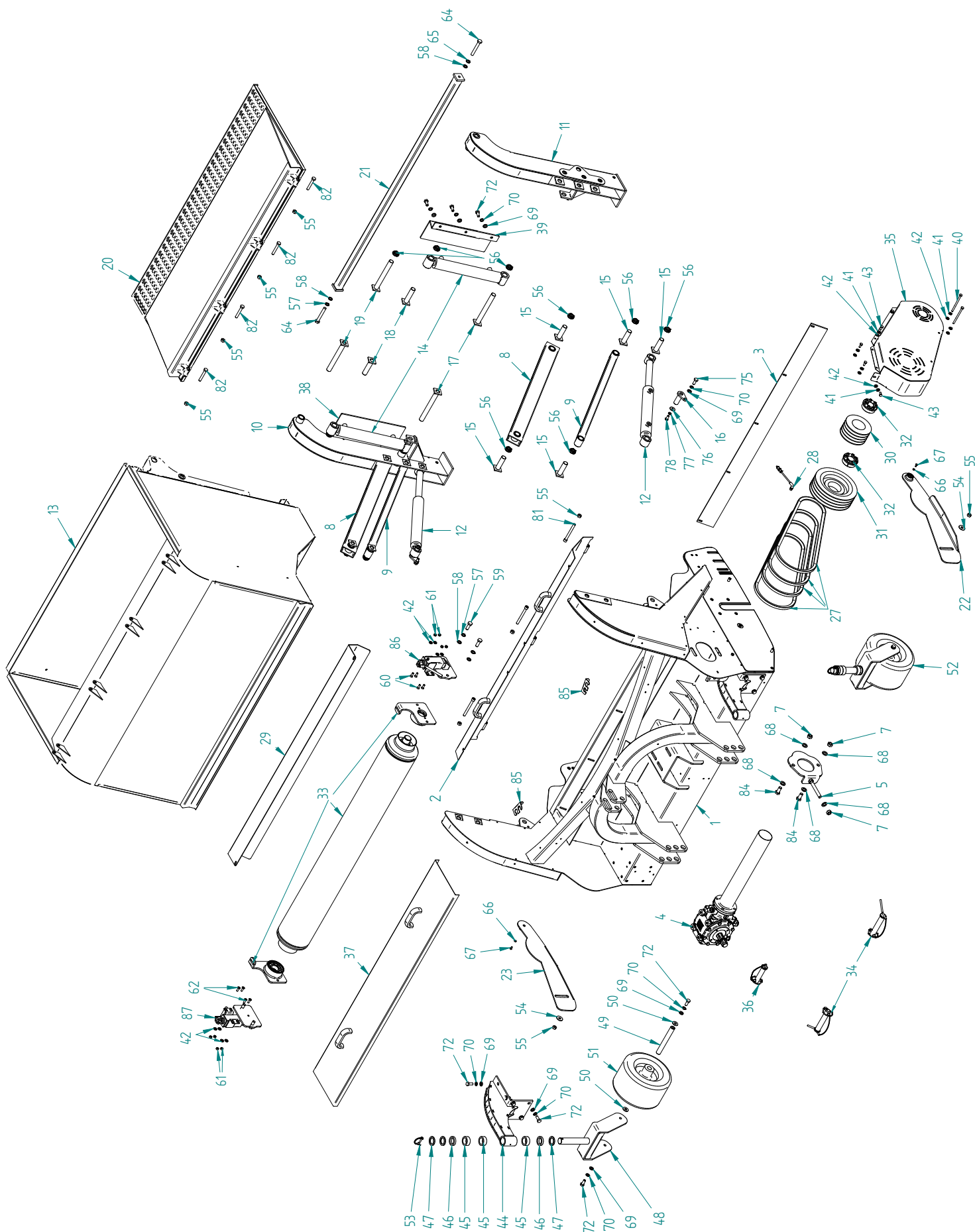


Item	Part No	Description	Qty
1	5500005201	BEARING HOUSING	1
2	1600000906	BEARING	1
3	0000000409	CIRCLIP INT72	1
4	5500000405	SEAL 30x42x7	1

