

MINI-EXCAVATOR

“MP-72 / MPT-72”

“MP-82 / MPT-82”

OPERATOR'S MANUAL



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PRESENTATION OF THE MANUAL

General information

The operator of this equipment must read this manual with care and attention before operating the machine.

This manual is intended for the owner and people likely to use and maintain the machine produced by Chargeur Plus. This manual was written to ensure the complete safety of the users of the equipment.

All manufacturing parts, connectors and controls were designed and built with maximum safety in mind, meaning they are particularly robust, even when they are not used in accordance with this manual.

The machine (in its assembled form) was tested before being delivered. Long-term performance depends on the correct usage and necessary preventive maintenance, in accordance with the instructions given in this manual.

For the usage, maintenance, restoration and technical safety checks of the excavator, the owner must ensure that the person using the equipment has the necessary skills to do so.

Only people capable of using the excavator independently, and those who have received the necessary information for operating this machine are authorised to operate it.

Original spare parts can be ordered directly from SAS Chargeur Plus or through one of their approved dealers. It is therefore necessary to specify the name of the model, the date the machine was put into circulation and a photo of the part if necessary. Any parts ordered from another dealer could compromise the safety of the machine.

First use of the machine

Before using the machine for the first time, carry out a visual inspection of the excavator to make sure no external damage occurred during transport. Check all the parts supplied with the machine.

- Check the tracks are tightened
- Check the levels (oil and fuel)

See the maintenance chapter in order to carry out these checks correctly.

Running-in the excavator:

For the first 50 hours of use, it is absolutely essential to follow these instructions:

- Warm up the excavator with medium engine power and rev the engine a little; do not warm up the engine at idling speed,
- Do not rev the engine unnecessarily.

Specific maintenance instructions:

- Change the engine oil before reaching 50 hours of usage (see the scheduled maintenance chart),
- Check the hydraulic oil to make sure there are not any visible impurities.

CE CONFORMITY DECLARATION

With this CE declaration of conformity, the company CHARGEUR PLUS confirms that the excavator respects all regulations and standards applicable at the time of delivery. CE conformity marking is mentioned on the serial number plate; this confirms compliance with all applicable regulations and standards.

Any unauthorised modifications or any spare part added at a later date could have a negative impact on the stability of the excavator and as a consequence, the CE declaration of conformity is no longer valid.

When the assembled excavator is delivered, the CE declaration of conformity is attached to the invoice. This CE declaration of conformity must be carefully retained and presented upon request, to the appropriate authorities.

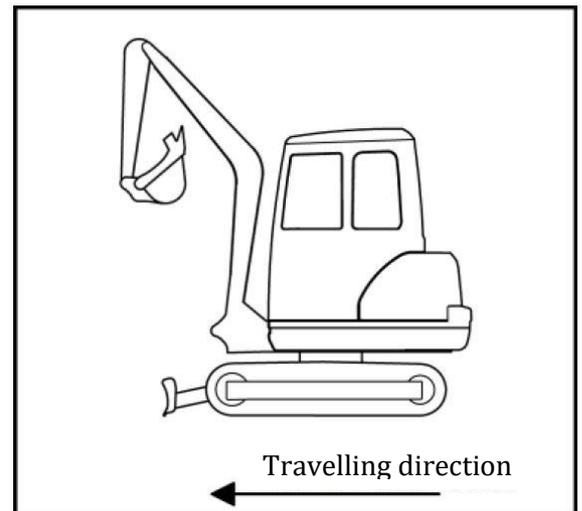
ORIGINAL	
	
DECLARATION CE DE CONFORMITE DES MACHINES	
Nous déclarons sous notre responsabilité :	
Fabricant :	Responsable du dossier technique :
SAS – Chargeur Plus ZAC de Belle Aire Sud 2 rue Pythagore 17400 Aytré SIRET : 481 520 088 00024	Directeur technique
Que le produit désigné ci-après en raison de sa conception et de son type ainsi que du modèle mis en circulation par nos soins répond aux exigences fondamentales en matière de sécurité et santé définies par la directive CE concernée. Nous déclinons toute responsabilité en cas de montage non conforme aux notices de montages des machines fournies dans les versions : en kit (à souder, assembler et peindre) ainsi que la version soudée et peinte à assembler. Cette déclaration est invalidée par toute modification non approuvée par nos services.	
Produit : Mini pelle	
Modèle : MP - _ _ _ - _ _ _ - _ _ / MPT - _ _ - _ _ _ - _ _	
N° de série :	
Année de construction :	
Masse en ordre de marche : _ _ _ kg	
Directives CE applicables : directive « Machines » 2006/42/CE	
Conforme aux normes NF EN 474-1+A4, NF EN 474-5+A3.	
Respecte la directive comptabilité électromagnétique 2017/30/CEE.	
Les documents techniques de montage et d'utilisation ont été réalisés par le service habilité pour la documentation de la SAS – Chargeur Plus.	
Signature et qualité du signataire : }	
Fait à :	
Le :	

1-TECHNICAL CHARACTERISTICS

1.1-General

The information, instructions and data given in this operator's manual can be applied to all models. If instructions concern a specific model, this will be detailed.

The instructions "front" or "travelling direction" refer to the directions as seen by the operator on the driving seat. The expression "forward motion" implies that the blade is at the front, in the same direction the machine is moving, as shown on the image.



1.2-Intended use and limitations

The excavators described in this operator's manual are intended for excavation, foraging and loading operations, transport and unloading of earth, rocks and other materials, and also for landscaping. Wherever possible, loading, transport and dumping the contents of the bucket should be done without the excavator moving. The maximum authorised lifting capacity of the bucket should never be exceeded.

Compliant usage also includes the following:

- Respecting all the instructions given in this manual,
- Carrying out all the required maintenance, at the scheduled times indicated,
- Respecting the scheduled compulsory tests, to prevent accidents.

Forbidden usage:

Any incorrect use of the excavators described in this manual, that is to say any difference in use compared to the information given in the next section of the operator's manual, is considered as forbidden. The same applies in the case of non-compliance with the standards and instructions given in this operator's manual.

Improper use can cause risks. Here are some examples of improper or abusive usage:

- Using the excavator to lift loads without assembling the correct lifting equipment,
- Using the excavator in a contaminated environment,
- Using the excavator in enclosed areas without sufficient ventilation,
- Using the excavator in extreme temperatures (hot or cold),
- Using the excavator to work underground,
- Using the excavator to transport people in the bucket,
- Using the excavator to bring down walls with the bucket,
- Using the excavator with a palette jack which is not approved by Chargeur Plus

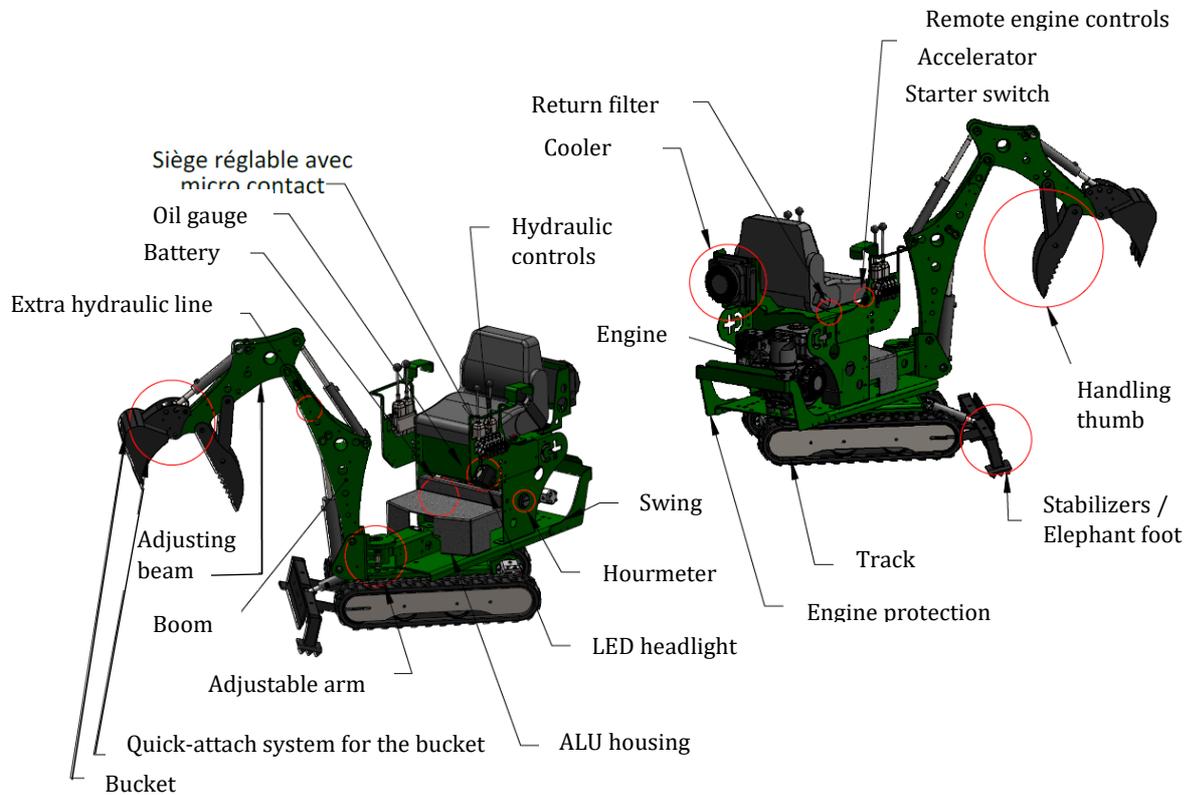
External operating conditions:

Usage temperature	Minimum	-10°
	Maximum	40°
Maximum humidity		90% at 40°
Maximum wind speed authorised		60 km/h
Maximum Temperature of oil in the tank		60°

** Remember to order the cooler from Chargeur Plus, in the event of hydraulic or engine problems which could increase the temperature of the oil and could be dangerous**

1.3-Description of the machines

See below the full description of a machine with all available options, depending on the model of your machine, some parts will come at an extra charge.

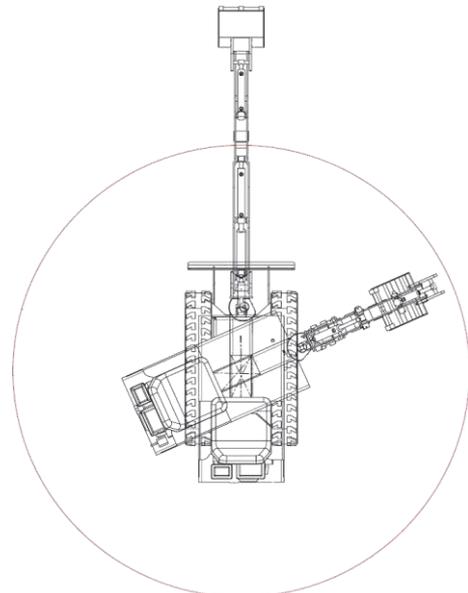
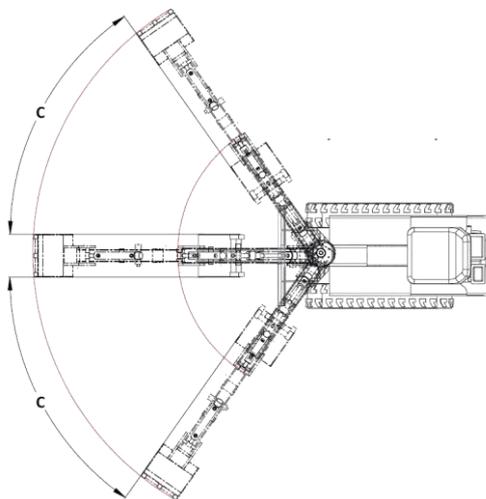
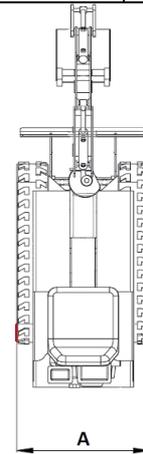
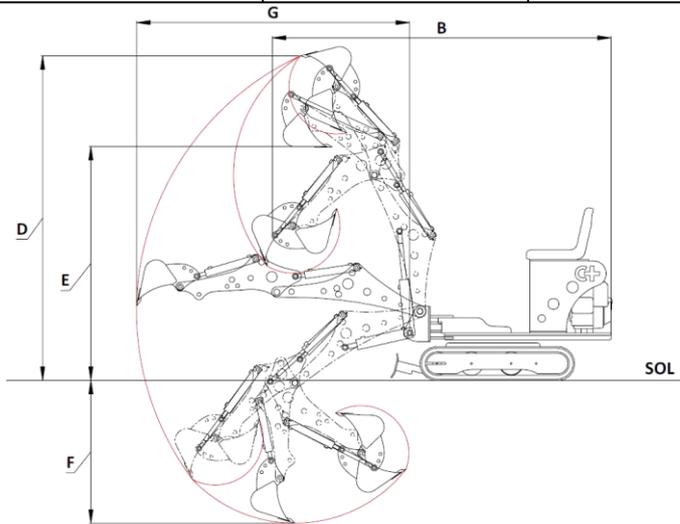


1.4-Dimensions and characteristics

Model:	MPT-72	MP-72	MPT-72-P	MP-72-P
Version:	2017	2017	2017	2017
Origin:	EU - France	EU - France	EU - France	EU - France
Service weight*:	440 kg	470 kg	505 kg	535 kg
Rotation:	swing 360°	Arm 120°	swing 360°	Arm 120°
Fuel:	Petrol/Diesel		Petrol	
Engine:	6.5hp/7hp (depending on options)		9.5 hp	
Type:	Single cylinder, 4-stroke		Single cylinder, 4-stroke	
Power output:	4.1 kW		6.1kW	
Displacement:	196 cc		277 cc	
Consumption (100% charged):	1.9 L/h		1.2 L/h	
Fuel tank capacity:	3,7 L		5,5 L	
Hydraulic pump:	Gear pump 3.2cc		Double gear pump 3.2 + 3.2cc	
Operating pressure:	140 bars		160 bars	
Flow at low speed (2000tr/min) :	6.4 L/min		2 x 6.4 L/min	
Traction engine:	Orbital 160 cc		Orbital 160 cc	
Hydraulic tank capacity:	17 L			
Rubber tracks:	150 x 72 x 31 As an option: 180 x 72 x 31			
Normal moving speed:	2.2 km/h		2.4 km/h	
Quick moving speed:	3.5 km/h		4.2 km/h	
Swing rotation speed:	N/A	3.5 tr/min	N/A	3.5 tr/min
Noise level at 1m:	80 dB(A)			
Noise level from the driver's seat:	83 dB(A)			

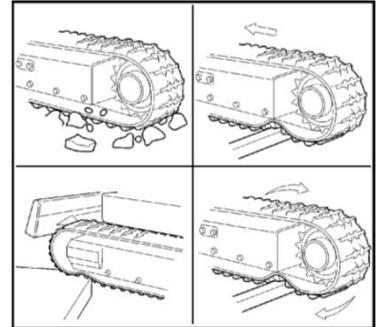
Model:	MPT-82	MP-82
Version:	2017	2017
Origin:	EU - France	EU - France
Engine type:	9hp petrol engine / 10hp diesel	
Power:	6kW	6kW
Service weight*:	730 Kg	680 Kg
Fuel:	Petrol / Diesel	
Engine:	9 hp/10hp/14hp	
Type:	Single cylinder, 4-stroke	
Power output:	6 kW	
Displacement:	270 cc	
Consumption (100% charged):	1.9 l/h	
Fuel tank capacity:	6 L	
Hydraulic pump:	Double gear pump 3.15 + 3.15cc	
Operating pressure:	140 bars	
Flow at low speed (2000tr/min) :	6.4 + 6.4 l/min	
Traction engine:	Orbital	
Hydraulic tank capacity:	40L	
Rubber tracks:	180x72x43	
Normal moving speed:	1.5 km/h	
Quick moving speed:	2 km/h	
Swing/arm rotation speed:	3.40 tr/ min	/
Noise level at 1m:	80 dB(A)	80 dB(A)
Noise level from the driver's seat:	83 dB(A)	83 dB(A)

