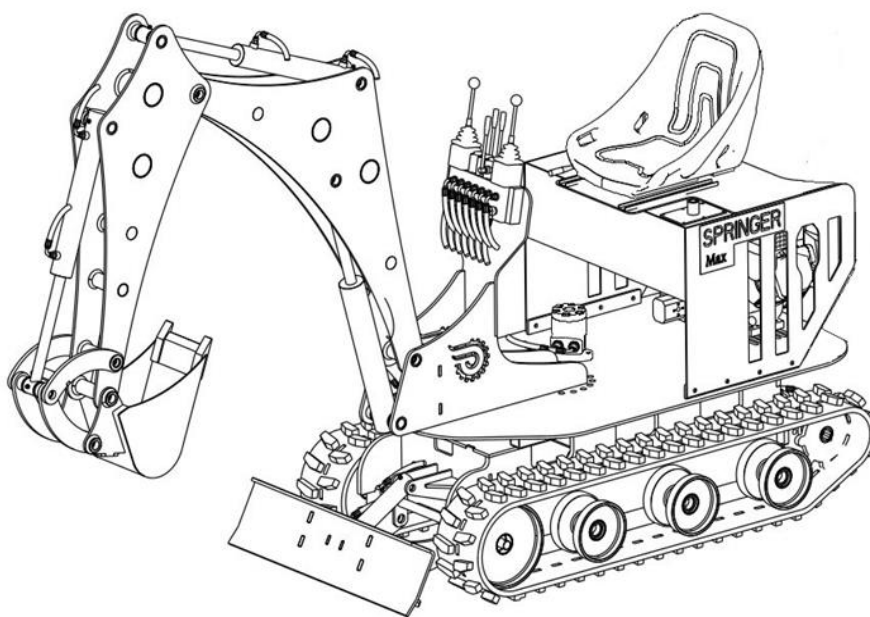




# Mini digger

## SpringerMAX



INSTRUCTION

**Contact:**

**P.H.U. ELGO-PLUS**

**ul. Przemysłowa 1**

**87-880 Brześć Kujawski POLAND**

**Tel.: +48 602 841 094**

**[www.elgoplus.pl](http://www.elgoplus.pl)**


**[e-mail: kontakt@elgoplus.pl](mailto:kontakt@elgoplus.pl)**

## **1. INTRODUCTION**

This instruction contains basic informations of usage and terms of use mini digger **SpringerMAX**.

Proper maintenance and the correct way to use the machine condition the safe and reliable operation. The procedures described in this manual are the optimal methods of working with the machine and perform maintenance. In order to reduce the likelihood of an accident and prevention of incidents as a result of which the machine could be damaged or cause to make it dangerous to be thoroughly familiar with the content of warnings and comments given in the instructions for the machinery.

Operators should carefully read all of this manual and observe all its recommendations.




	<p><b>Warning!</b></p> <p>Do not operate the machine, do not start work and do not perform any of the actions before reading the instructions for the machine.</p>
---	--

Failure to follow these recommendations could be the basis for the withdrawal of the manufacturer's warranty for the product.

This manual must be readily available and always kept near the mini digger!

ELGO-PLUS reserves the right to change specifications, construction, instruction, and extension or modernization of the product without prior notice. ELGO-PLUS Company is not obligated to make such changes to previously manufactured machines.

