



MICRO • MINI • MIDI • FULL SIZE
EXCAVATOR ATTACHMENTS

BASED IN ELWOOD, IN

USER MANUAL

ProGrade Forestry Mulcher

MPG70R, MPG90R, MPG105R

mongoattachments.com
317-799-1040



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PREFACE

First of all, keep in mind that everything found on the following pages is advice aimed at achieving the primary objective: safety in the use of the ProGrade Forestry Mulcher, both for the users of the machine and for those around them. Likewise, instructions are given for its correct maintenance and operation.

For these reasons, we encourage you to carefully read this manual, which will provide you with useful tips for using and maintaining the ProGrade Forestry Mulcher. It is a must-read for anyone who is going to use the machine.

If you have any questions while reading the manual, please do not hesitate to contact Mongo Attachments or its authorized distributors.

This manual is considered an integral part of the ProGrade Forestry Mulcher and must accompany it if sold. For this reason, it is advisable to preserve it with care.

This machine must only be handled, maintained, or repaired by people who are aware of the risks involved and who are familiar with the safety regulations in this regard (accident prevention). **The manufacturer is not responsible for the consequences derived from modifications carried out on the ProGrade Forestry Mulcher without its prior and express written authorization.**

This ProGrade Forestry Mulcher is designed to be connected to the front of an excavator. It is designed to clear and shred all kinds of plant debris, including grass, shrubs, and trees of various diameters depending on the model. It does this using the auxiliary hydraulic system from the excavator to which it is connected.



Mongo Attachments is not responsible for the consequences arising from the use of the machine in applications not covered in this document. In these cases, the user assumes entire responsibility for any risks. Correct operation in accordance with the machine's features entails strictly adhering to all manufacturer instructions for handling, maintenance, and repair.

OPERATOR'S PERSONAL REQUIREMENTS

The personnel that handles the machine, and carries out any type of maintenance or repairs to it, must meet the following requirements:

PHYSICAL REQUIREMENTS

- Good eyesight, coordination, and the ability to safely and competently follow the instructions for the correct use of the ProGrade Forestry Mulcher.
- Not being under the influence of any substance (alcohol, drugs, or medication) that may impair physical or mental faculties.

MENTAL REQUIREMENTS

- Ability to understand and logically apply this manual, as well as the safety rules and precautions.
- Ability to adhere and use good judgment for your own safety and the safety of others.
- Ability to monitor work in a capable and responsible manner.

OTHER REQUIREMENTS

- Ability to handle machines.
- Ability to understand safety and danger indication diagrams and signs.

SKILLS

- Ability to operate the excavator that the ProGrade Forestry Mulcher will be connected to. The user must have current and valid training on that excavator.



IMPORTANT: Remember to only use implements that are in perfect condition and that meet current safety regulations. Remember that your safety depends on you; taking proper safety precautions can save you from having to take sick leave as a result of an accident. Proper safety precautions can also help you avoid major injury or death.

MACHINE SAFETY

GENERAL SAFETY REGULATIONS

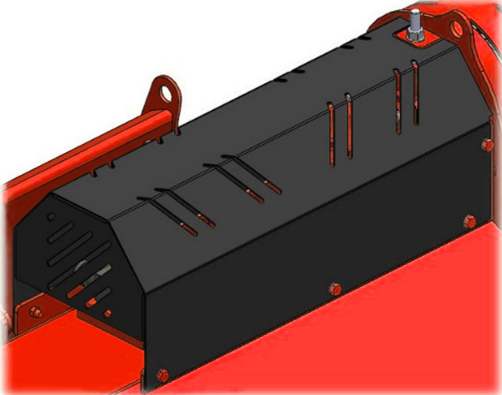
When using machinery, you must always be aware that they have moving parts that can cause very serious damage, both physical and material. Any operator who uses the ProGrade Forestry Mulcher must take into account the following general safety regulations:

- Before starting the machine, this manual must be read carefully.
- Pay close attention to all sections of the manual, especially those where it is emphasized with warning pictograms. Lack of attention is a frequent cause of accidents.
- The ProGrade Forestry Mulcher designed and manufactured by Mongo Attachments is a machine **designed to be connected to the front of an excavator. It is designed to clear and shred all kinds of plant debris, including grass, shrubs, and trees of various diameters depending on the model.** It does this using the auxiliary hydraulic system from the excavator to which it is connected. Any use that is not for that purpose or a non-compliant use of the same, is a serious infringement of the safety regulations, for which the manufacturer will not be responsible for possible damages or losses derived from it.
- The ProGrade Forestry Mulcher must only be handled by trained personnel who have previously read this manual.
- Before carrying out any work on the machine, familiarize yourself with all the control devices installed in the excavator. After starting the work is too late.
- Make sure that there are no people near the machine during normal operation.
- Make sure that the driver of the excavator is aware of the different risks that the machine presents and has read this manual.
- Loose fitting clothing and appropriate safety footwear should be worn.
- Wear suitable gloves for handling any part of the machine.
- Never carry out, for any reason, repair or maintenance operations with the excavator that is connected to the ProGrade Forestry Mulcher in operation. Both the machine and the excavator must remain absolutely stable and not running or moving.
- Carefully read the rules and regulations indicated in the pictograms on the machine. Make sure that these pictograms are in good condition and that they are legible.
- Do not force the controls or the working capacity of the machine.
- Carry out the maintenance of the ProGrade Forestry Mulcher according to this manual.
- Do not wait for any part of the machine to break before proceeding with its repair/replacement. If you have questions about any type of repair, contact Mongo Attachments.
- Clean the machine as directed. Do this regularly to prevent parts from degrading more than expected.



MACHINE SAFETY

GUARDS AND PROTECTIVE DEVICES

ILLUSTRATION	DESCRIPTION
	The ProGrade Forestry Mulcher has a fixed guard installed at the top right, which can be seen in the adjoining illustration*. This guard is installed to protect operators from any hazards related to the hydraulic motor and its installation resulting from direct interaction with these elements.
	The ProGrade Forestry Mulcher has a fixed guard installed on the right side, which can be seen in the adjoining illustration*. This guard is installed to protect operators from any hazards related to the pulley-belt transmission system resulting from direct interaction with these elements

* The design and positioning of the above elements may vary according to the model purchased.

MACHINE SAFETY

DEFINITION OF INDICATIONS

Users are warned, through the use of pictograms, about the risks existing in the use of this machine. These pictograms provide information of vital importance and indicate mandatory compliance during any direct interaction of the operator with the machine. To inform of these dangers, the machines are marked with the following warning pictograms:

NO.	PICTOGRAM	DESCRIPTION
P1		Carefully read the User Manual before handling the machine.
P2		Danger of running over or impact by the excavator during normal machine operation and during transport or maintenance. Leave a reasonable safety distance.
P3		Danger of snagging and shearing with the excavator hitching points when hitching/unhitching the machine. Be extremely careful during any interaction with these parts of the machine.
P4		Danger of snagging or entrapment with the machine's transmission belts and pulleys when operating or servicing the machine.
P5		Danger of cutting, severing or shearing with the machine's hammer shaft when operating or servicing the machine. Take extreme care during any interaction with this part of the machine.

MACHINE SAFETY

NO.	PICTOGRAM	DESCRIPTION
P6		Danger of entrapment or entanglement with the machine's transmission belts and pulleys when operating or servicing the machine. Be extremely careful during any interaction with these parts of the machine.
P7		Danger of crushing by the machine when operating, transporting or servicing the machine. Leave a reasonable safety distance.
P8		Caution against the risk of burns due to high temperatures, which may be generated by the motor and the machine's hydraulic system components.
P9		Unpleasant noise produced by the machine during normal operation.
P10		Danger of bursting hydraulic hoses. The User and Maintenance Manual must be read carefully before carrying out any repairs.
P11		Warns of the danger of material projection at high speed during normal machine operation. A reasonable safety distance must be kept with the machine (300ft).

MACHINE SAFETY

In addition, every person who operates the machine must be protected against unforeseen dangers, which is why they must use the Personal Protection Equipment (PPE) described below:

NO.	PPE	DESCRIPTION
PPE 1		The use of safety footwear is mandatory when handling the machine and when standing near it.
PPE 2		The use of gloves is mandatory while interacting with the machine, especially during its maintenance.
PPE 3		The use of acoustic protection is mandatory during normal operation of the machine, even for people in the vicinity of the machine.
PPE 4		The use of suitable clothing for work is mandatory both in the normal operation of the machine and in its maintenance.
PPE 5		The use of a helmet and glasses is mandatory in the event of using an excavator without an enclosed cab during normal machine operation.



IMPORTANT: Keep the pictograms in good condition. If they become damaged or deteriorate, the owner must replace them immediately.

DESCRIPTION OF THE MACHINE

GENERAL DESCRIPTION

The ProGrade Forestry Mulcher is a machine designed to be connected with a fastening plate to the arm of an approved excavator.

The MPG70R, MPG90R, and MPG105R models are designed to be connected to the arm of an excavator. Their function is to clear shrubs, branches and trees up to a maximum diameter of 6in, depending on the model chosen. The ProGrade Forestry Mulcher fits excavators in the range of 4 to 10 tons.

Before starting normal operation, you must do the following:

- Connect the ProGrade Forestry Mulcher to the excavator with the coupling system installed for this purpose.
- Connect the ProGrade Forestry Mulcher's hydraulic system to the hydraulic connections on the excavator using the hydraulic hoses.