Machine	MP-72	MPT-72	MP-82	MPT-82	Reference
Total height (arm folded down)	1700 mm	1700 mm	1700 mm	1700 mm	
Total width	720 mm	720 mm	830 mm	830 mm	A
Total length (arm folded down)	2400 mm	2400 mm	2400 mm	2400 mm	B
Swing:					
Rotation:		360°		360°	
Arm:					
Joint (adjustable arm)	110° (55°to the right and 55°to the left)		110° (55°to the right and 55°to the left)		C
Max height (open bucket)	2100mm	2100mm	2200mm	2200mm	D
Max breakout height	1600 mm	1600 mm	1700 mm	1700 mm	E
Max digging depth	950 mm	950 mm	1700 mm	1700 mm	F
Max length	1800 mm	1800 mm	2300 mm	2300 mm	G
Ripping power	0.8/1.2 tonnes	0.8/1.2 tonnes	1.5 tonnes	1.5 tonnes	



Information regarding the rubber tracks:

- Travelling or turning 180° on objects with sharp edges or over steps can cause extreme stress to the tracks and can break them or cut into the rubber surface of the tracks or the metallic casing.
- Make sure that no foreign objects become lodged in the rubber tracks. The foreign objects can damage the tracks and cause cracks; this could also bend the track tightening pin,
- Make sure the rubber tracks don't come into contact with oil.
- If fuel or oil has been spilled on the rubber tracks, make sure they are cleaned immediately.
- Avoid sharp turns on road surfaces with a high friction coefficient, for example on concrete pavements.
- Do not work with this machine in a place where it will be in contact with saltwater. (The salt corrodes the metallic casing).



2 SAFETY NOTICE

2.1-Foreword

2.1.1-Responsibilities and tasks

**!/ \ IMPORTANT! / **

It is strictly forbidden to drive the machine on the road.

For all machines mentioned in this manual, the safety regulations must be adhered to, as well as the instructions and rules regarding the usage of excavators.

The user (entrepreneur) has the following duties:

- Make sure all current regional and national regulations are respected,
- Respect the legal regulations (laws, regulations, instructions, etc.) indicated in this operator's manual, to ensure the machine can be operated in complete safety,
- Make sure that this operator's manual is available to all operators and maintenance personnel concerned, and that the information, comments, warnings and safety instructions are fully respected,
- Make sure the safety instructions are respected,
- Take the necessary measures to prevent switching on or operating the excavator without prior authorisation,
- Ensure the excavator is used in accordance with the location and is operated in compliance with the conditions of use given in this manual.

Dangers when using the excavator:

- The excavators are built in accordance with current manufacturing techniques and in compliance with recognised safety instructions. However, using an excavator could constitute a health hazard or even death of an operator or third party, and risk damaging the machine itself or other assets and materials. It is only authorised to use the excavator for the work it is intended to do, and in compliance with the safety instructions
cf: Maintenance and machine verifications chart.
- Repair immediately any faults which could affect the safety of the machine.
cf: Maintenance and machine verifications chart.

Information about modifications:

Any modifications to the machine which are not authorised by Chargeur Plus, could affect the operation and safety of the machine.

2.1.2-Duties and warranty

Knowledge of the safety regulations and instructions is a basic requirement in order to correctly operate the excavator in complete safety.

The instructions given in this manual, and in particular, the safety instructions, must be respected by any person using the excavator or working with this machine, as well as the current rules and regulations for the prevention of accidents, in force at the location in question.

Details of the warranty such as scope, duration and nature are stipulated in the terms and conditions of sale and delivery issued by the manufacturer. Regarding the warranty claims which could arise due to incorrect documentation, the current operator's manual will be the correct one.

In addition to the terms and conditions of sale and delivery, the following clauses are applicable: a warranty claim is invalid for any damages to a person and material damages, in the event it is caused by one of the following:

- Any use of the excavator which is not in accordance with the intended usages and instructions,
- Switching on or driving the excavator incorrectly and improper maintenance of the excavator,
- Use of the excavator with faulty safety equipment or with safety and protection equipment which is not correctly assembled or broken,
- Lack of understanding and respect of the instructions in the present operator's manual,
- Usage by an unqualified operator,
- Repair work which is not carried out correctly,
- Unauthorised modifications in the assembly of the excavator,
- Insufficient monitoring of spare parts which are worn,
- Damage caused by foreign objects or force majeure.

2.1.3-PPE (Personal Protective Equipment)

Depending on the usage of the machine, the operator must be familiar with the nature of the possible hazards and consequently, equip themselves with the necessary PPE. For example, in the event of falling object hazards, they must be equipped with a hard hat, or in the event of chemical hazard; with gloves and a mask for respiratory protection.

This equipment is compulsory and means the operator can work in complete safety.

WARNING!

The operator must wear PPE which enable them to move freely.

FOR INFORMATION!

PPE must be chosen depending on the nature of the work to be done, the working environment and working conditions.

2.1.3-Safety symbols

	General hazard		Eye protection compulsory
	Suspended load		Ear protection compulsory
	Tipping risk		Head protection compulsory
	High temperatures		Hand protection compulsory
	Risk of slipping		Foot protection compulsory
	Danger of crushing, risk of hand injuries		Body protection compulsory
	Crushing hazard		

2.2-Working area

For usage in the right safety conditions, you must respect the following:

- A safety perimeter of 3m in which no person shall pass (you could cordon off the area with tape),
- The stability of the machine; do not exceed 10° tilting and make sure to use the stabilisers,
- Work on stable ground where the machine can move easily and make sure to keep the vibrations felt by the operator to a minimum. It is sufficient to simply use the machine as per the intended conditions, taking into account the actual conditions of the outdoor location and the effects these could engender,
- Do not work under electrical power lines to avoid any contact with the excavator arm when it is lifted.
- Do not use the machine in undesirable weather conditions, the machine must be switched off and you should go to a safe place (the machine is not equipped with lightning protection),
- Be aware of underground pipelines, you must be aware if they are present in your working area.

It is the user's responsibility to ascertain whether there are dangerous conditions when using the machine such as for example, the presence of toxic gas, people or obstacles,...

When the machine is moving, the operator must ensure that there are no people or obstacles in the way. If there are they must warn them to move, either verbally or with a pre-defined gesture.

2.3-Nuisances

The values given in the present operator's manual were recorded during a test cycle carried out on an identical machine. This data is valid for any machine with the standard equipment. The recorded values are given in the technical characteristics.

Noise emission:

Noise emission was noted in accordance with the process defined by the standard ISO4871, to determine the guaranteed sound pressure levels, based on the 200/14/CE guidelines, appendix VI.

However, the values given for noise emission are not applicable to determine the noise emission for different workstations.



Noise levels which exceed 85dB(A) can cause hearing problems.

For a noise level of 80 dB(A), ear protection is recommended when using the machine.

For a noise level of over 85 dB(A), ear protection is compulsory for the operator.

Vibrations:

Vibrations were noted for an identical machine before being shipped.

If the operator is exposed to vibrations for an extended period of time, this must be measured at the workplace, in accordance with 2002/44/CE guidelines, in such a way as to take into account individual factors.

According to standard EN-474-1, the level of vibrations is lower than 2m/s^2 .

Lighting:

When the level of lighting at the workplace and machine workstations is lower than 100 LUX, it becomes necessary to use extra lighting equipment. If the machine is not equipped with such equipment, it is necessary to use lighting powered by an external power source.

Lights for the working area must be positioned and set up so that they do not dazzle the personnel working on the worksite.

2.4-Safety features

Seat with sensor:

Every mini-excavator is equipped with a seat and sensor, so that in the event of a problem, such as an operator falling, the machine is stopped. The machine will only remain in operation if the user is sitting on the seat.

This seat can be adjusted so that the user can position themselves comfortably according to their height. The adjusting lever is found at the front right side of the seat, it is pushed to the left to move the seat forwards or backwards (the hydraulic control switches are also adjustable for optimum comfort).

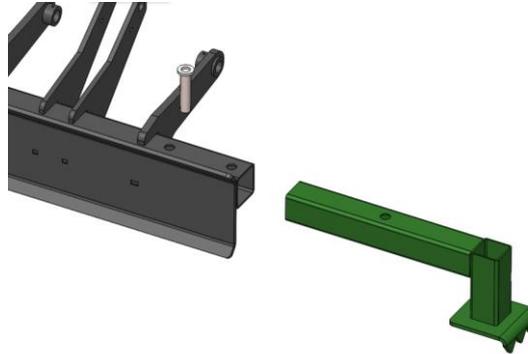
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Stabilisers (elephant foot):

The stabilisers are safety features which, when the machine is equipped with them, keep the machine stable at all times during usage.