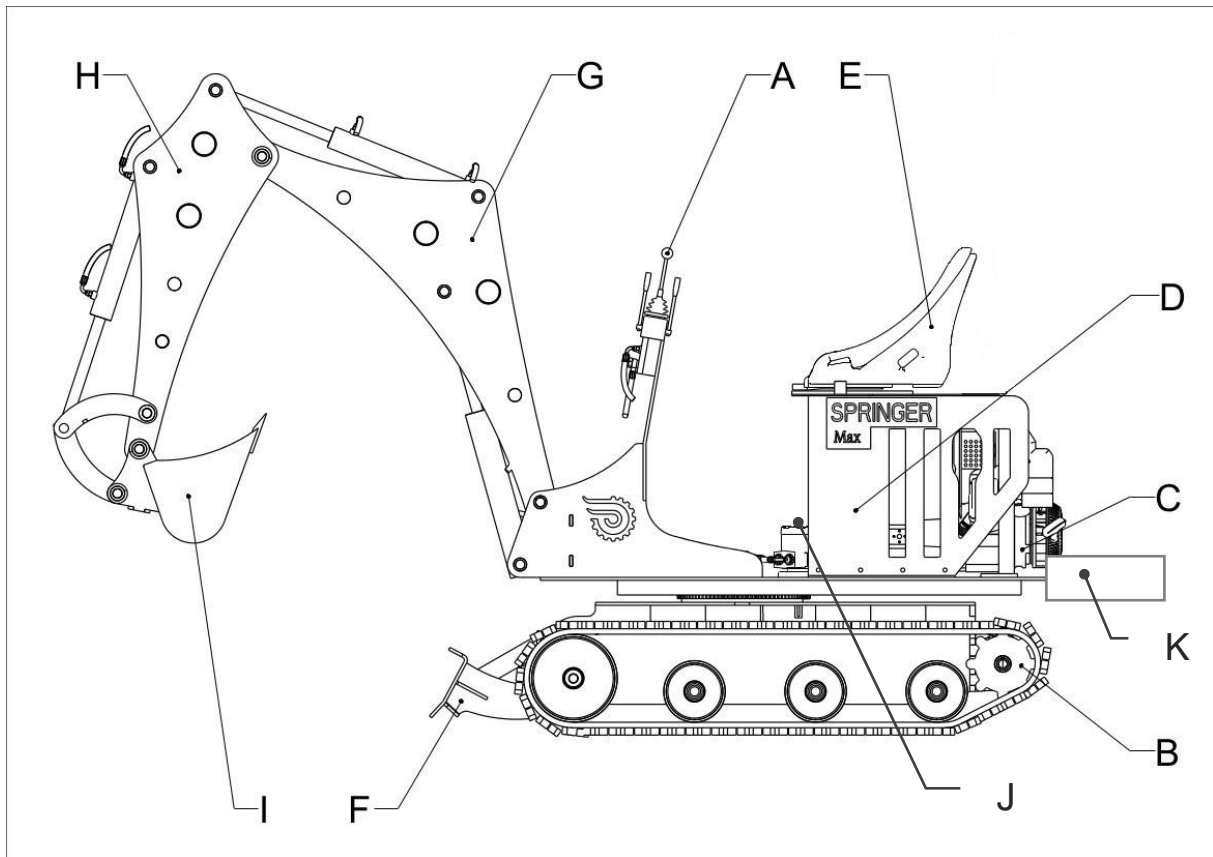
### Description of signs used in instruction:

	Warns that failure to follow instructions <b>may</b> result in serious injury, possibly death and/or destruction of equipment.
	Warns that failure to follow instructions <b>will</b> result in serious injury and / or equipment damage.
	Symbol draws attention to important informations.

## 2. MACHINE FEATURES

### 2.1. General description

The machine is designed for earthworks carried out in normal daylight conditions. If the machine is to be used for other purposes or have to work in a potentially hazardous environment, then follow the special safety regulations, and the machine itself should be equipped according to the working conditions. For further information, please contact the manufacturer.



PIC.2.1 General construction

A	Steering levers
B	Rubber track chassis
C	Engine
D	Rotatable body
E	Seat
F	Support
G	Arm
H	Jib (Boom)
I	Bucket – changable equipment
J	Hydraulic pump
K	Overweight (removable equipment)