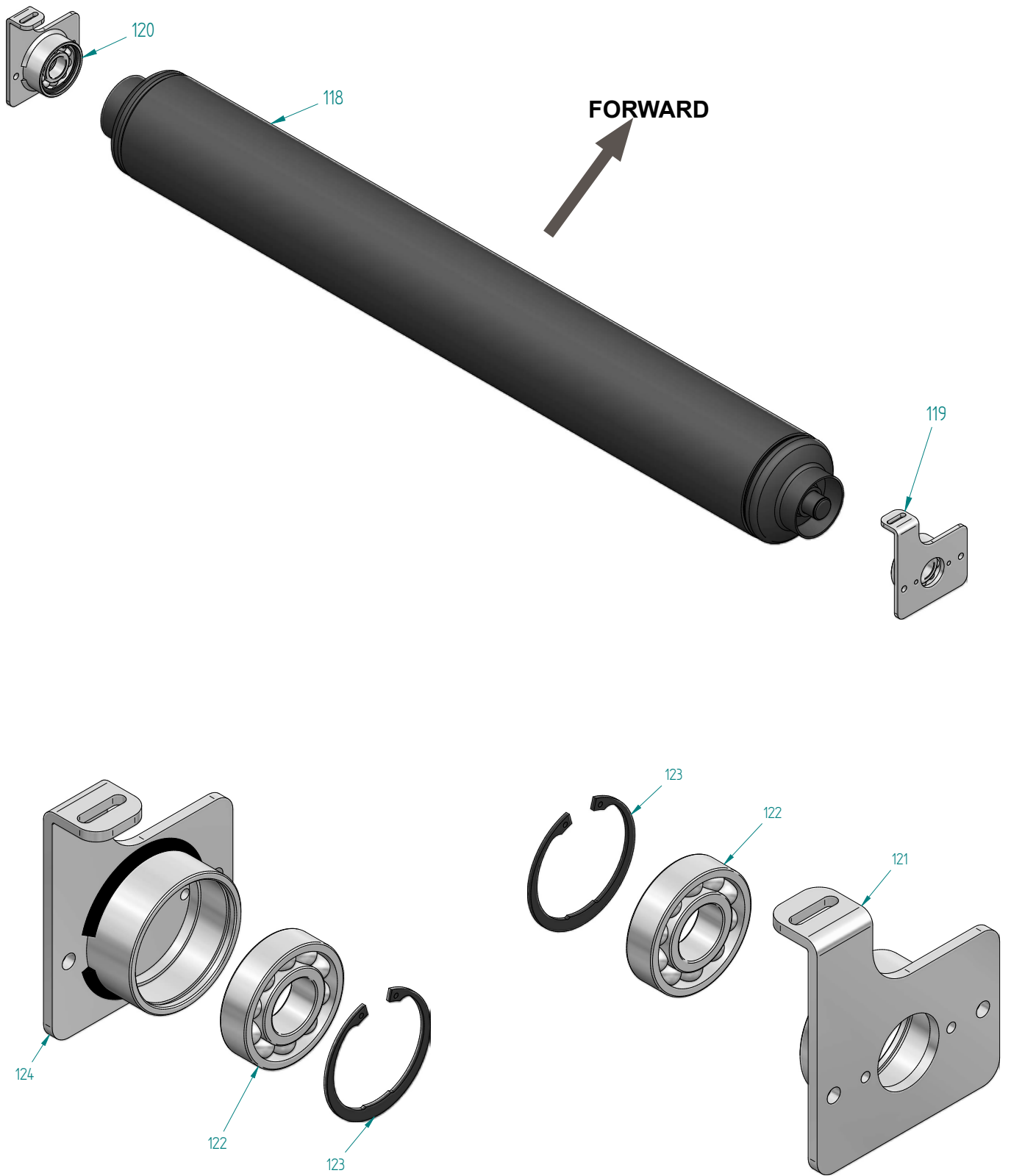
Rotor bearing assembly LH MJ1400-1600 (5500005210)