The Hydraulic Mulcher is composed of various sub-assemblies: The chassis, the fastening plate, the motor and hydraulic system, the pulley-belt transmission system, the hammer shaft, the side skids, and the safety guards. Depending on the chosen model, these elements may vary in both design and placement.

The MPG70R, MPG90R, and MPG105R models are coupled to the arm of an excavator using a fastening plate installed on the machine specifically for this purpose. The process of securing the machine to the excavator is fully detailed in the section titled **HITCHING THE MULCHER HEAD TO THE EXCAVATOR** on page 13 of the User Manual.

The hydraulic system on the ProGrade Forestry Mulcher is connected to the hydraulic connections on the excavator.

The primary elements built into the ProGrade Forestry Mulcher includes the hammers attached to the hammer shaft on the lower part of the machine chassis.

The hammers on the rotor are designed to clear and shred all kinds of surface vegetation that is encountered as the excavator proceeds. The rotary movement of the hammer shaft is produced due to the hydraulic motor installed on the upper right part, the transmission system, and the hydraulic hoses connected between the ProGrade Forestry Mulcher and the excavator.

The power drive system consists of two (2) pulleys connected together via four belts. The upper pulley is attached to the rotation shaft on the hydraulic motor, while the lower pulley is attached to the hammer roller. Consequently, it is this lower pulley that causes the roller's rotary movement.

Finally, the machine also includes a protective guard attached to the motor and hydraulic system designed to protect the operator from any liquids that may be sprayed out at high pressure (hydraulic oil), plus another protective guide attached to the pulley-belt system designed to protect the operator from entanglement in the belt/pulley system.

DESCRIPTION OF THE MACHINE

MAIN PARTS

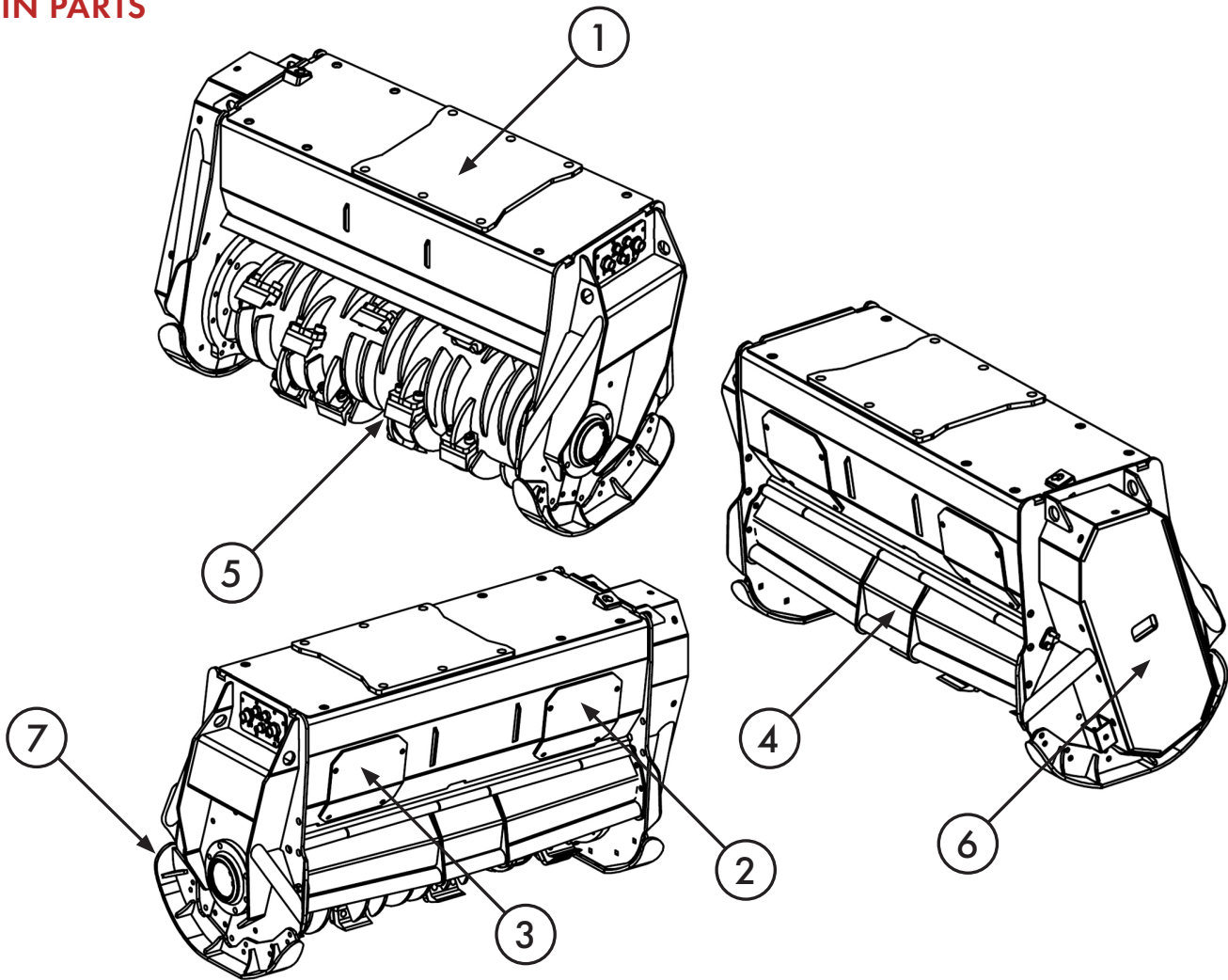


Image 1. Images of the ProGrade Forestry Mulcher showing the main parts.

NO.	COMPONENT
1	Excavator Hitch Plate
2	Hydraulic Motor
3	Flow Regulator
4	Tailgate
5	Forestry Hammer Rotor
6	Pulley And Belt Protective Cover
7	Side Skids

DESCRIPTION OF THE MACHINE

MOUNTING PLATES

The MPG70R, MPG90R, and MPG105R models are supplied with a fastening plate with various holes for attaching the heads to the hitch on the excavator's arm. The layout of these holes shall vary according to the model chosen. This will be fitted with the appropriate mount for your excavator and will be built to the specs agreed upon by the customer and Mongo Attachments.

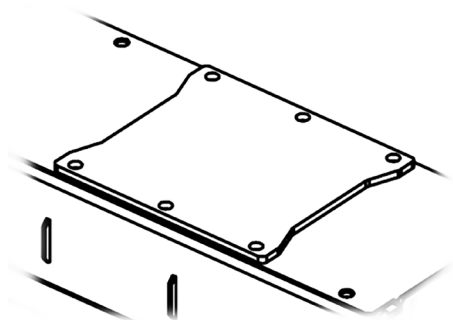


Image 2. Image of the mounting plate.

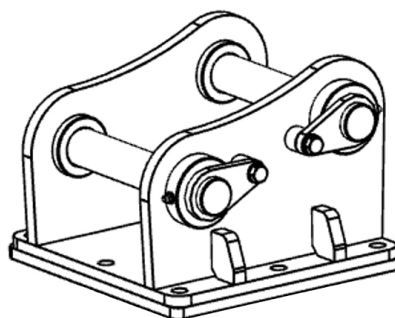


Image 3. Image of a custom hitch.

TECHNICAL DATA

MODEL	WEIGHT WITHOUT MOUNT	MOTOR	MOTOR SIZES (CC)	OIL FLOW (GPM)	PSI RATING (WHILE FLOWING)	RPM RANGE	MINIMUM EXCAVATOR WEIGHT	# OF TEETH	CUTTING WIDTH	CUTTING DIAMETER
MPG70R-26	864 lbs	Gear Motor Cast Iron	26	17-19	3,100	2,400-2,600	3.5 T	16	27"	5"
MPG70R-31	864 lbs	Gear Motor Cast Iron	31	19-22	3,100	2,400-2,600	3.5 T	16	27"	5"
MPG90R-36	981 lbs	Gear Motor Cast Iron	36	22-24	3,100	2,400-2,600	6 T	20	35"	6"
MPG105R-41	1,058 lbs	Gear Motor Cast Iron	41	25-26	3,100	2,400-2,600	8.5 T	24	41"	6"

HAMMERS USED

This mulcher head was designed, conceived, and manufactured to clear and shred all kinds of plant debris. This debris may be grass, shrubs or trees of various diameters.

REF	IMAGE	DESCRIPTION
MTR1848		F08 fixed forestry hammer. For the MPG70R, MPG90R, and MPG105R models. Used to shred trees.

USE OF THE MACHINE: OPERATION

To start up and operate the mulcher head, follow the instructions in the sections below.

INSTRUCTIONS ON RECEIVING THE MACHINE

Check the ProGrade Forestry Mulcher for shipping damage or missing parts. Claims will only be accepted if they are made immediately upon receiving the machine and are always confirmed by the carrier or the transport agency. Check that the machine has all safety protections in place. Otherwise, please notify Mongo Attachments immediately. Under no circumstances should you use the machine if any protective devices are missing.

WARRANTY

Mongo Attachments, LLC (hereinafter referred to as “Mongo Attachments” or “Mongo”) warrants that all equipment manufactured and delivered by Mongo Attachments will be free from defects in material and workmanship for a period of one year from the date of purchase (“Warranty Period”) of said equipment, except for as stated in this Warranty.