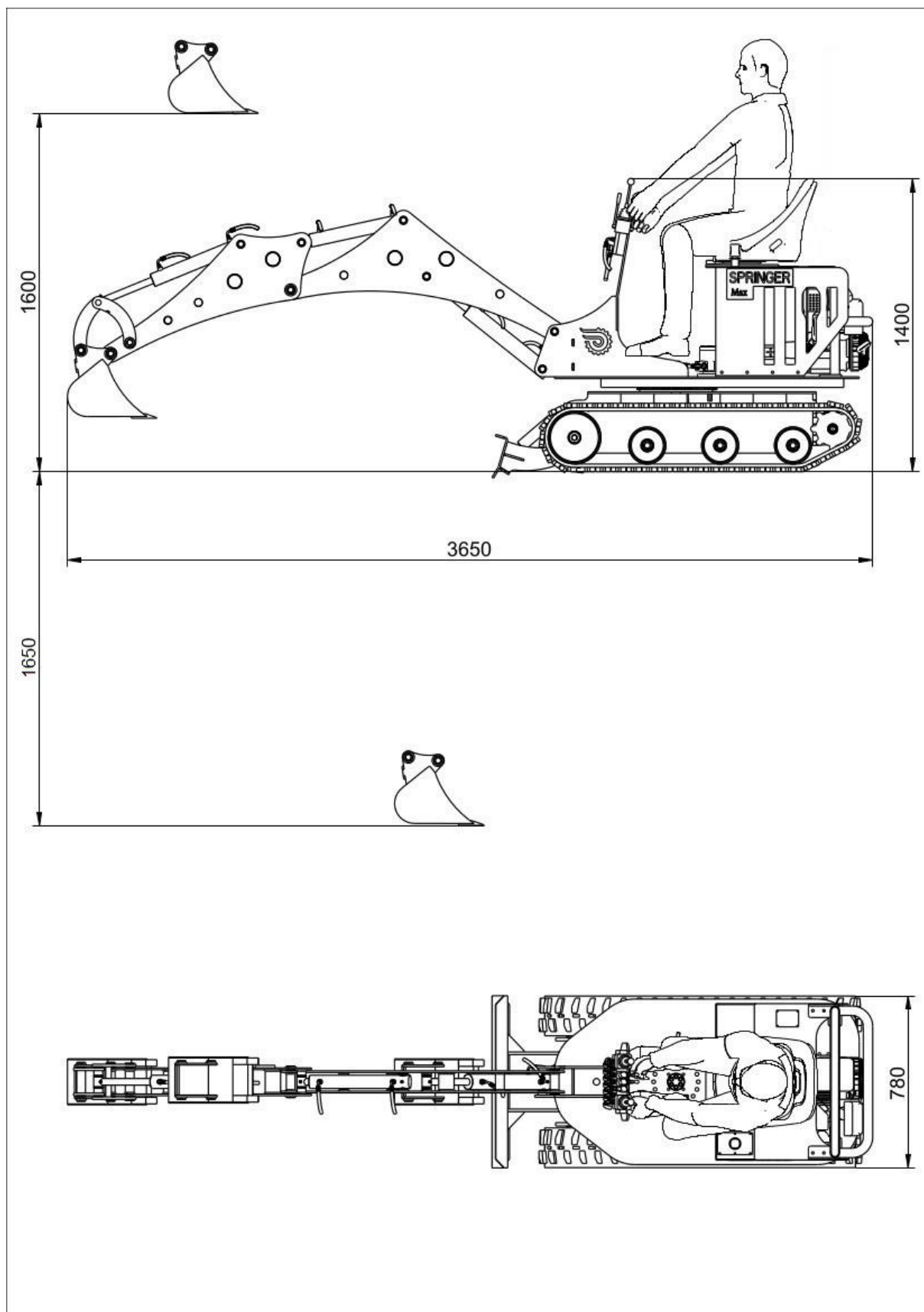
## 2.2. Technical data

Engine	Gasoline Briggs & Stratton Vanguard 10 HP 19L2
Engine power	10 HP
Battery	12 V, 24 Ah with electrolyte
Hydraulic pump	CASAPPA 6,61 cm <sup>3</sup> /rev
Hydraulic tank capacity	21 L
Weigh	680 kg (without counterweight)
Rotation	360°
Maximum digging depth	1,65 m
Noise	No more than 85 dB(A)



Important:

Detailed information about drive unit located in the Briggs&Stratton engine manual.