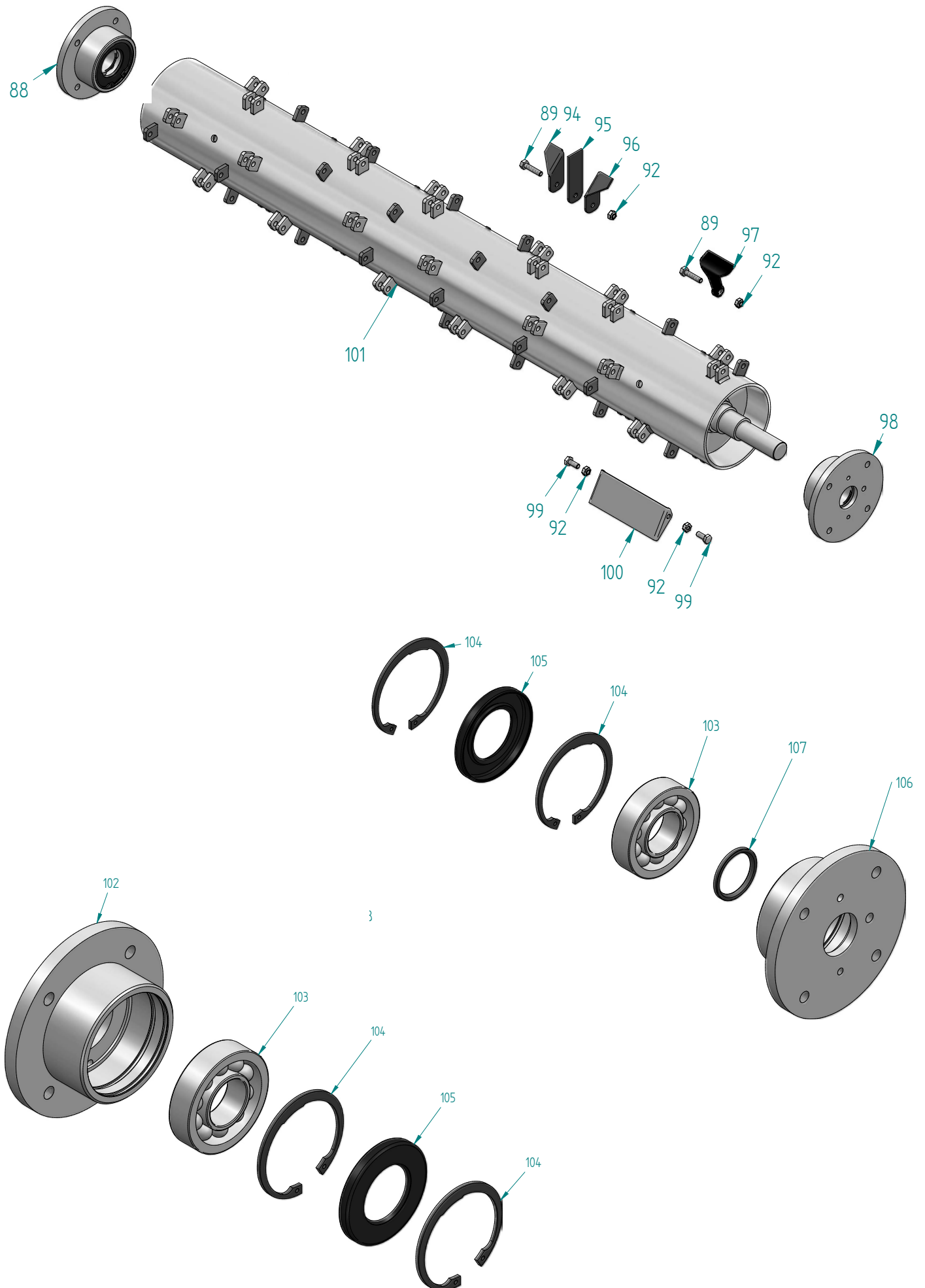
Item	Part No	Description	Qty
1	5500005201	BEARING HOUSING	1
2	1600000906	BEARING	1
3	0000000409	CIRCLIP INT72	1