This Warranty does not apply to: 1) any item of equipment which has been improperly stored, installed, operated or maintained or which Buyer has itself modified, replaced, adjusted, or repaired or permitted modification, replacements, adjustments, or repairs by third persons, without the consent of Mongo Attachments; 2) any item of equipment which has been reconstructed, repaired or altered by Persons other than Mongo Attachments or an authorized representative of Mongo Attachments; 3) equipment failure resulting from the use of non-Mongo produced replacement parts, or from installation and use of add-on, modified, or unapproved accessories; 4) any item of equipment subjected to abuse, misuse, neglect, negligence, accident, recklessness, improper testing, improper handling, abnormal physical stress, abnormal environmental conditions or use contrary to any instructions issued by Mongo Attachments; 5) wear and tear as a result of normal use, including but not limited to teeth, tines, blades, belts, powder coating finish, hoses and their fittings; 6) equipment failures caused by weather, Buyer’s storage practices, contamination, or use of unapproved coolants, lubricants, or chemicals; cosmetic issues such as scrapes, scratches, dents, or worn painted surfaces; and 7) other items and conditions as determined by Mongo Attachments.

Notwithstanding the above exceptions, if any item of equipment shall prove defective in material or workmanship during the above Warranty Period, Buyer shall notify Mongo Attachments within thirty (30) days of failure of the equipment or discovery of defect by contacting an authorized Mongo Attachments dealer to arrange inspection of the equipment. An inspection by an authorized Mongo Attachments dealer or a direct inspection by Mongo Attachments shall then occur. If found to be defective, Mongo will approve the warranty claim. Upon approving the warranty claim, Mongo Attachments can, at its option, adjust, modify, repair or replace said defective equipment or equipment part. Mongo shall have the option to return the equipment to the site of manufacture, F.O.B., to make necessary repairs or to make such adjustment, modification or repair at the point of installation.

USE OF THE MACHINE: OPERATION

Prior to repair or replacement, proof of purchase must be provided, or warranty claim will be automatically denied. In the event Buyer disagrees with the assessment of the equipment by the authorized Mongo Attachments dealer, Buyer may contact Mongo Attachments to request further review. Mongo Attachments reserves the right, but not the obligation, to review the determination made by the authorized dealer and affirm or deny its decision.

BUYER AND MONGO AGREE THAT, IN CONSIDERATION OF THE ABOVE WARRANTY, ALL OTHER WARRANTIES AND GUARANTEES, OTHER THAN TITLE, EITHER EXPRESS OR IMPLIED, WHETHER ARISING UNDER LAW OR EQUITY OR COURSE OF DEALING OR CUSTOM OF TRADE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED FROM THIS CONTRACT.

The sole liability of Mongo and the exclusive remedy of Buyer arising out of the manufacture, sale, or furnishing of equipment hereunder or its use, whether arising under contract, tort (including negligence), strict liability or otherwise, shall be the modification, adjustment, repair or replacement of the item of equipment, or component thereof. In no event shall Mongo be required to return or refund the purchase price of the defective equipment. Mongo Attachment's liability shall not exceed the purchase price of the defective item. Any services, repairs or replacement parts performed by Mongo or given to Buyer under this warranty shall be credited against Mongo's maximum liability. Warranty void outside of Canada and the United States.

BEFORE STARTING WORK

Before moving or working with the machine, the following checks will be carried out in order to check the correct operation of the machine:

- Carefully read this Manual in its entirety.
- Check that the weight of the machine does not hinder maneuverability of the excavator and check that it does not exceed the excavator's structural capacity.
- Mongo Attachments recommends the use of an excavator with an approved cabin for the work to be carried out.
- Check the integrity of the hydraulic connections. If there's a worn or damaged hose, it's the user's obligation to replace it with a new one.
- Check the oil level in the excavator's hydraulic system. If the oil level is insufficient, oil must be added to reach the level recommended by the manufacturer.
- Check that the excavator controls move the machine as described.
- Make sure there is no one around the machine.
- Make sure that all the components of the ProGrade Forestry Mulcher are present and intact.

USE OF THE MACHINE: OPERATION

- Ensure the machine's guards and protection devices are present, in satisfactory condition, and are properly fastened. The work should not begin unless the guards are in place and securely fastened.
- Perform a visual examination of the entire machine to detect possible oil leaks, surface damage, and/or breakage of pieces or parts.
- Any defect detected after due inspections must be corrected before starting the excavator.
- Ensure that the machine is connected to an excavator with adequate power for the selected ProGrade Forestry Mulcher model as defined in the section titled TECHNICAL DATA on page 10 of the User Manual.
- Place the machine in the transport or work position depending on the user's intention, as defined in the section titled TRANSPORT POSITION AND WORKING POSITION on page 14 of the User Manual.
- Before starting to work with the ProGrade Forestry Mulcher, you should survey the for any obstacles that could be dangerous. If they exist, it will be necessary to flag in order to avoid them during the work.
- No one should get on the machine when it is moving, at the time of work, or when the excavator's engine is running.

HITCHING THE MULCHER HEAD TO THE EXCAVATOR

When coupling the mulcher head to the excavator, special care must be taken not to get trapped between the excavator and the machine and not to get caught or injure any part of the body. Appropriate safety gloves must be worn at all times when interacting with the machine and the following procedures must be followed on all occasions.

First, ensure that the mount is correctly attached to the machine with the respective nuts and bolts.

Next, connect the hydraulic hoses on the ProGrade Forestry Mulcher to the hydraulic system on the excavator, ensuring both elements are properly connected.

Finally, perform a visual inspection to ensure that there is no hydraulic oil leakage and that all major components, such as bolts, are properly positioned and fastened.

USE OF THE MACHINE: OPERATION

MULCHER HEAD HYDRAULIC CONNECTIONS

The ProGrade Forestry Mulcher is equipped with a set of hydraulic hoses that are specifically designed to connect to the excavator's hydraulic circuit. The specific configuration of the hoses will vary depending on the options selected. Determine the pressure (P), return (R), and drainage (D) hoses. C1 and C2 will not be used.



Image 4. Image of the bushings for connecting the mulcher head's hydraulic hoses.

Establish a hydraulic connection between the machine and the excavator. Connect the mulcher head's hoses with the corresponding hoses on the excavator.

TRANSPORT POSITION AND WORKING POSITION

TRANSPORT POSITION: Once the machine is hitched to the excavator, adjust the position of the excavator's hydraulic arm so that the mulcher head is no longer in contact with the ground and does not obstruct the driver's view, leaving enough space between the excavator and the machine to avoid contact during transport.

The hydraulic motor should be completely shut down, as should all of the mulcher head's components, including the transmission system and hammer shaft.

Next, a visual check must be carried out to ensure that there are no loose or damaged parts that could pose a risk during the machine's transportation. Finally, the machine can be transported.

WORK POSITION: The hydraulic arm on the excavator will be lowered until the machine's side skids are just off the ground. In this position, the hydraulic motor can drive all the mobile components on the mulcher head, and therefore the hammer shaft.

USE OF THE MACHINE: OPERATION

ADJUSTING THE TENSION OF THE TRANSMISSION SYSTEM BELTS

To adjust the tension of the transmission system belts, first remove the protective cover over the hydraulic motor and the right-hand protective cover on the transmission system. The tension of the transmission system belts on the mulcher head is adjusted by changing the position of the upper pulley.

The upper pulley (and consequently the entire hydraulic motor system, as both are connected) is moved with the tensioning system and the slots, nuts and bolts that fasten the motor to the mulcher head chassis.

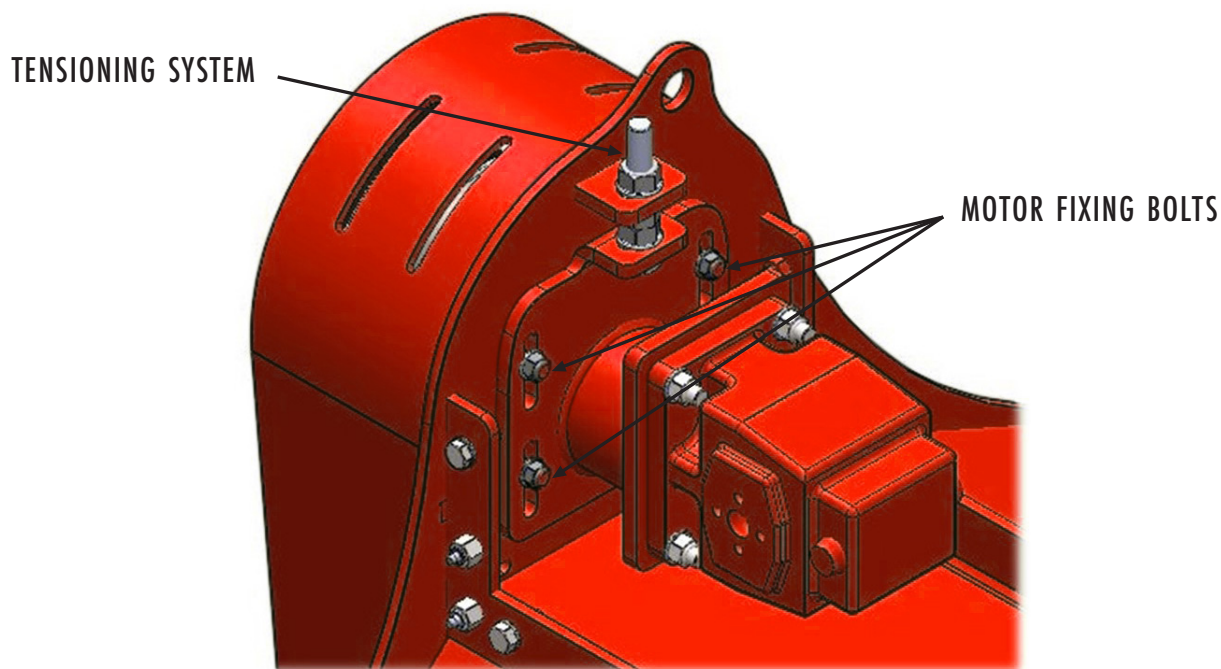


Image 5. Image of the system for adjusting the tension of the transmission system belts.