PIC.2.MACHINES DIMENSIONS

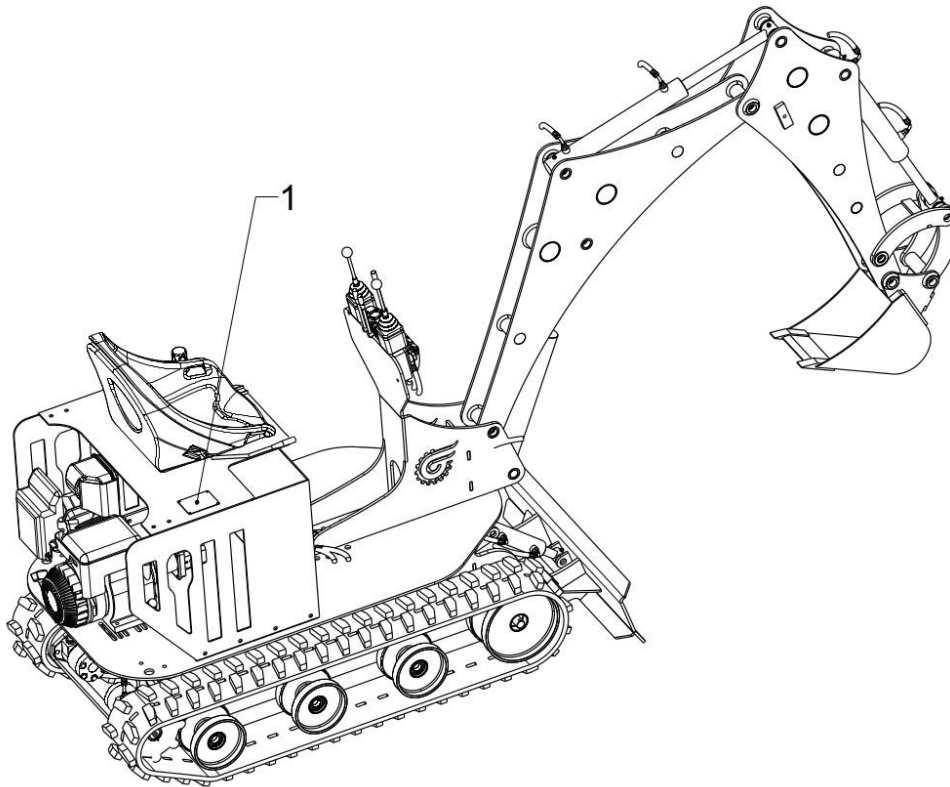
### 2.3. Equipment

	Grading bucket (70 cm wide)
	Bucket (20cm wide)
	Bucket (30cm wide)
	Teeth ripper tool

### 2.4. Removable equipment

	Overweight (110 kg)
---	---------------------

## 2.5. Name plate




PIC. 2.3 NAME PLATE

	<p><b>1.Name plate</b></p> <p>Contains information such as:</p> <ul style="list-style-type: none"><li>- CE marking</li><li>- The name and address of the manufacturer</li><li>- Machines model</li><li>- Serial number</li><li>- Year of production</li><li>- Weight of machine</li></ul>
--	---

### 3. SAFETY INSTRUCTIONS

The mini diggers user duties are knowledge of and compliance with applicable laws, therefore, included safety instructions are only recommendations.

- The operator must be healthy and be at least 18 years of age.
- Mini digger must be maintained in good condition.
- Inspection and repairs can be carried out only after the machine is turned off
- It is forbidden to make unauthorized modifications to the machine without the manufacturer's consent
- It is forbidden to work the machine in explosive atmospheres and confined spaces without adequate ventilation
- Mini digger is not intended for public roads, it can only moves beyond them.
- It is forbidden to smoking and approaching other sources of ignition while refueling.
- The operator should exercise extreme caution when working, all people nearby mini digger should still be within his sight.
- Do not fill fuel other than what is recommended for the engine. Detailed recommendations are contained in the engine manual.
- Mini digger can be operated at the appropriate level of engine and hydraulic oil.
- Mini digger is designed to work in the daytime, in the case of work in conditions of limited visibility, it should be provided appropriate lighting equipment to the work area on Your own.
- It is forbidden to use the machine in clothing unsuitable for this or another that can cause danger (eg. long dangling pieces of clothing).
- It is forbidden to use the machine if the operator contamination with substances such as oil, grease, etc. that may cause a slip hazard.
- 

	<p>Warning:</p> <p>Before operating the machine, the operator of mini digger must have sufficient knowledge and read the instructions. Unqualified user can cause serious injury or even death.</p>
---	---

The contents of this chapter contains instructions and precautions that must be followed to ensure proper and safe operation and maintenance.

These rules do not exempt the operator from the obligation to comply with the law or other applicable rules regarding safety and health.


#### Users duties

The user is obliged to pay attention to the specific requirements and hazards during work as well as personal safety. This is necessary to prevent serious injury or damage, and even deaths

#### Responsibility for other

It should work with the machine so as to avoid the risk of accidents and injuries. You have the right and obligation to prevent this. No one is allowed to enter the working area of the machine during its operation without prior notice to the operator. If someone must enter into the working area of the machine to perform a specific job, that person must exercise extreme caution and without the need not to move from the back of the machine or remain in a dangerous area

**If someone is in the area of machine operation the operator must keep extra care. The operator can operate the machine only when you see this person, or if this person comprehensible signals to the operator, where it is located**


	<p>Warning:</p> <p>Do not sit or stand on the machine on site suitable for this operator which would prevent safe operation of the machine.</p>
---	---


### **Damages**


User duty is to report any damage or wear that could affect safety. During the inspection, maintenance and repairs, on-site operator allowed to stay only person with the required knowledge of operating the machine and knowledge of controls.

### **Safety information when using and operating the battery**

While use battery, observe the safety instructions and relevant national regulations. Before carrying out any battery operation (including battery charging and starter battery use), you should familiarize yourself with safe methods for working with batteries with an electrolyte.