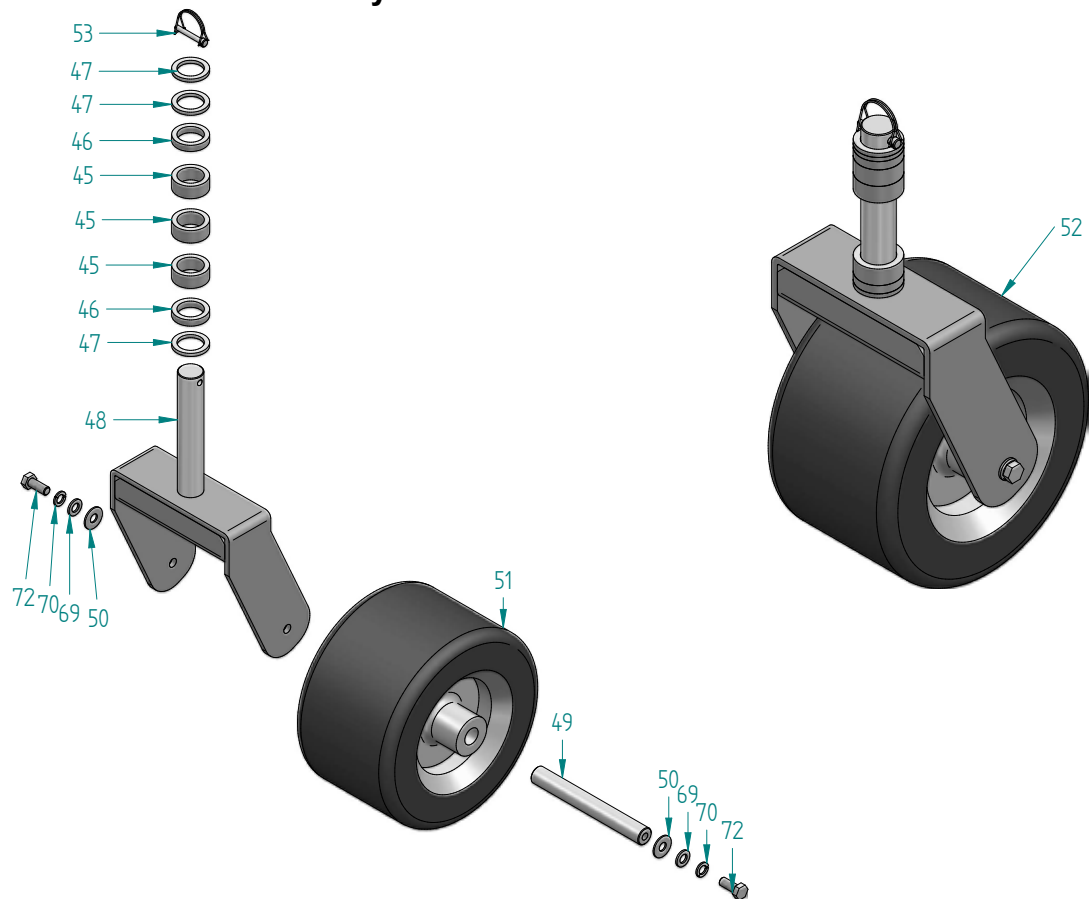
MJ27-160/180/200 Roller assembly



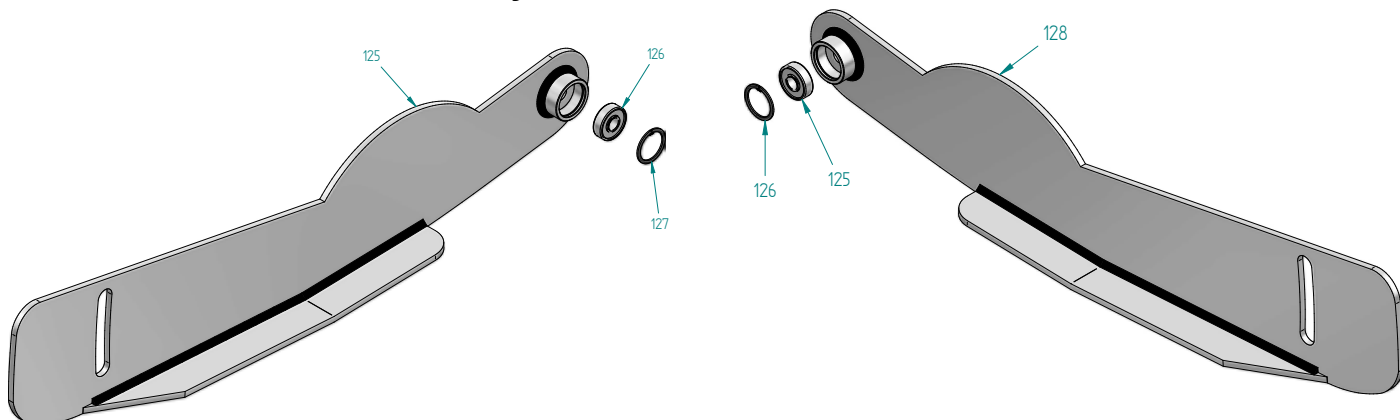
MJ27-160/180/200 Rotor assembly



MJ27-160/180/200 Wheel Assembly



MJ27-160/180/200 Skids assembly




MJ27-160/180/200 Parts list

Item	Part No	Description	Qty				
				28	1000005201	Grease kit	1
1	1416005101_3	Body MJ27-160	1	29	1416000402_1	Scraper bar MJ27-160	1
1	1418005101_3	Body MJ27-180	1	29	1418000402_1	Scraper bar MJ27-180	1
1	1420005101_3	Body MJ27-200	1	29	1420000402_1	Scraper bar MJ27-200	1
2	1416005103	Hopper lid MJ27-160	1	30	0000000346	Pulley SPB 150/4-80	1
2	1418005103	Hopper lid MJ27-180	1	31	0000000343	Pulley SPB 250/4 F.80	1
2	1420005103	Hopper lid MJ27-200	1	32	0000000317	Locking ring RCK 40/80	2
3	1416000105	Flap MJ27-160	1	33	1416005401_2	Roller assembly MJ27-160	1
3	1418000105	Flap MJ27-180	1	33	1418005401_2	Roller assembly MJ27-180	1
3	1420000105	Flap MJ27-200	1	33	1420005401_2	Roller assembly MJ27-200	1
4	0000005317	Gearbox T311 - 810 - MJ27-160	1	34	0000000713	Linkage pin D28	2
4	0000005318	Gearbox T311 - 950 - MJ27-180	1	35	1400000604_3	Belt cover	1
4	0000005319	Gearbox T311 - 1060 - MJ27-200	1	36	0000030712	Pin	1
5	1400005301	Tensioner	1	37	1416005104	Hopper top cover MJ27-160	1
7	M16	M16 nyloc nut	3	37	1418005104	Hopper top cover MJ27-180	1
8	1400006101_1	Tie bar 1	2	37	1420005104	Hopper top cover MJ27-200	1