1. Remove the bolts fastening the protective cover over the hydraulic motor and remove the cover.
2. Remove the bolts fastening the right-hand protective cover on the transmission belt system and remove the cover.

To adjust these values, follow the steps below:

1. Loosen the four (4) bolts in the slots that fasten the hydraulic motor and the upper pulley to the mulcher head chassis.
2. Adjust the position of the hydraulic motor and the upper pulley using the slots and tighten the four (4) bolts, to reach the desired tension in the belts, increasing the distance between the centers of the pulleys. Tension should be set at 1/4" deflection at the midpoint between the pulleys. Alternatively, to lower the tension of the belts, just do the opposite, to reduce the distance between the centers of the pulleys.

USE OF THE MACHINE: OPERATION

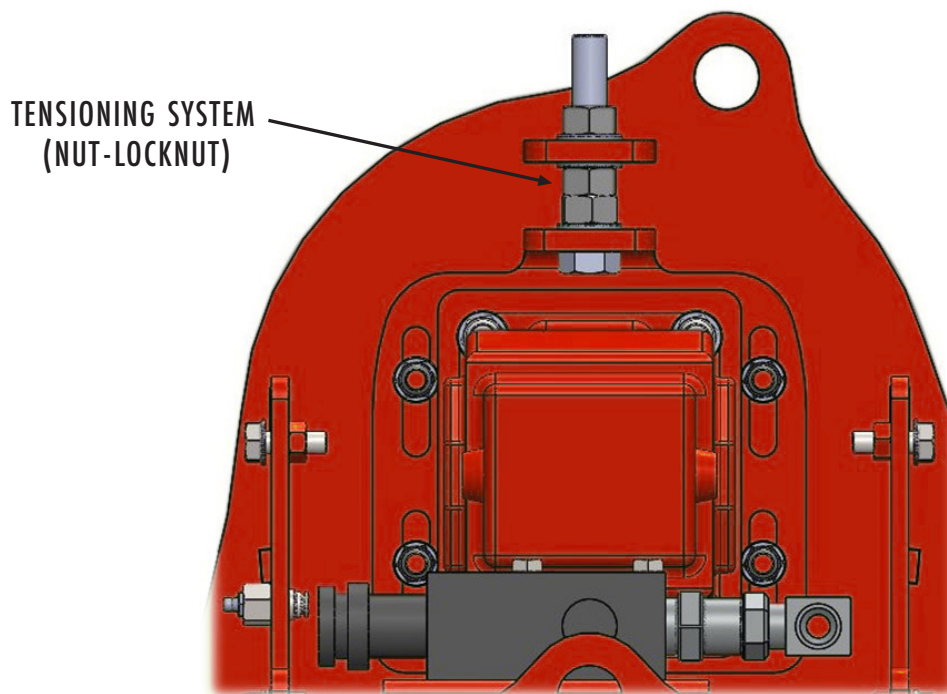


Image 6. Image of the system for adjusting the tension of the transmission system belts.

3. Adjust the position of the hydraulic motor and the upper pulley using the tensioning system (nut-locknut), moving them with the slots. Once they are in place, re-tighten the four (4) bolts to reach the desired tension in the belts, increasing the distance between the centers of the pulleys.
4. Once the hydraulic motor and upper pulley are in position, and the desired value has been obtained, put the protective cover and right-hand protective cover back in place.



IMPORTANT: Never start up the machine without the protective guards in place, for any reason whatsoever.

REPLACING THE TRANSMISSION SYSTEM BELTS

To replace the transmission system belts, first remove the right-hand protective cover on the transmission system and then adjust the position of the pulleys to reduce the distance between them, as shown in the section titled ADJUSTING THE TENSION OF THE TRANSMISSION SYSTEM BELTS on page 15 of the User Manual.

USE OF THE MACHINE: OPERATION

Next, move the upper pulley on the transmission system downwards, to loosen the belts, and then remove the belt(s) that need to be replaced.

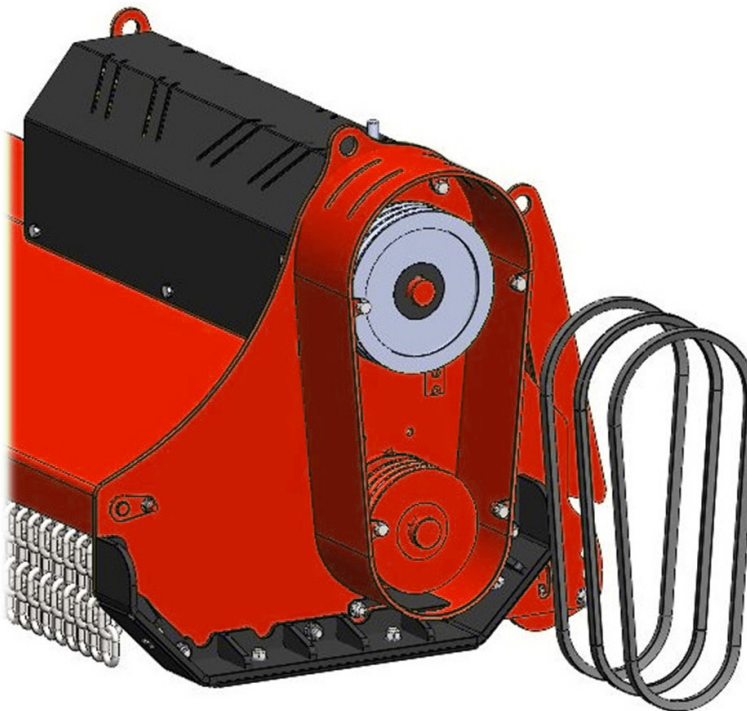


Image 7. Image of dismantled transmission system belts.

Finally, with the belt(s) removed, install the pulley(s) in the same position as the previous one(s) and tighten them, as shown in the section titled ADJUSTING THE TENSION OF THE TRANSMISSION SYSTEM BELTS on page 15 of the User Manual.

REGULATING THE SPEED OF THE HYDRAULIC MOTOR

The part used for regulating the rotation speed of the hydraulic motor is the flow regulator built into the mulcher head, which is protected by the protective cover.

To access the regulator, unscrew the bolts to remove the cover nearest the end with the belts.



IMPORTANT: You can consult the rotation speeds in the section titled OPTIMAL ROLLER ROTATION SPEED on page 27 of the User Manual.

USE OF THE MACHINE: OPERATION

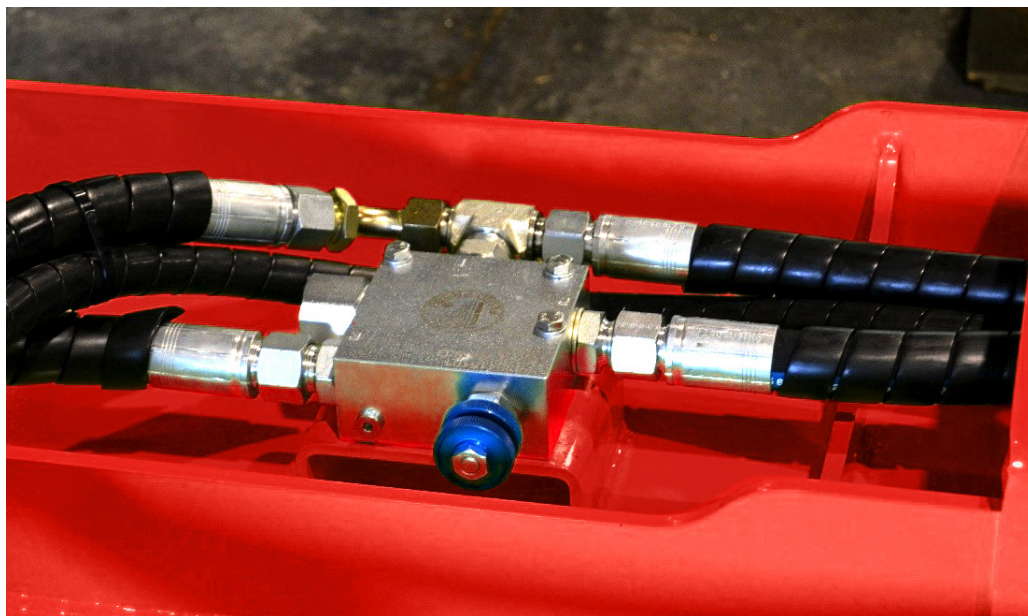


Image 8. Image of the flow regulator.

1. The colored wheel shown above in image 8 is what increases or reduces the flow of the hydraulic system.

INCREASE FLOW: turn the wheel counter-clockwise to increase the working speed of the machine's hydraulic motor.

DECREASE FLOW: turn the wheel clockwise to reduce the working speed of the machine's hydraulic motor.

* It is human nature to assume that if a little flow is good, then even more flow is better. THIS IS NOT THE CASE. It is critical that the RPM is set correctly. The RPM should be no more than 2400!