	<p>Warning:</p> <p>Batteries may emit explosive gases. Do not smoke, set fire or use high energy sources (welding machines, etc.) in the vicinity of batteries.</p>
---	---

	<p>Warning:</p> <p>Do not connect the discharged battery with the fully charged battery. A current shock may cause the battery to explode.</p>
---	--

	<p>Warning:</p> <p>Make sure that metal objects (such as tools, jewelery, etc.) do not touch the battery terminals. This poses a health risk and a risk of fire. Always place the covers on the place of the battery terminals and the cable clamps.</p>
---	--



Warning:

When starting the engine from the battery of the other machine, do not allow the machine to touch. It could damage the electrical system of one of the machines.



Warning:

Do not start the machine with the starter battery, in which:

- the battery freezes,
  - The battery status indicator is in yellow color or bright,
  - the battery's electrolyte level is below the top of the battery panel.
- This can lead to personal injury.



Warning:





Do not allow the battery or the surrounding area to become contaminated with fuel or oil. This can create fire hazards.



Warning:

Before cleaning the machine, all electrical components must be protected against water, and after drying, dry them thoroughly. Failure to do so may result in accident or damage to the machine.

## Description of the marks on the machine

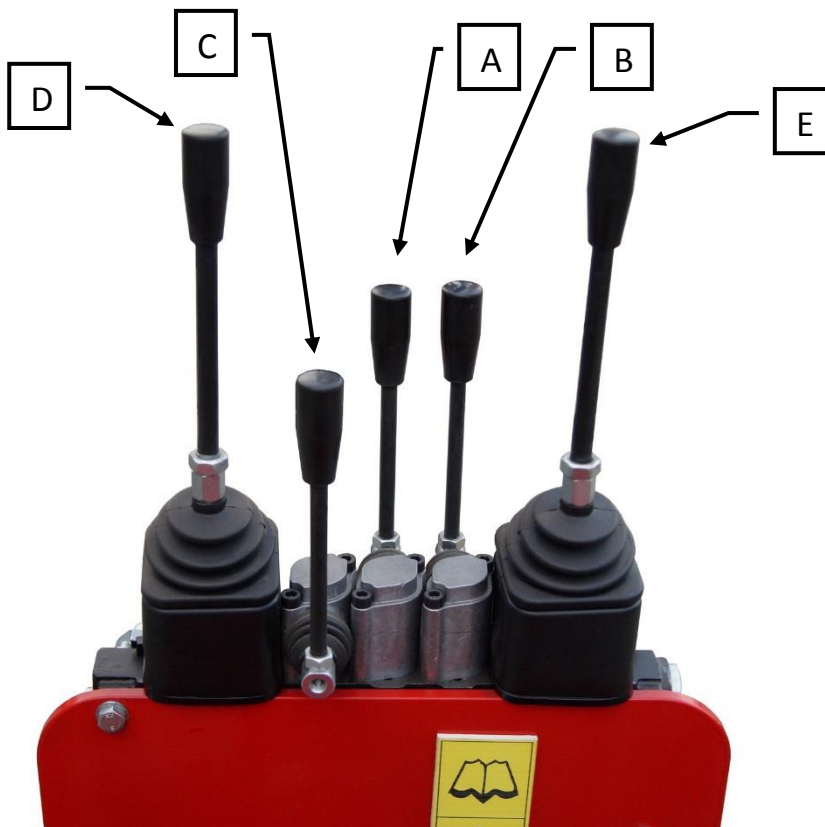
	<p>Warns that before using, the operator must read the instruction manual.</p>
	<p>Warns against hot surfaces nearby engine and hydraulic pump.</p>
	<p>Symbol draws attention to take special care in time staying close to working mini digger.</p>
	<p>Symbol informs about the location where the hydraulic oil drain valve is located.</p>

#### 4. STEERING ELEMENTS



Warning:


Do not start the mini digger before reading the exact location and function of all controls




PIC.4.1 STEERING ELEMENTS

A	Left track steering lever
B	Right track steering lever
C	Support position steering lever
D	Arm position and rotation steering lever
E	Jib position and bucket work steering lever

#### Left track steering ( A, Pic.4.1)

	<p>1 - forward – in order to move track forward, push steering lever forward (<b>A</b>, Pic.4.1)</p> <p>N - neutral – track stops (the lever returns to this position automatically)</p> <p>2 - backward – in order to move track backwards push steering lever backwards (<b>A</b>, Pic.4.1)</p>
---	---

#### Right track steering ( B, Rys.4.1)

	<p>1 - forward – in order to move track forward, push steering lever forward (<b>B</b>, Pic.4.1)</p> <p>N - neutral – track stops (the lever returns to this position automatically)</p> <p>2 - backward – in order to move track backwards push steering lever backwards (<b>B</b>, Pic.4.1)</p>
--	---

#### Moving forward

Push forward both steering levers (A and B, Pic.4.1), machine will go forward.