Below is an image which explains how to install them safely.



2.5-Residual risks

Hydraulic risk:

In the event oil enters the eye, rinse immediately with clean water, then consult your doctor without delay.

Skin and clothes must not come into contact with hydraulic oil. Skin which does come into contact with hydraulic oil must, if possible, be carefully washed immediately, several times over, with water and soap. If this is not done, the oil could irritate the skin and cause dermatitis.

In the event hydraulic oil is projected or spilled onto clothes, you must get changed immediately.

If a person inhales the hydraulic oil vapours (mist), they must be taken to see a doctor immediately.

In the event of a leak in the hydraulic system, do not switch on the excavator or switch it off immediately.

Hydraulic hose rupture:

The hydraulic hoses and connectors used on this machine are compliant with regulations. However, there is always a risk of rupture.

Any work on the hydraulic circuit must be carried out by trained personnel, equipped with the necessary PPE (eye goggles in particular).

Do not search for oil leaks with bare hands, always use a piece of wood or cardboard. To search for leaks, wear protective equipment (goggles and gloves).

Tipping:

It is hazardous to move the mini-excavator on particularly rugged or unstable ground. The operator must proceed with caution.

Transporting people:

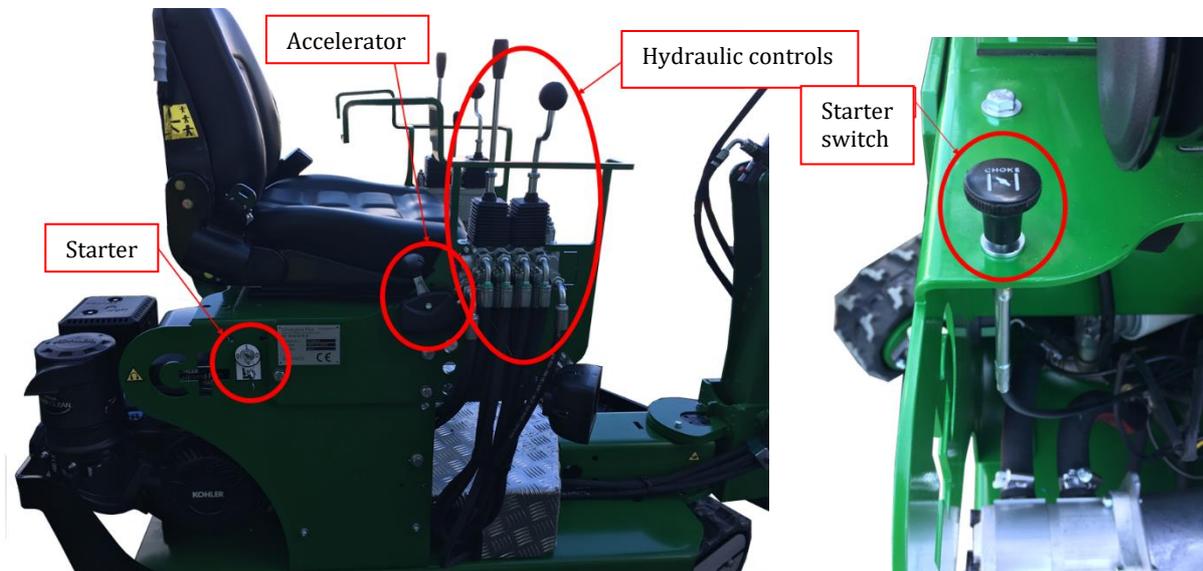
It is strictly forbidden to transport or lift people with these machines.

Usage in enclosed areas:

In the event the machine is used inside a building for example, or in an area without ventilation, an exhaust gas ventilation system must be installed so that the operator is not poisoned.

3 OPERATION

3.1-Workstation



3.2 Start / Stop

To start the machine:

- Check the fuel injection is open,
- Sit down on the seat,
- Pull the “*Starter switch*”,
- Turn the starter to “*Start*”,
- Push the “*Starter switch*” back down,
- Use the accelerator to set the speed as needed;

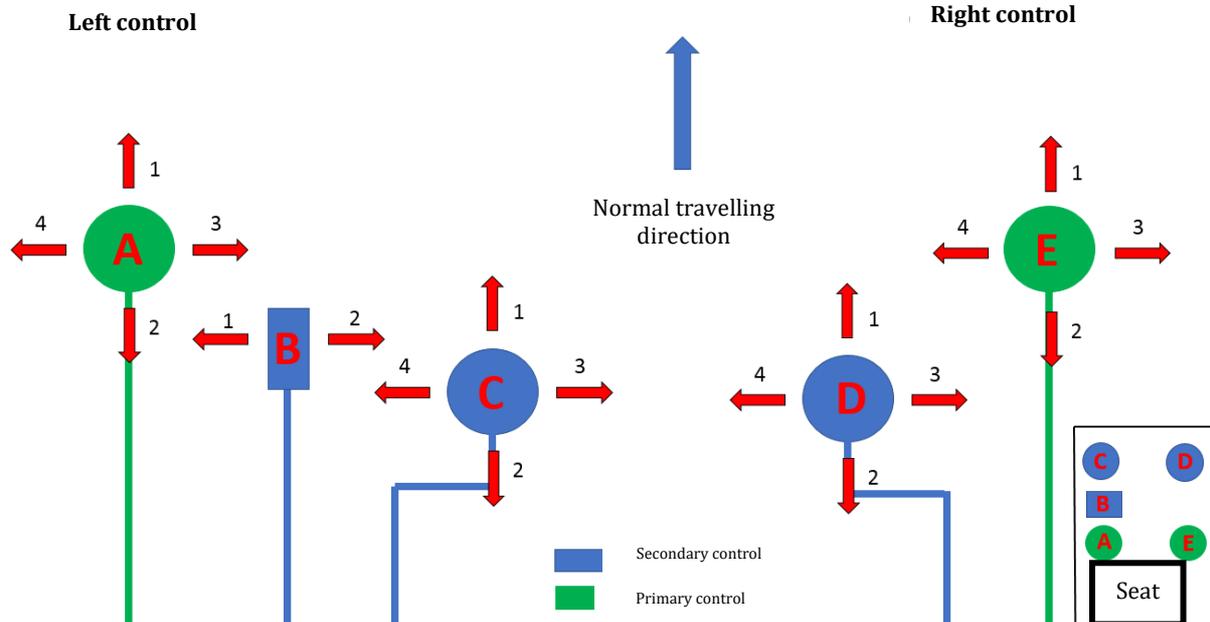
To turn off the engine, turn the starter to the OFF position.

IMPORTANT!

It is absolutely compulsory to turn the starter to the OFF position after using the mini excavator, if this is not done, the hourmeter will unnecessarily count extra hours.