2. Position the protective cover and affix it to the mulcher head chassis with the corresponding bolts.

MACHINE OPERATION

Prior to starting work, the machine's condition should be carefully checked, especially the items most exposed to wear and tear and those that fulfill safety functions, such as protective guards, hydraulic hoses, and bolts. At the same time, it should be verified that there are no nearby objects, people, or animals that could interfere with the machine's proper operation by trying to anticipate the movements of the excavator and the machine.

To start the work, once it has been verified that there are no risks, the controls of the excavator's hydraulic circuit can be initiated, placing them in the required working position, following what is described in the section titled TRANSPORT POSITION AND WORKING POSITION on page 14 of the User Manual. Once this step has been completed, you can start working with the machine.

USE OF THE MACHINE: OPERATION

INTENDED USE

The ProGrade Forestry Mulcher was designed, conceived, and manufactured with the purpose to clear and shred all kinds of plant debris. This debris includes grass, shrubs, or trees of various diameters. It works using the hydraulic system of the excavator that it is connected to.

It is absolutely forbidden to transport the mulcher head without first placing it in its transport position, as described in the section titled **TRANSPORT POSITION AND WORKING POSITION** on page 14 of the User Manual, or without being securely attached to a trailer.

The use of the mulcher head for the transport of materials, people, or animals is not allowed.

It is completely prohibited to disassemble the machine's safety devices.

UNHOOKING THE MULCHER HEAD

Before unhooking the machine, it should be in the transport position, as described in the section titled **TRANSPORT POSITION AND WORKING POSITION** on page 14 of the User Manual.

To carry out this operation, ensure that the ground on which the machine will be supported is level to fully guarantee the stability of the mulcher head.

After ensuring that the ground is suitable, turn off the excavator and use the hydraulic control levers to ensure that the mulcher head is properly supported. Once its stability has been verified, activate the hydraulic control levers again, this time utilizing your excavator's de-pressuring technique.

Now, you can disconnect the hydraulic hoses that connect the mulcher head's hydraulic system with the excavator's hydraulic system.

Finally, unhook the machine from the excavator. This procedure is exactly the same (except in the opposite direction) as that described in the process for attaching the mulcher head.

It is highly recommended to check after each use of the mulcher head that it has not been damaged during work. Furthermore, it is also recommended to always store the machine in a dry garage or warehouse, protected from inclement weather, thus extending its lifespan.

USE OF THE MACHINE: OPERATION

SAFETY MEASURES DURING MACHINE OPERATION

- Do not use on slopes of more than 8.5° (14%). Work should never be carried out in a transverse direction.
- Never handle any mechanism on the mulcher head without first turning off the excavator motor and removing the hydraulic pressure from the circuits.
- In the event of identifying any item in poor condition, repair it and/or replace it with a new one. Once corrected, work can be restarted.
- If any severe vibrations occur and the cause is not identified, please contact Mongo Attachments.
- Appropriate safety footwear, eye-wear, ear protection, and clothing should be worn when operating the machine. Avoid standing in the vicinity of the machine when it is in use.
- When using an excavator without a cabin, always wear a safety helmet and protective shield when operating the equipment and for any interaction with the machine.
- Contact with high-pressure hydraulic fluids must be avoided at all costs. This type of leak has the potential to do significant damage to the human body. In the event of an incident involving hydraulic oil, a doctor should be contacted immediately. To avoid harm in the event of a leak, you must always wear appropriate safety gloves.
- When the machine is in operation, no one should be within 150 feet of it. They risk being hit by stones or plant debris thrown at high speeds.

MAINTENANCE

Taking care of the mulcher head can extend its lifespan. This section explains how to properly and safely care for your machine. Maintenance, such as lubrication and adjustments, must be performed by qualified and trained personnel.

GENERAL RULES FOR MAINTENANCE

- Always carry out maintenance operations with the machine perfectly stable, immovable, and braked, whether or not it is attached to the excavator. This restriction is in place to prevent any sudden movement that could endanger the operators while performing maintenance operations.
- The hydraulic hoses should be disconnected from the excavator's hydraulic sockets.
- Strictly follow the safety standards for maintenance, as these jobs are not risk-free. Do not neglect the use of Personal Protection Equipment.
- It is recommended to thoroughly grease the machine after maintenance and before daily use. Do NOT use "Red & Tacky" or Lithium Grease.
- It is recommended to regularly carry out maintenance operations and inspections.
- Be aware that any modification to the machine is prohibited, as it could affect the user's safety. Modifications can only be made with the express written consent of Mongo Attachments. Any modification made without said consent, entails the cancellation of the warranty.



IMPORTANT: Do not carry out any type of maintenance or interact directly with the machine while it is in operation.

LUBRICANT INFORMATION

NLGI Grade 2 lubricants should be used on the ProGrade Forestry Mulcher.

We suggest using Schaeffer 219 Grease.

MAINTENANCE

SAFE MAINTENANCE PRACTICES

To carry out maintenance of the machine safely, the following aspects must be considered:

- Understand the maintenance procedures before starting any work.
- Ensure that all the machine's safety devices and protective guards are in the correct position and in good condition.
- Check the structural integrity of the various machine components.
- Carry out maintenance operations after cleaning all the parts of the machine.
- Never lubricate, carry out maintenance operations, or adjust the machine while it is in operation.
- Keep all parts in good condition and properly installed.
- Repair visible damage immediately: replace worn or broken parts.

MAINTENANCE CHECKS

It is recommended that the following actions and checks are routinely performed:

1. Make sure the protection guards are in good condition and fixed properly.
2. Regularly check the condition of the hammers and the hydraulic system. In the event of wear or breakage, they should be repaired or replaced.
3. Before starting up the machine, always check the oil levels of the excavator.
4. After the first two hours of operation, re-tighten all the bolts on the machine, particularly for the blades and hammers. Also tighten the belts on applicable models.
5. The condition of the hydraulic hoses should be checked periodically, at least twice a year. They must not have cracks, (generally produced by ultraviolet rays), nor friction or cuts. In the event of any anomaly, it is mandatory to replace the damaged hoses with new equivalent ones. Non-replacement may lead to an unexpected explosion, usually when working, with a high chance of causing a serious accident. Don't hesitate, be proactive.

MAINTENANCE

CLEANING

In order to enjoy your machine for many years to come, please note the following cleaning requirements:

- A clean machine is a safe machine.
- A clean machine is ready to work.
- A clean machine is a long-lasting machine.

It is recommended to clean the machine after each working day.

If a pressurized water cleaning system is used, a general greasing must be carried out at the end. You must also dry the different components and points where stagnant water may remain using a cloth or pressurized air.

Cleaning must be carried out with the machine completely stopped and after having ensured its stability.



REMEMBER: Keeping the machine in good condition will mean better performance as well as a longer life. Clean thoroughly, removing guards and easy-to-assemble/disassemble elements, at least once a year.

STORAGE

STORING THE MACHINE FOR LONG PERIODS OF INACTIVITY

To store the machine for a long period of inactivity without deterioration, follow the steps and tips below:

- Clean the machine thoroughly.
- Clean more thoroughly the areas that, due to their difficult access, are not cleaned frequently.
- Remove any used grease that has accumulated and clean the surfaces thoroughly.
- Carry out a new general greasing in all the moving parts, with new quality grease.
- Store the machine in a warehouse with a clean and dry atmosphere.

PREPARING THE MACHINE FOR USE AFTER STORAGE

Before using the machine again after long storage, you should follow the steps below:

- Perform a visual and general examination of all parts of the machine.
- Hook the mulcher head to your excavator, as described in the section titled **HITCHING THE MULCHER HEAD TO THE EXCAVATOR** on page 13 of the User Manual.
- Check the correct operation of the mulcher head, testing the different mechanisms that compose it, as stated in section **MACHINE OPERATION** on page 18 of the User Manual.