9	1400006102_1	Tie bar 2	2	38	1400001131_2	Hydraulic ram protector RH	1
10	1400006103_2	Tie support arm RH	1	39	1400001138	Hydraulic ram protector LH	1
11	1400006104_2	Tie support arm LH	1	40	M8x140	M8x140 bolt	2
12	1400001117	Tie arm hydraulic ram	2	41	SWM8	M8 spring washer	7
13	1416006201_2	Hopper MJ27-160	1	42	FWM8	M8 flat washer	15
13	1418006201_2	Hopper MJ27-180	1	43	M8x20	M8x20 bolt	5
13	1420006201_2	Hopper MJ27-200	1	44	1400005902_1	Castor wheel arm	2
14	1400001118_1	Hopper hydraulic ram	2	45	1400001135	Spacer Ø 50/36 Sp 20	3
15	1400006105	Pivot pin	10	46	1400001136	Spacer Ø 50/36 Sp.10	2
16	1400006106	Pivot pin	2	47	1400001137	Spacer Ø50/36 Sp.5	3
17	1400006107_1	Pivot pin	2	48	1400005904_1	Castor wheel yoke	1
18	1400006108_1	Pivot pin	2	49	8800000929	Castor wheel pin	1
19	1400006109_2	Pivot pin	2	50	1600000905	Washer	2
20	1416006202_3	Hopper top lid MJ27-160	1	51	8800000923	Wheel 11x7.10x5" KT M4-25x200	1
20	1418006202_3	Hopper top lid MJ27-180	1	52	1400005903_1	Castor wheel assembly *	1
20	1420006202_3	Hopper top lid MJ27-200	1	53	0000000716	Lynch pin	1
21	1416006110	Reinforcing bar MJ27-160	1	54	FWM12L	M12 washer large	2
21	1418006110	Reinforcing bar MJ27-180	1	55	M12	M12 nyloc nut	9
21	1420006110	Reinforcing bar MJ27-200	1	56		M25x1.5 nyloc nut	14
22	1400005501	Skid LH *	1	57	SWM14	M14 spring washer	3
23	1400005503	Skid RH *	1	58	FWM14	M14 flat washer	6
27	1400000302	Belt XPB L1550	4	59	M14x40	M14x40 bolt	4