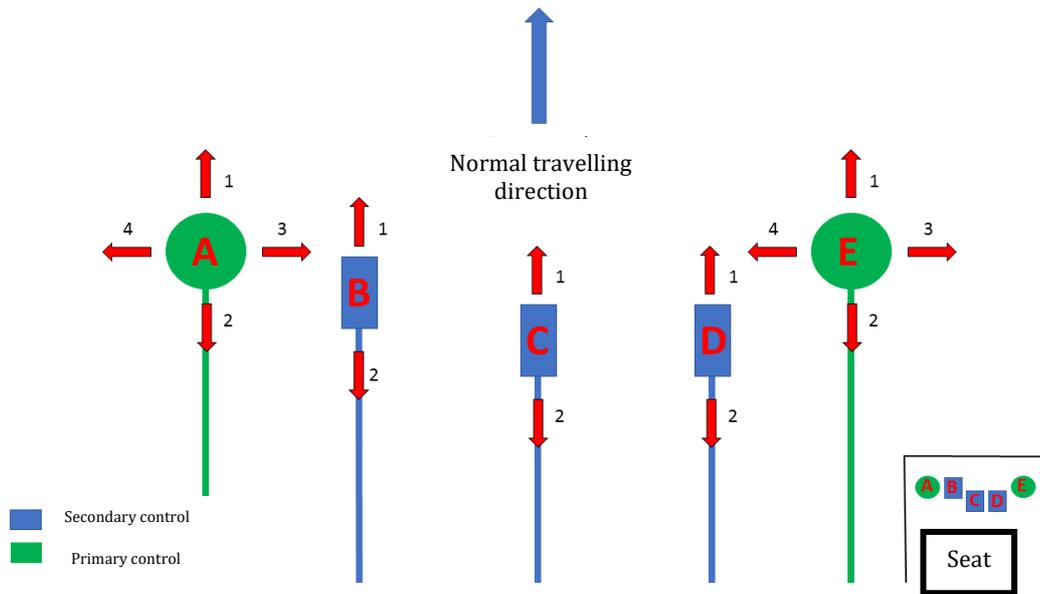
3.3-Operation

Side controls



Controls	Index	Movement	Controls	Index	Movement
Left Joystick (C)	1	Left track moves forward	Right Joystick (D)	1	Right track moves forward
	2	Left track moves backward		2	Right track moves backward
	3	Free for option		3	Blade down
	4	Free for option		4	Blade up
Left Lever (B)	1	Arm is rotated to the left			
	2	Arm is rotated to the right			
Left Joystick (A)	1	Adjusting beam is extended	Right Joystick (E)	1	Boom down
	2	Adjusting beam is retracted	2	Boom up	
	3	Swing is rotated to the right	3	Bucket is opened	
	4	Swing is rotated to the left	4	Bucket is closed	

Front controls

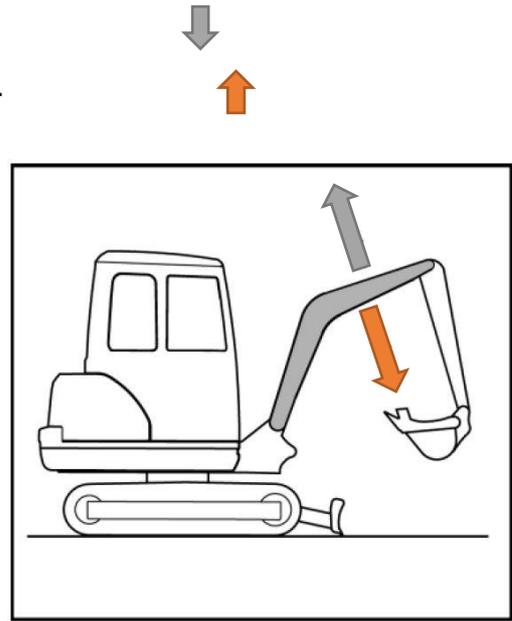


Controls	Index	Movement	Controls	Index	Movement
Left Joystick (A)	1	Adjusting beam is extended	Right Joystick (E)	1	Boom down
	2	Adjusting beam is retracted		2	Boom up
	3	Swing is rotated to the right		3	Bucket is opened
	4	Swing is rotated to the left		4	Bucket is closed
Lever (B)	1	Blade down	Lever (C)	1	Left track moves forward
	2	Blade up		2	Left track moves backward
			Lever (D)	1	Right track moves forward
				2	Right track moves backward

Boom controls:

To move the boom up, pull the right joystick (E) back.

To move the boom down, push the right joystick (E) forward.

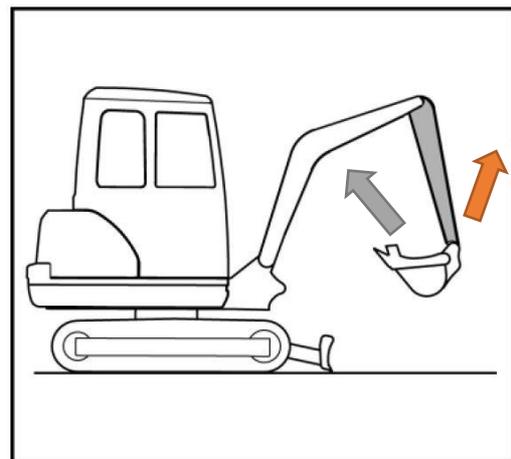


When the boom is moving down, make sure the boom or the bucket teeth do not touch the blade.

Adjusting beam controls:

To extend the adjusting beam, push the left joystick (A) forward.

To retract the adjusting beam, pull the left joystick (A) back.

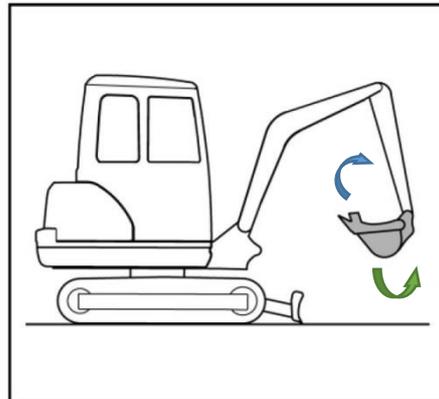
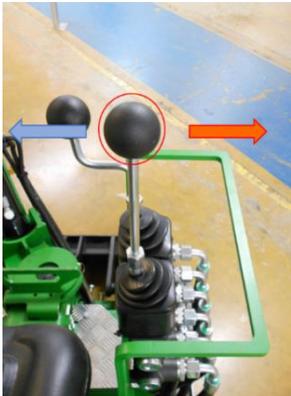


Bucket controls:

To close the bucket (excavation), push the right joystick (E) to the left.



To open the bucket (dumping), push the right joystick (E) to the right.



When the bucket is being closed, make sure the bucket teeth do not touch the blade.

Rotation of the swing (MPT -82 or pivoting frame option):



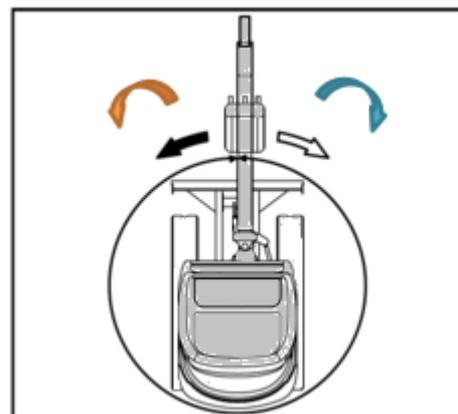
During rotation, make sure the parts of the excavator which are in use do not hit any obstacles.

During rotation, no persons should be in the rotation area.

To rotate to the left, push the left joystick (A) to the left.



To rotate to the right, push the left joystick (A) to the right.



IMPORTANT!

When the swing is moving and the arm is pivoted, the arm could go into a floating position as the swing rotates. If this happens, pivot the arm as far as possible to one side and keep your hand on the controls for a further 3 seconds once the arm has reached the furthest point. Extra caution must be taken when working along a wall.

Rotation of the arm (MP-82 or adjustable arm option):

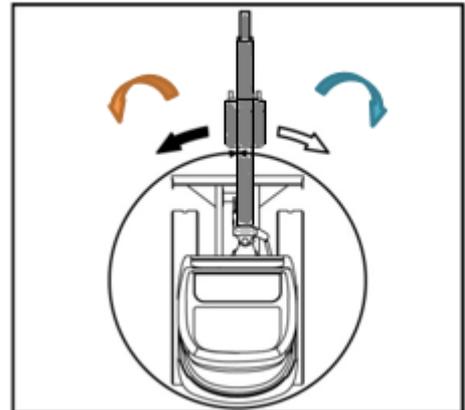
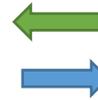
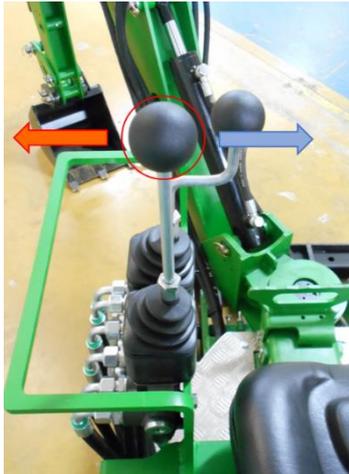


During rotation, make sure the parts of the excavator which are in use do not hit any obstacles.

During rotation, no persons should be in the rotation area.

To rotate to the left, push the left lever (B) to the left.