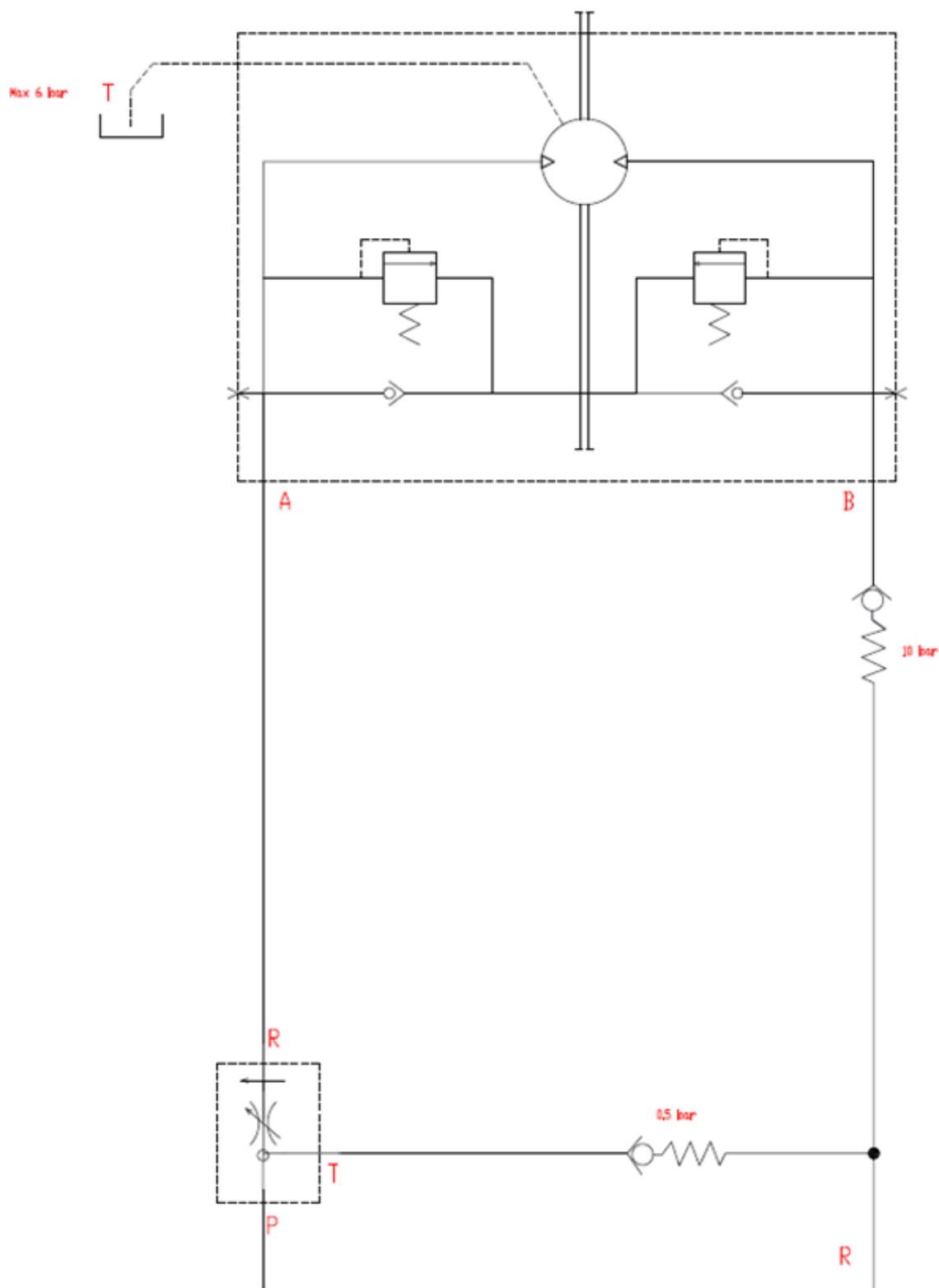
TROUBLESHOOTING

Many problems can be easily resolved once the reason is identified. The table below shows the most frequent problems that the machine may present, as well as the causes and solutions.

PROBLEM	CAUSE	SOLUTION
The machine is hitched to the excavator with the hydraulic hoses connected but the hydraulic motor doesn't respond to the activation of the control devices	Hydraulic motor failure	Contact Mongo Attachments to replace it with another one with the same technical characteristics.
	Lack of oil in the excavator's hydraulic circuit	Check the oil level of the excavator and, if it is insufficient, top it up to the level indicated by the manufacturer.
	Oil leak in the hydraulic circuit	Check all the hydraulic circuit hoses. In the event of the breakage of any of them, they must be replaced.
	Depressurize the excavator's hydraulic system	Check the pressure of the hydraulic circuit.
The machine is vibrating	One of the hammers is worn or broken	Check the condition of the lower hammers. If they are worn or broken, please contact Mongo Attachments to replace them with alternatives that have the same technical characteristics.
	There is a bearing issue	Do not use the machine. Contact Mongo Attachments ASAP.

HYDRAULIC DIAGRAM

HYDRAULIC DIAGRAM OF THE GEAR MOTOR-DRIVEN MULCHER



OPTIMAL ROTOR ROTATION SPEED

As described in the section titled REGULATING THE SPEED OF THE HYDRAULIC MOTOR on page 17 of the User Manual, the ProGrade Forestry Mulcher is already regulated in the factory before delivery and should not be adjusted without express authorization from Mongo Attachments.

The table below shows the optimal roller rotation speeds:

MODEL	RPM ROLLER
MPG70R	2400-2600
MPG90R	
MPG105R	

These values refer to the models with hydraulic motors installed as standard. For mulcher heads manufactured with optional motors, check Mongo Attachments.

AFTER-SALES SERVICE AND SPARE PARTS FROM MONGO

To optimize the service life of the mulcher head, follow the maintenance instructions in the maintenance section of the User Manual to the letter. If spare parts are required, contact your Mongo Attachments distributor and request original parts for your machine. The original spare parts are the same as the ones that came with the machine originally, guaranteeing the following:

- **Perfect adjustment:** The original parts fit the machine perfectly, avoiding any installation or operational problems.
- **Optimal performance:** The original parts are made with the highest quality materials and with more precise tolerances, which ensure maximum performance and efficiency in your machine.
- **Improved durability:** The original parts are designed to last longer than imitation parts, which saves money in the long term by reducing maintenance and repair costs.

Remember that it is vitally important to provide the model and serial number to the distributor to ensure that they have the right information to provide the correct part. You can find the model and serial number on the CE nameplate attached to the machine, or from the documentation accompanying your purchase.



MODEL:

SERIAL #:

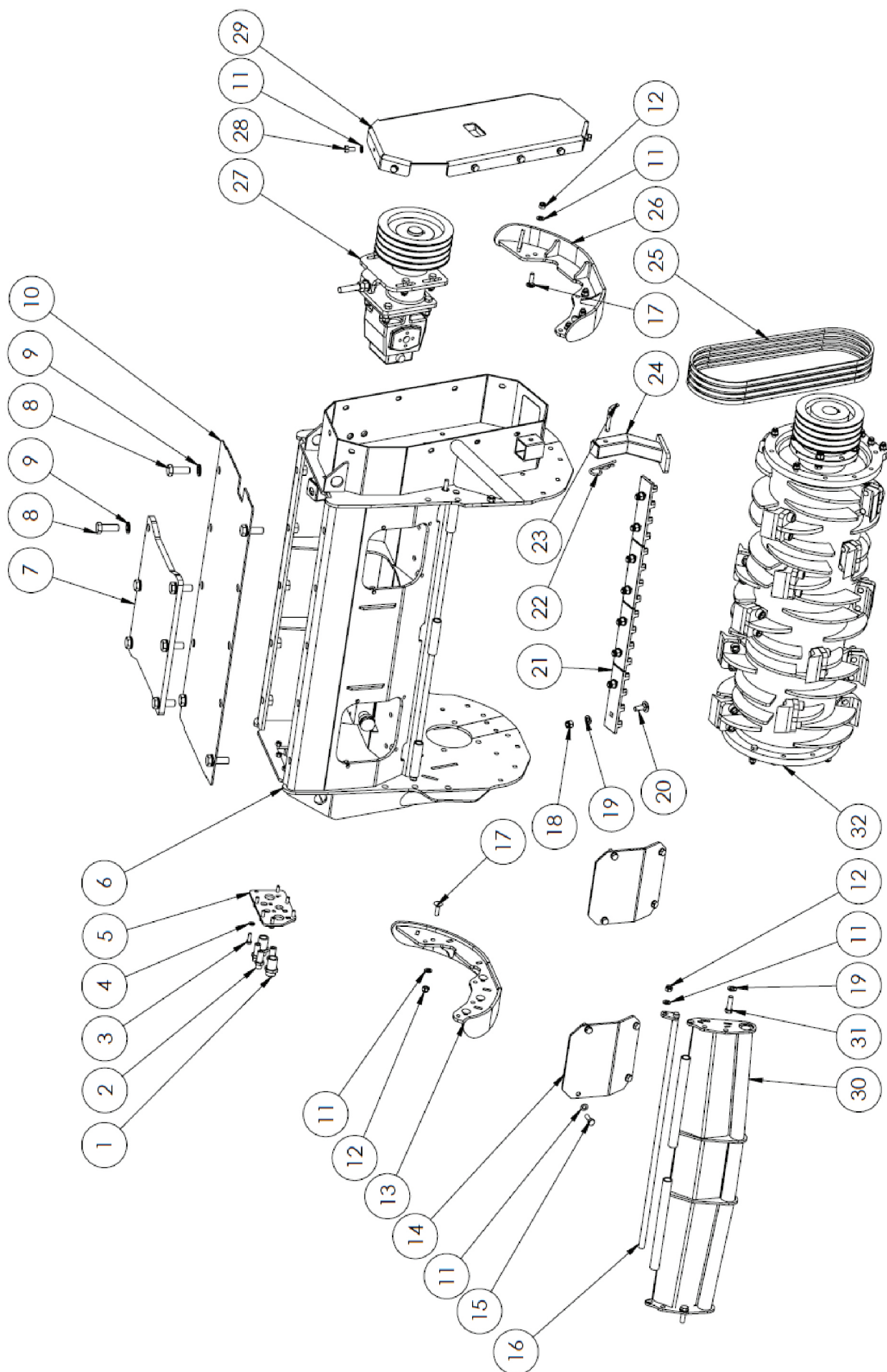
WEIGHT:

FOR PARTS/SERVICE PLEASE CONTACT US AT 317-799-1040
OR VISIT OUR WEBSITE AT MONGOATTACHMENTS.COM

Image 9. Image of the ProGrade Forestry Mulcher CE nameplate.

SPARE PARTS LISTS

To obtain the reference numbers for the ProGrade Forestry Mulcher's spare parts, please view the diagrams and tables found on the following pages. If you have any questions, please contact Mongo Attachments for assistance.