#### Moving backward

Pull back both steering levers (A and B, Pic.4.1), machine will go backward.

#### Turning left

Push forward the right steering lever (B, Pic.4.1), the right track starts to move forward, the machine will go forward turning left.

Or:


Pull back left steering lever (A, Pic.4.1) the left track starts to move backward, the machine will go back turning to the left.

#### Turning right


Push forward the left steering lever (A, Pic.4.1), the left track starts to move forward, the machine will go forward turning right.

Or:

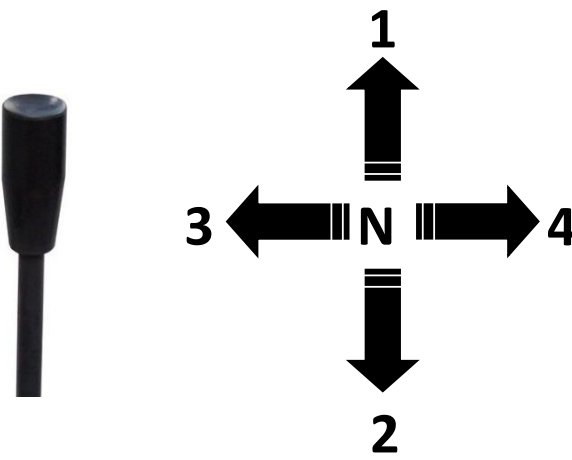
Pull back right steering lever (B, Pic.4.1) the right track starts to move backwards, the machine will go back turning to the right.

	<p>Caution!</p> <p>It is forbidden turning in opposite movement of the two tracks, doing so may cause damage to the mini digger.</p>
---	--

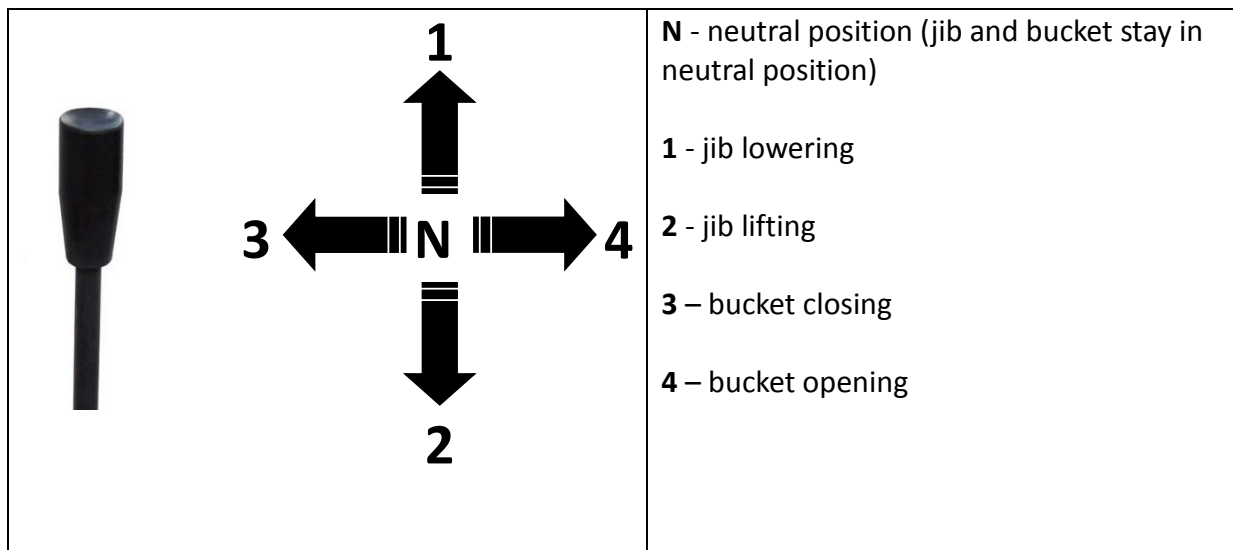
#### Support position steering ( C, Pic.4.1)

	<p>1 – support lowering</p> <p><b>N</b> – neutral position – support stops (the lever returns to that position automatically)</p> <p>2 – support lifting</p>
---	--

#### Arm position steering ( D, Pic.4.1)


	<p><b>N</b> - neutral position (arm stay in neutral position)</p> <p>1 – arm lifting</p> <p>2 – arm lowering</p> <p>3 – turning left</p> <p>4 – turning right</p>
---	---

### Jib position steering ( E, Pic.4.1)



## 5. USAGE

### 5.1. Before working

	<p>Warning:</p> <p>Do not adapting these rules may result an accident, serious injury or death.</p>
---	---