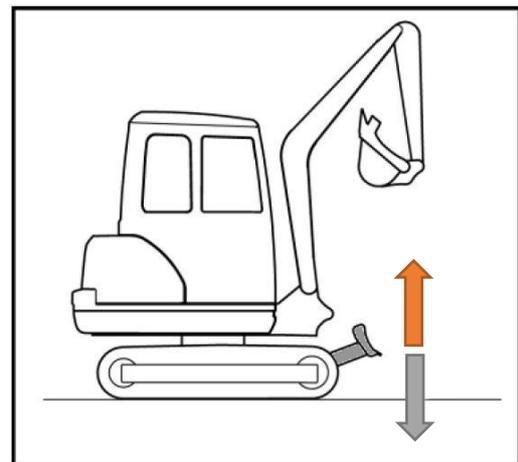
To rotate to the right, push the left lever (B) to the right.



Blade controls:

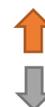


When the blade is moving down, make sure no persons have a foot in the way of the blade.



To move the blade down, push the joystick (B) forward.

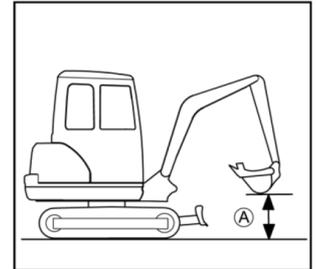
To move the blade up, pull the joystick (B) back.



Travelling forward:

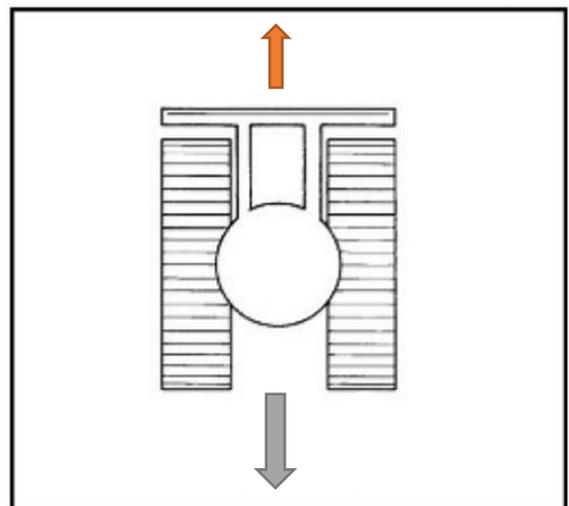
When driving the excavator, you must respect the following safety instructions.

- When working on a hillside, consider the tilt of the excavator (see illustration).
- Maximum side tilt -> 27% or 15°.
- Maximum longitudinal tilt -> 18% or 10°.
- When travelling forward, keep the bucket as low as possible.
- Check the bearing capacity of the ground, check whether there are pot-holes or other obstacles.
- When approaching an embankment or a ditch, move very carefully, take into account the risk of unstable earth.
- When moving down a slope, move forward slowly to avoid losing control of accelerations.
- When travelling, the bucket should be approximately 200 – 400 mm from the ground (distance "A", on the illustration).
- Move the blade up to the highest possible position.



Push the two travelling joysticks (C-D) forward at the same time, the excavator will move straight forward. When these controls are released, the excavator will stop immediately.

When the two travelling joysticks are pulled back, the excavator will reverse in a straight line.

Travelling around bends:

The following instructions refer to moving forward around a bend with the blade at the front. If the blade is at the rear, the movements must be carried out in reverse.

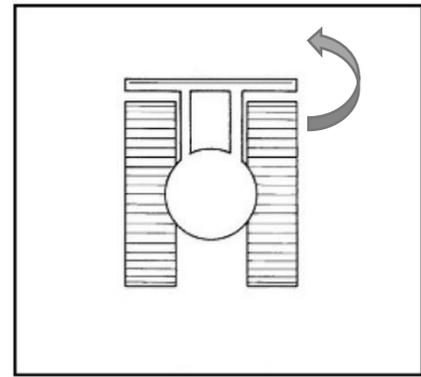
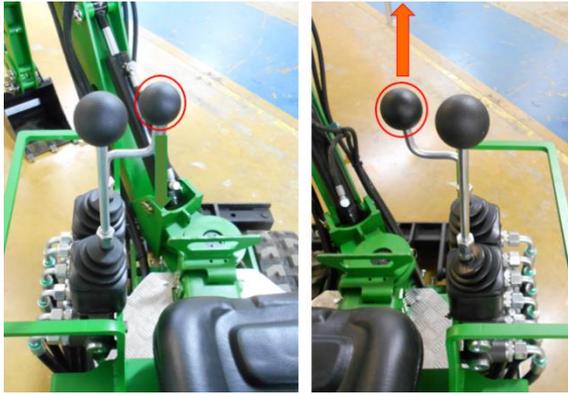
When moving around bends, make sure no persons are in the swing area of the excavator.

Rotating left:

Leave the right travelling joystick in the idle position and push the left travelling joystick back.

It is also possible to rotate to the left if the right joystick is pushed forward and the left joystick is left in the idle position.

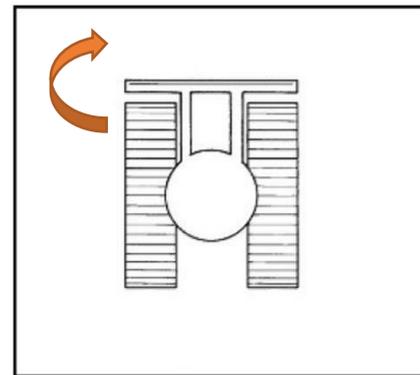




Rotating right:

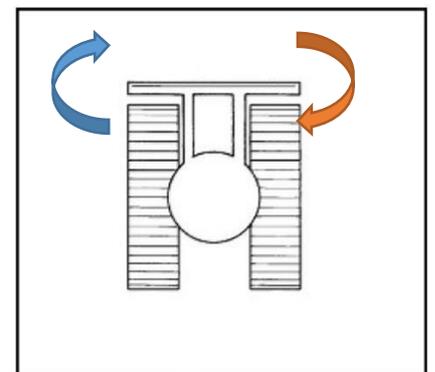
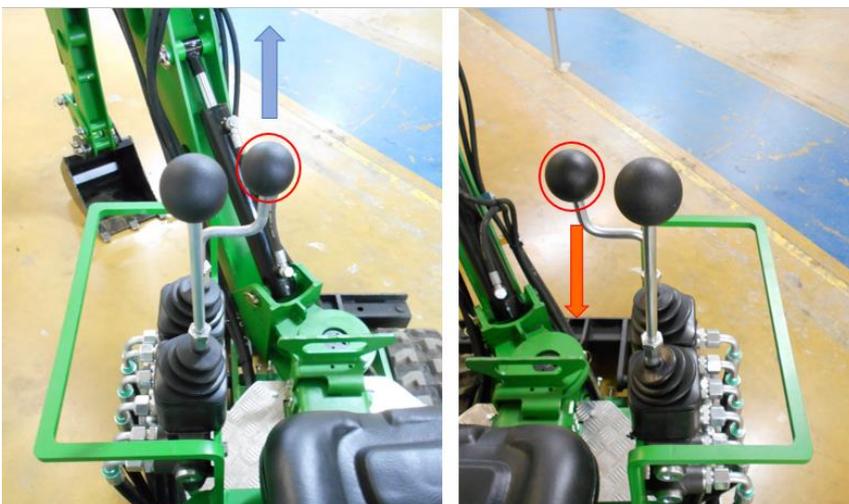
Leave the left travelling joystick in the idle position and pull the right travelling joystick back.

It is also possible to rotate to the right if the left joystick is pushed forward and the right joystick is left in the idle position.



Turning 180° on the spot:

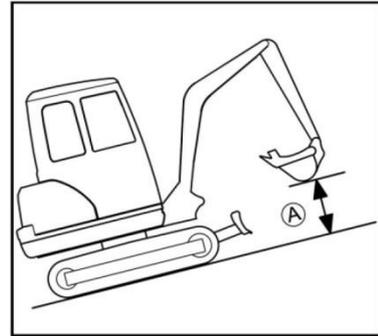
Push both joysticks in opposite directions at the same time. The tracks will turn in opposite directions and will pivot around the vertical axis.