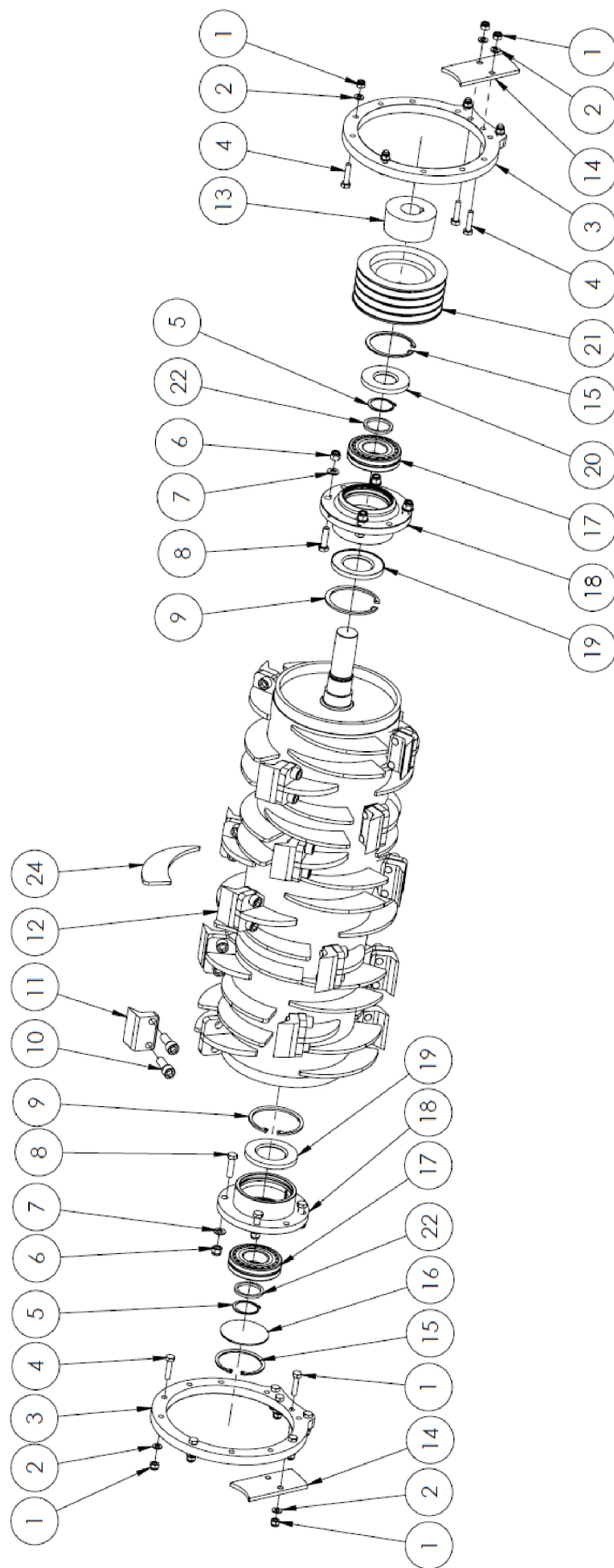


MULCHER HEAD ASSEMBLY

NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	MCOMHIDRAM052	BULKHEAD FITTING 1/2"	3
2	MCOMHIDRAM148	BULKHEAD FITTING 3/4"	2
3	MCOMTOR933024	HEX BOLT 8.8 M8 x 25	7
4	MVR061	WASHER M8	7
5	M176.100-33.00-00	HYDRAULIC PLATE	1
6	M176.100-00.09-05	CHASSIS MPG70R, MPG90R, MPG105R	1
7	M176.530.01.00-01	MOUNT PLATE	1
8	MCOMTOR933076	HEX BOLT 8.8 M18 x 50	10
9	MVR111	WASHER M18	10
10	M176.500-01.09-02	TOP COVER 0.90	1
11	MVR045	WASHER M10	28
12	MVR251	NUT, M10	10
13	MKR169 *	SKID, RIGHT MPG70R, MPG90R, MPG105R	1
14	M176.100-17.09-03	INSPECTION PLATE	2
15	MCOMTOR933037	HEX BOLT 8.8 M10 x 30	8
16	M176.630-00.00-01	DOOR ROD ASSEMBLY	1
17	MTR1403	SQUARE HEAD BOLT M10 x 45	8
18	MDR061	LOCK WASHER M12	8

19	MVR041	WASHER M12	S/M
20	MTR1530	SQUARE HEAD BOLT M12 x 35	S/M
21	MTR451	COUNTER HAMMER	S/M
22	MVR031	SPRING PIN D4	1
23	M10x80	CURVED BOLT 10 x 80	1
24	MKR168	BASE SUPPORT	1
25	MTR2106	BELT BX-50	4
26	MKR169 *	SKID, LEFT MPG70R, MPG90R, MPG105R	1
27	M176.800-00.00-00	MOTOR ASSEMBLY MPG70R, MPG90R, MPG105R	1
28	MVR110	HEX BOLT 8.8 M10 x 20	10
29	M176.510-00.00-01	BELT COVER	1
30	M176.110-00.09-01	REAR DOOR ASSEMBLY MPG70R, MPG90R, MPG105R	1
31	MVR230	HEX BOLT 8.8 M12 x 40	2
32	---	ROTOR ASSEMBLY MPG70R, MPG90R, MPG105R	1

* Part number MKR169 contains parts 13 & 26. They are always sold together.



ROTOR ASSEMBLY

NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	MVR251	HEX NUT M10	14
2	MVR045	WASHER M10	14
3	MKR161	ROTOR PROTECTOR	2
4	MCOMTOR933134	HEX BOLT 8.8 M10 x 45	14
5	MTR217	EXTERIOR C-CLIP 471 E50	2
6	MDR061	HEX NUT M12	8
7	MVR041	WASHER M12	8
8	MVR277	HEX BOLT 8.8 M12 x 45	8
9	MTR106	INTERIOR C-CLIP 472 I-110	2
10	MTR1854	ALLEN BOLT 12.9 M16 x 40 THREAD 150	S/M
11	MTR1848	FIXED HAMMER F08	S/M
12	M178.310-00.09-01 *1	ROTOR ASSEMBLY MPG70R, MPG90R, MPG105R	1
13	MTR315	TAPER BUSHING 2517 -45	1
14	M176.520-00.00-02	SHAFT CLOSING COVER	2
15	MTR429	INTERIOR C-CLIP 472 I-100	2
16	MTR430	HAMMER AXLE BUSHING COVER 100x3	1
17	MTR718	SPHERICAL ROLLER BEARING 21310	2
18	MTR549 *2	OUTSIDE HUB	1
19	MTR233	SEAL 60x110x10	2
20	MTR407	SEAL 45x100x10	1
21	MTR349	4 CHANNEL PULLEY 180	1
22	MTR269	SPACER WASHER 60x50x5	2
24	MKR175	BITE LIMITER D.267 MPG70R, MPG90R, MPG105R	S/M

*1 Part number M178.310-00.09-01 is always sold with hammers and bolts (contains parts 10, 11, 12, & 24).

Part number MKR167 is the complete rotor for the MPG70R, MPG90R, and MPG105R models.

*2 Part number MTR549 only corresponds to the hub (part 18).