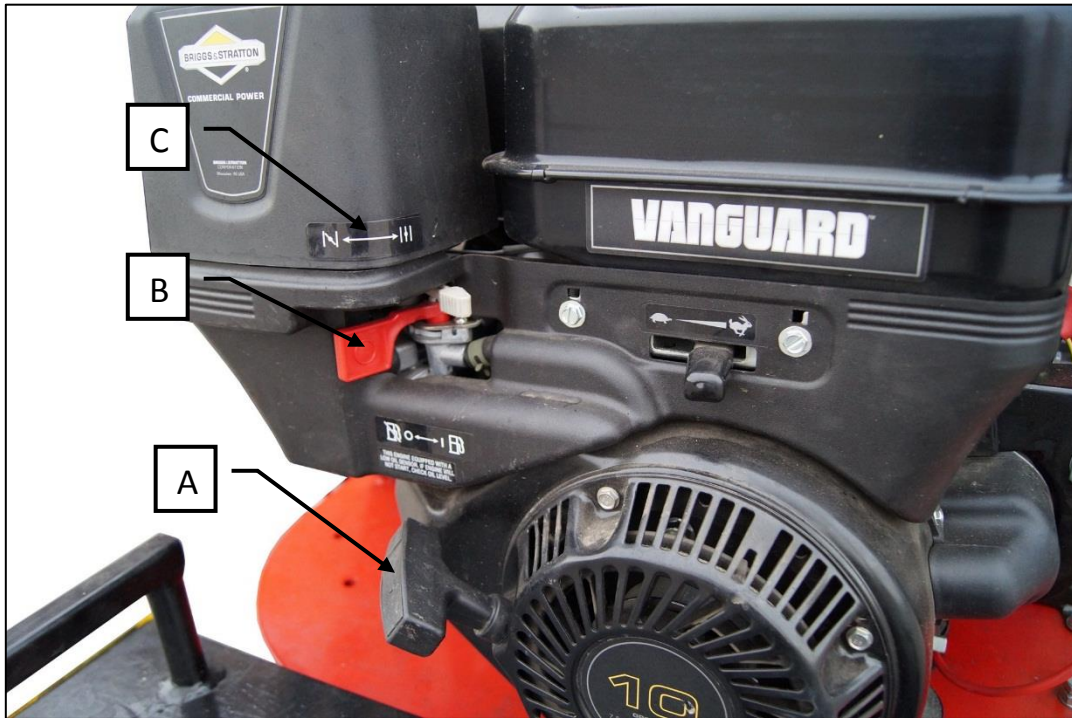
- Before starting the mini digger familiar with the contents of this manual.
- Defects and damages that affect safety must be removed before use.
- Do not operate the machine while under the influence of alcohol, drugs or other intoxicants.
- Dress in appropriate clothing that allows for safe operation.
- To increase the safety of the head is recommended to use a protective helmet.
- Adjust the seat.
- Do not overload the machine. Overloading adversely affect safety.
- Before starting the mini see if there is someone in her immediate vicinity.
- Check for leaks.
- Check for damaged or loose parts that could cause damage.
- Check if there is fuel in the tank.
- Check the hydraulic oil tank.
- Check engine oil level.
- Before driving check that the machine is not near other people.
- When it is very cold do not direct the machine to work hard after starting.
- Check battery mounting.
- Check the battery cables mounting.
- Check the fuel tank for leaks or cracks.

## 5.2 Starting and shutting down the machine

Mini digger can be started by pulling a starting rope or by a starter with key located next to the engine.

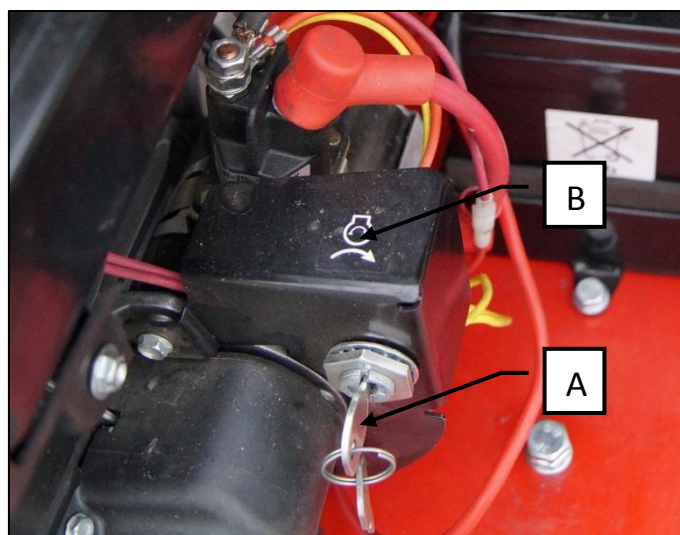
Before starting, unlock the fuel / ignition lever.