60	M8x25	M8x25 bolt	4	94	1400000212	Blade RH	1
61	M8	M8 nyloc nut	8	95	1400000214	Blade Centre	1
62	M8x25	M8x25 bolt	4	96	1400000213	Blade LH	1
63	SWM14	M14 spring washer	2	97	77T	Flail	2
64	M14x100	M14x100 bolt	2	98	1400005208	Bearing assembly LH (Rotor 1) *	1
65	SWM14	M14 spring washer	1	99	M10x25	M10x25 bolt	2
66	FWM6	M6 flat washer	2	100	1400000208	Air pad	2
67	M6x12	M6x12 bolt	2	101	1416005204	Rotor 1 MJ27-160	1
68	FWM16	M16 flat washer	5	101	1418005204	Rotor 1 MJ27-180	1
69	FWM12	M12 flat washer	26	101	1420005204	Rotor 1 MJ27-200	1
70	SWM12	M12 spring washer	14	102	1400005206	Bearing flange plate RH (Rotor 1)	1
71	M12x30	M12x30 bolt	2	103	0200000117	Bearing 21310	1
72	M12x30	M12x30 bolt	26	104	0200000118	Circlip d110	2
73	SWM12	M12 spring washer	8	105	0200000119	Oil seal 60x110x12	1
74	SWM12	M12 spring washer	3	106	1400005209	Bearing flange plate LH (Rotor 1)	1
75	M12x25	M12x25 bolt	2	107	020000120	oil seal 50x62x5	1
76	FWM10L	M10 washer large	2	118	1416005402	Roller MJ27-160	1
77	SWM10	M10 spring washer	1	118	1418005402	Roller MJ27-180	1
78	M10x25	M10x25 bolt	2	118	1420005402	Roller MJ27-200	1
79	SWM12	M12 spring washer	1	119	1400005403_2	Roller bearing assembly RH *	1
80	SWM10	M10 spring washer	1	120	1400005401_2	Roller bearing assembly LH *	1
81	M12x120	M12x120 bolt	3	121	1400005404_2	Roller bearing flange plate RH	1
82	M12x80	M12x80 bolt	4	122	0000000411	Bearing 90-40-23	1
84	M16x35	M16x35 bolt	2	123		Circlip I52	1
85	1600000801	Hose bracket	2	124	1400005402_1	Roller bearing flange plate LH	1
86	1400005410	Roller height adjuster RH	1	125	1400005502	Skid LH	1
87	1400005411	Roller height adjuster LH	1	126		Bearing 32-12-10	1
88	1400005207	Bearing assembly RH (Rotor 1) *	1	127		Circlip I32	1
89	M10x45	M10x45 bolt	4	128	1400005504	Skid RH	1
90	FWM10L	M10 washer large	2				
92	M10	m10 nyloc nut	6				

* - further breakdown

Warranty: This machine is guaranteed for 12 months. No warranty is given where the machine is being used as a hire machine. Warranty is against faulty workmanship or parts, with the exception of components not of MAJOR'S manufacture or design, i.e. hydraulic components, universally jointed shafts, chains and tyres, etc., which are subject to the original manufacturers conditions. To register your machine for warranty, please go to the support section of our website www.major-equipment.com and enter your details.

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