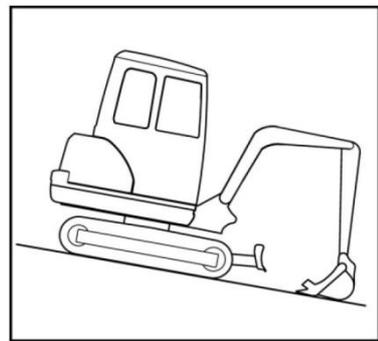
Travelling on a slope:

Extreme caution must be taken when travelling on a slope.

When travelling uphill, lift the bucket approximately 200 – 400 mm from the ground (distance “A” on the illustration)



When travelling downhill, let the bucket slide along the ground, if this is possible on the type of ground in question.

Excavation work:

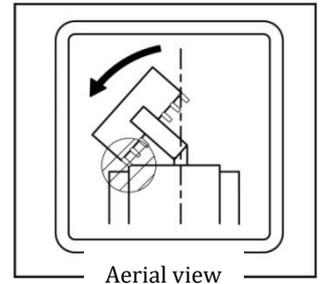
When working with the excavator, you must respect the following safety instructions:

- It is prohibited to try and crush concrete or boulders with the bucket, using the adjustable boom.
- During excavation work, do not let the bucket fall.
- Do not operate the cylinders to the stroke end. Operate with a small safety margin.
- Do not move the excavator or dig the earth when the bucket teeth are stuck in the ground.
- When digging earth, do not bury the bucket too far into the ground. It is better to scrape the surface whilst keeping the bucket almost flat, at a good distance from the frame of the machine. This way of working will avoid putting too much pressure on the bucket.
- When working in water, the excavator must only be submerged in the water as far as the lower edge of the swing.
- After working in water, make sure the pins for the bucket and adjusting beam are regreased, using the grease gun. Operate the pump until the old grease comes out of the bearings.
- It is strictly forbidden to use the excavator for lifting.
- When the bucket is being emptied, adhering soil can be shaken off the bucket by moving the bucket out to the maximum stroke of the cylinder. If this should not suffice, extend the beam as far as possible, then operate the bucket back and forth.

- When carrying out excavation work, make sure the blade is always lowered to the ground.
Note for the use of bigger and deeper buckets



When using bigger or deeper buckets, make sure the bucket does not hit the machine or the user during swing movements up and down or side to side or when closing the bucket.



3.4-Cleaning (To be done after each use)

Cleaning instructions:

Do not clean the engine compartment or any electrical parts with a large quantity of water. These are located mainly under the workstation. The arm and track base can be cleaned with a large quantity of water without the risk of damaging the mini-excavator.

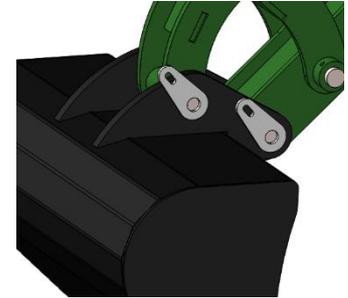
It is preferable to clean the machine with a sponge and water. If the rollers are cleaned with a lot of water, the bearings must be regreased.

3.5-Handling the equipment

The machine accessories can be handled only when the machine is switched off, for safety reasons.

Changing the bucket:

To change the bucket, stay close to the ground to avoid the bucket falling. Remove the coupling pins from the ends of the axles, then the axles, then remove the bucket and replace it with another one.



Fitting an auger or grapple:

Follow the same instruction as for the bucket, then connect to the hydraulics.

Fitting a loading bucket:

⚠ IMPORTANT! ⚠
Using a loading bucket increases the risk of tipping:
A counterweight must be used and the way of operating the machine must be adapted.

The loading bucket is installed at the end of the boom, instead of the adjusting beam (see image).

- Do not use the swing,
- Move the machine with the bucket in the lowest possible position,
- Keep the bucket on the ground when working on a slope,
- Do not exceed the maximum load (*cf Abaquesd*),
- Do not forget to deactivate the "Push Pull" for this change.

To replace another tool already in place on the excavator with the loading bucket
 You should:

- For safety reasons, keep the bucket on the ground,
- Remove the two coupling pins which are keeping the tool in place (casing and cylinder)
- Wiggle the controls to remove the excess oil in the hoses
- Disconnect the hydraulic hoses, making sure you are protected from the oil, or just disconnect the hoses from the "Push Pull".

Remember to order the "Push Pull Bucket" line from Chargeur Plus

The "Push Pull Bucket" line is safer than the original hoses because to connect and disconnect the hoses, you just have to disconnect them and install a cover. Whereas, with the original hoses, you need to protect yourself from the oil coming out of them, and prepare a container under the hoses to collect the oil. With the Push Pull line, there are no oil leakages.

4 CHECKS AND MAINTENANCE WORK

4.1-Action

Conditions:

For safety reasons during maintenance work, lower the bucket and blade to the ground to prevent the equipment from falling when the hydraulic system is activated. Once the machine is stopped, with a 3m safety distance, you should always remove the residual pressure from the system by testing each control lever.

In order to lower the risk with dangerous chemicals during maintenance work, wear gloves, long sleeves and a protective mask and safety goggles.

4.2-Corrective maintenance

When changing any spare parts, hoses, etc. please see the assembly instructions which explain in detail how to assemble all the individual parts of the mini excavator.

Connectors between parts and hoses are tightened in a factory and,

- Fixed in place with threadlock for 12L connectors with a seal (24° cone),
- Made watertight with hydraulic glue (high pressure line) or with Teflon adhesive (low pressure).

Due to the vibrations of the machine, some connections could become loose. After each use, (maintenance chart) you need to check they are correctly tightened in order to avoid any possible leaks, and also make sure you follow the same procedures to make sure all connections are watertight (see a hydraulics supplier).

Reminder: Hydraulic oil constitutes a health hazard.

4.3-Preventive maintenance

Checking levels:



Engine oil:

The engine oil levels can be checked on either side of the combustion engine, by unscrewing and checking the level on the dipstick.

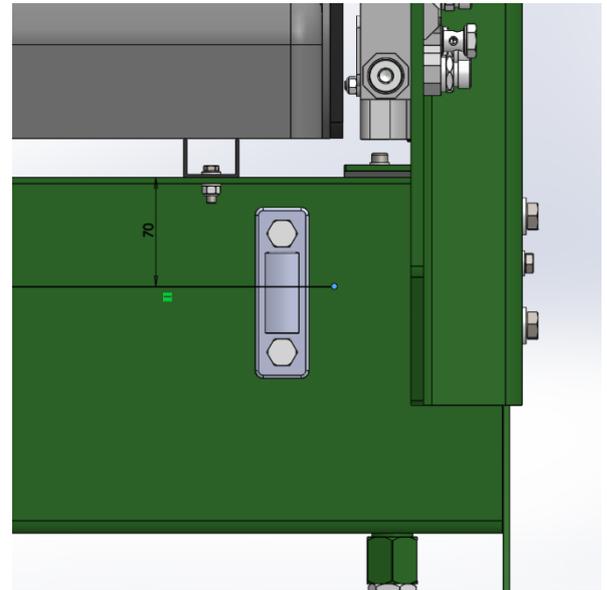


Hydraulic oil:

To check the hydraulic oil level, unscrew the cover of the oil tank, check the gauge in the tank.

Some machines are equipped with a level.

The oil level should be 7 cm below the cover of the tank (cylinder rods retracted – applicable for MP-72/82).



Lubrication points:

All axle fittings have a lubrication point. They must be lubricated at least once a week when the machine is used on a regular basis.