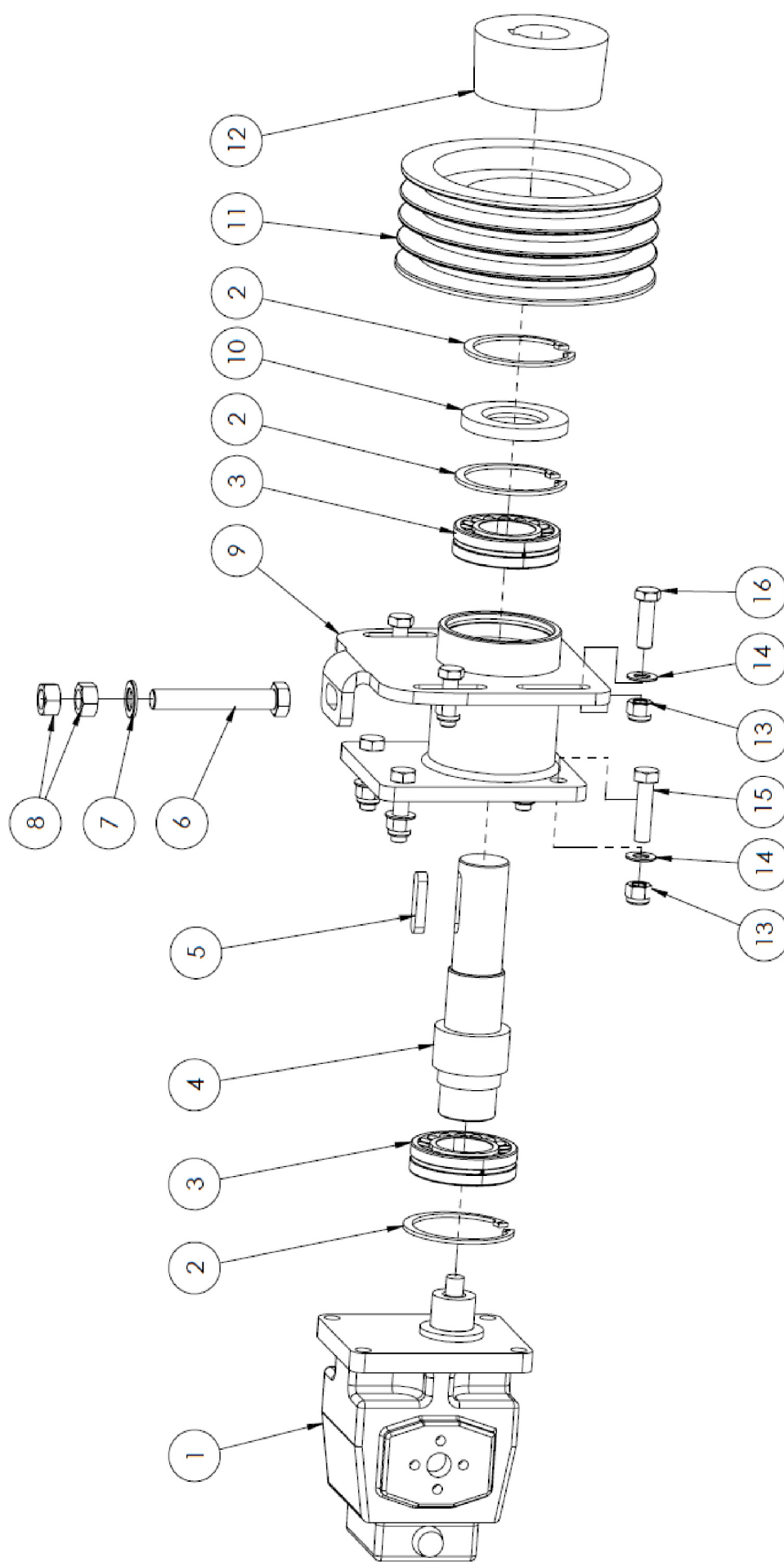
OTHER NOTES

Customers can purchase a complete mounted hub (includes parts 5, 9, 15, 16, 17, 18, 19, & 22).

The part number for the complete hub is MTR1016 (outside part of the machine).

The part number for the complete hub is MTR1412 (pulley side).

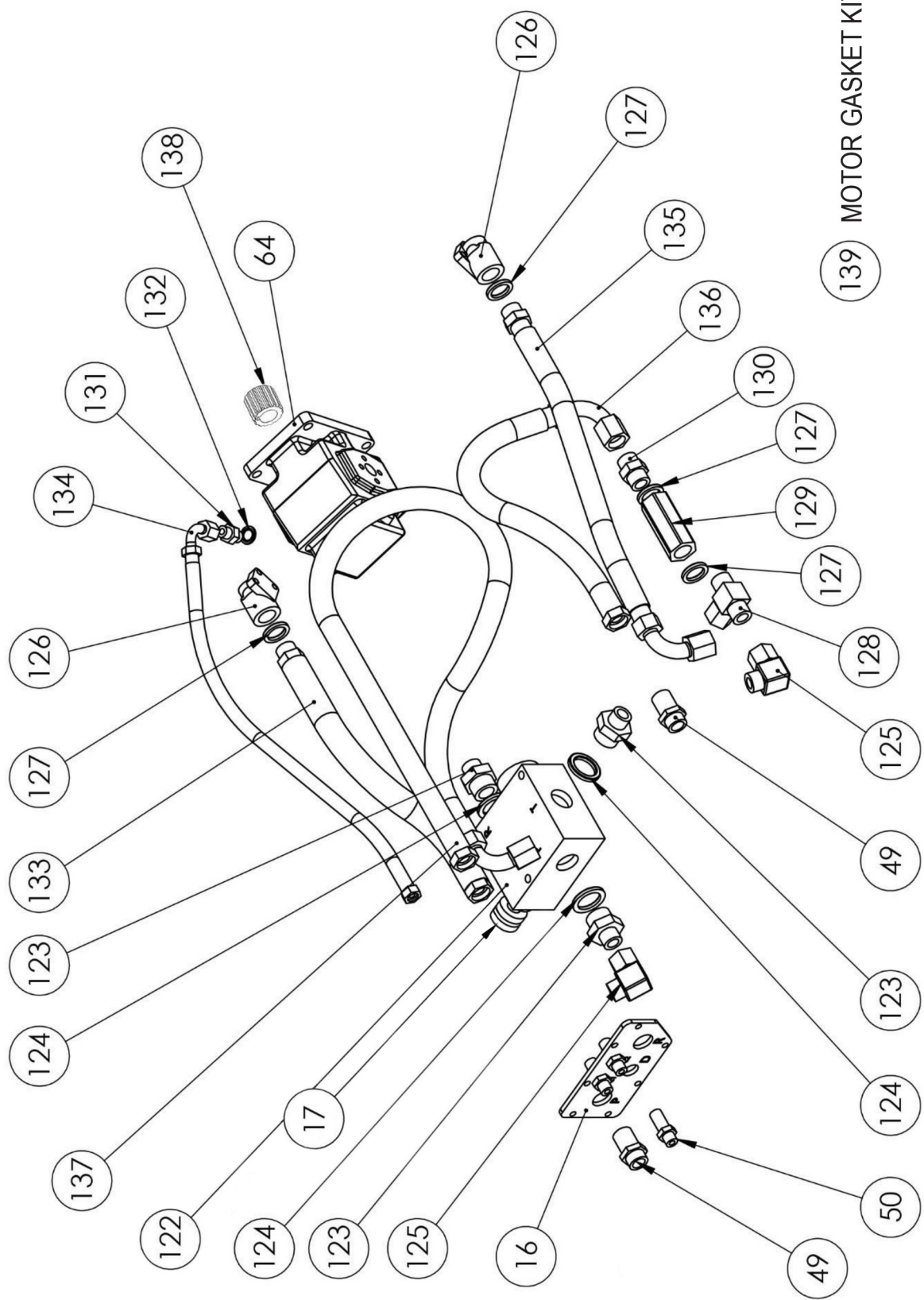
MODEL	NUMBER OF TEETH/HAMMERS	NUMBER OF BOLTS
MPG70R	16	32
MPG90R	20	40
MPG105R	24	48



18 COMPLETE ASSEMBLY- EVERYTHING BUT THE MOTOR (1), PULLEY (11), & TAPER BUSHING (12)

TRANSMISSION ASSEMBLY

NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	MKR024	MOTOR, HYDRAULIC 31cc	1
1	MKR031	MOTOR, HYDRAULIC 36cc	1
1	MKR022	MOTOR, HYDRAULIC 41cc	1
2	MVR123	INTERIOR C-CLIP I-85	3
3	MKR174	SPHERICAL ROLLER BEARING 22209	2
4	MKR006	EXTENSION SHAFT MPG70R, MPG90R, MPG105R	1
5	MTR057	SHAFT KEY 12x8x50	1
6	MVR230	HEX BOLT 8.8 M12 x 40	1
7	MVR066	WASHER M16	1
8	MVR002	HEX NUT M16	2
9	M176.810-00.00-00	MOTOR HUB	1
10	MTR100	SEAL 45x85x10	1
11	MTR610	4 CHANNEL PULLEY 200	1
12	MTR309	TAPER BUSHING SPB 3020-40	1
13	MDR061	HEX NUT M12	8
14	MVR041	WASHER M12	8
15	MVR130	HEX BOLT 8.8 M12 x 50	4
16	MVR230	HEX BOLT 8.8 M12 x 40	4
18	MKR170	COMPLETE HUB (PARTS 2,3,4,5,9,10,13,14,15,16)	1



HYDRAULIC PARTS

NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
16	M176.100-33.00-00	HYDRAULIC PLATE	1
17	MKR029	FLOW REGULATOR 3/4 FPRF	1
49	MCOMHIDRAM148	BULKHEAD FITTING 3/4"	2
50	MCOMHIDRAM052	BULKHEAD FITTING 1/2"	3
64	MKR024	MOTOR, HYDRAULIC 31cc	1
64	MKR031	MOTOR, HYDRAULIC 36cc	1
64	MKR022	MOTOR, HYDRAULIC 41cc	1
122	MKR038	VALVE BLOCK 1" S G 3 VIAS	1
123	MCOMHIDRAM029	UNION 3/4" - 1"	3
124	MCOMHIDRAM005	BONDED WASHER BSPP 1"	3
125	MCOMHIDRAM160	90° ELBOW MF - HG 3/4"	2
126	MCOMHIDBRI009	MOTOR FLANGE 90° 3/4 40MM	2
127	MCOMHIDRAM004	BONDED WASHER BSPP 3/4"	4
128	MVR253	TEE MF-MF-HG 3/4"	1
129	MCOMHIDVYR003	INLINE V-VALVE 3/4" - 0.5 BAR	1
130	MVR223	UNION MF 3/4" - MF 3/4"	1
131	MCOMHIDRAM184	UNION MF 1/2" - MF M16x150	1
132	MVR145	BONDED WASHER M16x150	1
133	MCOMHIDM34107	HOSE 3/4" 720 HG 3/4" HG 3/4"	1
134	MCOMHIDM12134	HOSE R1 1/2" 630 HG 1/2" HG90 1/2"	1
135	MCOMHIDM34108	HOSE 3/4" 600 HG 3/4" HG 3/4"	1
136	MCOMHIDM34110	HOSE 3/4" 450 HG 3/4" HG90 3/4"	1
137	MCOMHIDM34109	HOSE 3/4" 900 HG 3/4" HG 3/4"	1
138	MRECCABTOR001	KEY KIT 4x7 5x19 WITH NUT AND WASHER	1
139	MKR014	GASKET MOTOR KIT	1