Lubricating the bearing rings for ring gear:

Specific grease made from lithium*:

- Pre-greased during assembly
- Then see the maintenance chart

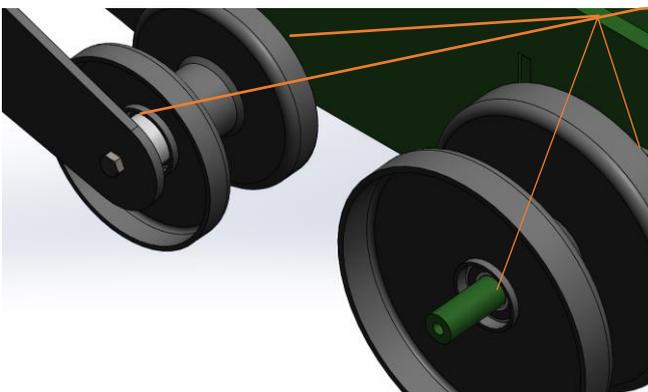
Lubricating the teeth:

Normal grease:

- Pre-greased during assembly
- Then see the maintenance chart

*Recommendation from the manufacturer

Supplier – Grease brand	Grease for bearings	Grease for Gearing
ARAL	Aralub HLP2	Aralub LFZ1
BP	Energrease LS – EP2	Energol WRL/GR 154 GS
CASTROL	Grease LMX	/
ELF	Epexa 2	Cardexa DC1
ESSO	Beacon EP2	Surret Fluid NX
LUBCON	Turmoplex 2EP	Grizzlygrease No.1
MOBIL	Mobilux EP2	Mobiltac 81
SHELL	Calithia EP2	Malléus Fluid D

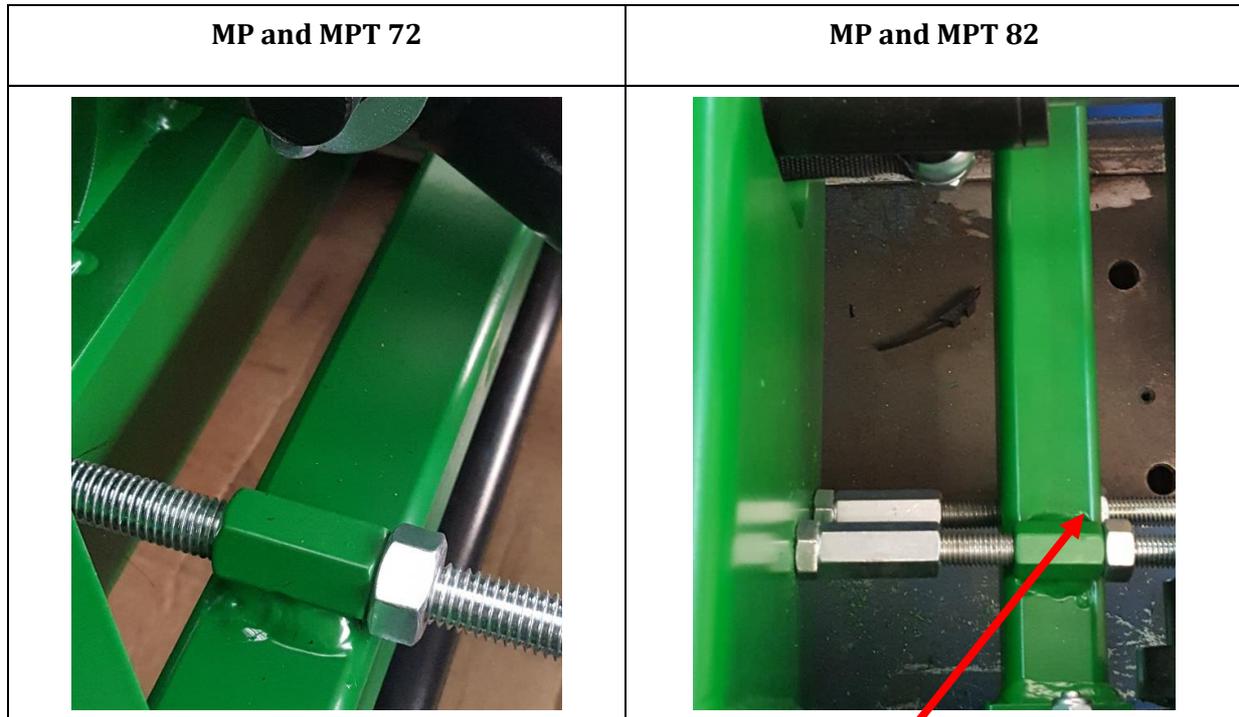


Lubricating Roller casing and axles:

Normal grease:

- Roller bearings are lubricated for life and equipped with seals.
- It is however necessary to fill the casing with grease in order to avoid any humidity.
- Make sure any missing grease is replaced (especially after cleaning, operation in particularly muddy conditions,...) see Maintenance chart

Tightening the tracks

**Warning!****Do not forget to tighten the locknuts**

Scheduled maintenance chart:

Maintenance chart for petrol 9hp or diesel 10hp combustion engine:

Regular maintenance To be carried out every month or after a given number of service hours since the first use of the machine		Every use	The first -5 hours (Kohler) -20 hours (Excalibur) or first month (4)	Every -1 year (Kohler) -6 months (Excalibur) or 100 hours (4)	Every 3 months or 100 hours	Every 6 months or 200 hours	Every year or 300 hours
Operation							
Engine oil	Check the level	x					
	Change		x	x			
Air filter	Check	x					
	Clean				x (1)		
	Replace						x (2)
Sediment cup	Clean				x		
Spark plug	Check / clean				x		
	Change						x
Interference suppressor	Clean				x		
Idle speed	Check / reset						x (3)
Valves	Check / reset						x (3)
Tank and filter	Clean						x (3)
Combustion chamber	Clean	After around 300 hours					
Fuel line	Check	After 2 years (replace if necessary)					

(1) Carry out more regular checks when the machine is used in dusty conditions

(2) Replace only the foam part

(3) These parts must be dealt with by the dealer-repairer, unless you have the right tools

(4) The first of the 2 periods (whether it is in terms of hours or the calendar)

Maintenance and machine verifications chart:

Regular maintenance and checks To be carried out every month or after a given number of service hours since the first use of the machine		Every use	First month or 50 hours	Between 100 and 200 hours	Every 6 months or 200 hours	Every year or 300 hours
Operation						
Hydraulic oil	Check the level	x	x (1)			
	Change					x
Strainer	Check		x (1)			
	Clean		x (1)			
	Replace					x
Tank	Clean		x (1)			x
Pins	Check	x				
Lever pin	Check the wear by removing the pin from its housing	x				
	Replace					x
Screws	Check / Re-tighten	x				
Pin lubrication	To be done	x				
Ring / roller track	To be done			x (3)		
Ring / Teeth	To be done	x (3)				
Rollers	To be done	x (3)				
Tracks	Tightening	x				
	Check	Caution: if 2 or more links are absent, change the track				
Hoses, connectors and textile sheath	Check / Re-tighten	x				x (2)
	Check	In the case of a leak, change the hose immediately. If the sheath is damaged, replace it.				

- Cleaning the machine

- (1) Empty the tank, if there isn't too much deposit, filter the oil and use it again.
- (2) Change the hoses if the wires are visible and rusty.
- (3) For each cleaning and after a long period without being operated.

* Only carry out maintenance for Kohler engines with the approved maintenance kit.

-5 TRANSPORT AND STORAGE

5.1-Loading and unloading

On a truck:

It is recommended to reverse the machine onto the truck, and to use the arm for assistance, and the bucket to stabilise the excavator as it is being transported, to avoid any accidents. The lower the slope, the easier it will be to put the excavator onto the truck.

Using a pallet truck:

For transporting on a pallet truck, it is essential to strap down the machine and the arm so that nothing moves during transport.

Weight of the machines:

Machine	Empty weight: (Kg)
MP-72-XXXX-X	400
MPT-72-XXXX-X	440
MP-82-XXXX-X	750
MPT-82-XXXX-X	800

5.2-Storage

Durability of the machine:

The following is advised:

- Keep the machine in a sheltered place,
- Store the machine fully lubricated,
- Start the engine regularly so that it does not become blocked.

Safety:

To avoid the arm or blade falling unexpectedly, it is essential to place the bucket and blade on the ground, so that just in case the hydraulic controls are activated, they will not cause any sudden movements.

5.3-Disposal

The machine must only be disposed of by technicians who have been trained and have the appropriate equipment. Components must be separated so that certain raw materials can be reused.

All contaminated components (oil, fuel, lubricants) or polluting components (battery) must be disposed of accordingly by approved bodies.

WARNING!

It is strictly forbidden to reuse parts of the machine for functions other than those originally intended in this manual.

INFORMATION!

Chargeur Plus declines any responsibility for damages caused by non-respect of the recommendations given in this manual.