To turn off the machine lock the fuel / ignition lever.



RYS.5.1 SILNIK

A	Rope pulling holder
B	Fuel/ignitation lever
C	Marking the position of the lever



PIC.5.2 KEY STARTER

A	Key
B	Marking of the direction of starting



Important:

For further information on the power unit, refer to the Briggs&Stratton engine manual.

## 5.2. Driving

When driving on flat ground, set back attachments and lift it off the ground to avoid knocked out of the terrain elements.

When driving on uneven terrain should move the machine so as not tilted to one side more than 10°.

Riding uphill

If the tracks are sliding on the slope, push the bucket into the ground and pull the arm backwards to facilitate the uphill drive.

Riding downhill

In case of downhill riding, drive the mini digger as slow as possible.



Warning:


Do not change driving direction rapidly. Especially, in case of changing direction in place, stop the machine.

### 5.3. Stopping

To park the machine choose flat terrain

1. Set steering levers in neutral position
2. Lower the bucket to the ground, keeping the bottom of the bucket parallel to the ground

### 5.4. Parking

	<p>Important</p> <p>To park the machine choose flat terrain. If you can not avoid parking on a slope, under each of the tracks to put a block of wood and push the bucket teeth into the ground.</p>
---	--

Pay attention to weather conditions and take necessary steps to ensure that the machine is not frozen to the ground, plunged into it, or suffered other consequences.

#### Long-term parking

Follow the instructions for parking and in addition:

- check the machine for leaks and if there is no damage to the working system and tracks.
- remove from the track accumulated soil
- secure the machine against the corrosion and thoroughly lubricate
- fill the fuel tank and oil to the maximum
- shut off the fuel supply to the engine, according to the recommendations in the engine manual

### 5.5. Bucket working

Mini digger is a multi-purpose machine that can be equipped with a variety of specialized work equipment in order to perform many types of work. Below are described some operations

#### 5.5.1. Digging ditches


Install a appropriate bucket for this kind of work. To work effectively set tracks in accordance with the direction of the ditch.


In the case of a broad ditches first dig on both sides of the trench, and then select the material from the central area.


.

#### 5.5.2. Loading works

In order to increase the effectiveness of the trolley set it in order to obtain a small angle of the mini diggers arm and good visibility for the operator.

	<p>Caution:</p> <ol style="list-style-type: none"> <li>1. Do not use the work of inertia driving machine.</li> <li>2. Do not dig, do not push the bucket teeth into the ground using the inertia of the driving machine. This can overload the back of the machine and damage the drive track.</li> <li>3. Do not pull out completely the hydraulic cylinder piston rod. This results in a shortening of the life of the machine. Leaving to work as much as possible backlash.</li> <li>4. Do not use the work of inertia of the falling bucket.</li> <li>5. Do not dig by dropping the boom or bucket to use as a pick. Digging combined with stroke or continuous hitting can damage the operating system.</li> <li>6. Do not perform lifting.</li> </ol>
---	--

	<p>Caution!</p> <p>During work, always leave the support to the ground, so that the machine received appropriate support.</p>
---	---

	<p>Warning:</p> <p>Pay attention for differences in machines stability, depending on the angle of rotation of the body.</p>
---	---

## 5.6. Transport

While transporting the machine, follow the existing rules on weight, width, height, length and anchoring loads.

Remove grease, oil, mud, ice, etc., from ramps or platform surface to prevent slipping off the machine.

## 5.7. Loading

1. Turn on brakes of transporting vehicle
2. Put blocks under the wheels of transporting vehicle
3. Secure the ramps
  - check the strength, width, length and thickness of the plank ramps is sufficiently safe for loading,
  - pay attention to the angle of ramps was 15 ° or less.
4. Check that the left and right ramp are the same height.
5. Ride slowly to the ramps.



Warning:

When the machine is on the platform do not pull any levers except the drive lever

6. Load the machine on a vehicle properly and ensure its secured
7. Turn off the engine.
8. After loading, put blocks under tracks and attached machine using transport belts

### 5.8. Equipment changing



Warning:

When striking the pins, there can break the metal debris and injured eyes

Always wear goggles, helmet and gloves.

1. Place the machine on a flat, sturdy and level ground.
2. Lower the light fixture to touch the ground.
3. Stop the engine.
4. Remove the bolts securing the mounting equipment to the jib and the jib cylinder.
5. Remove the bolts and remove the equipment.



Important:

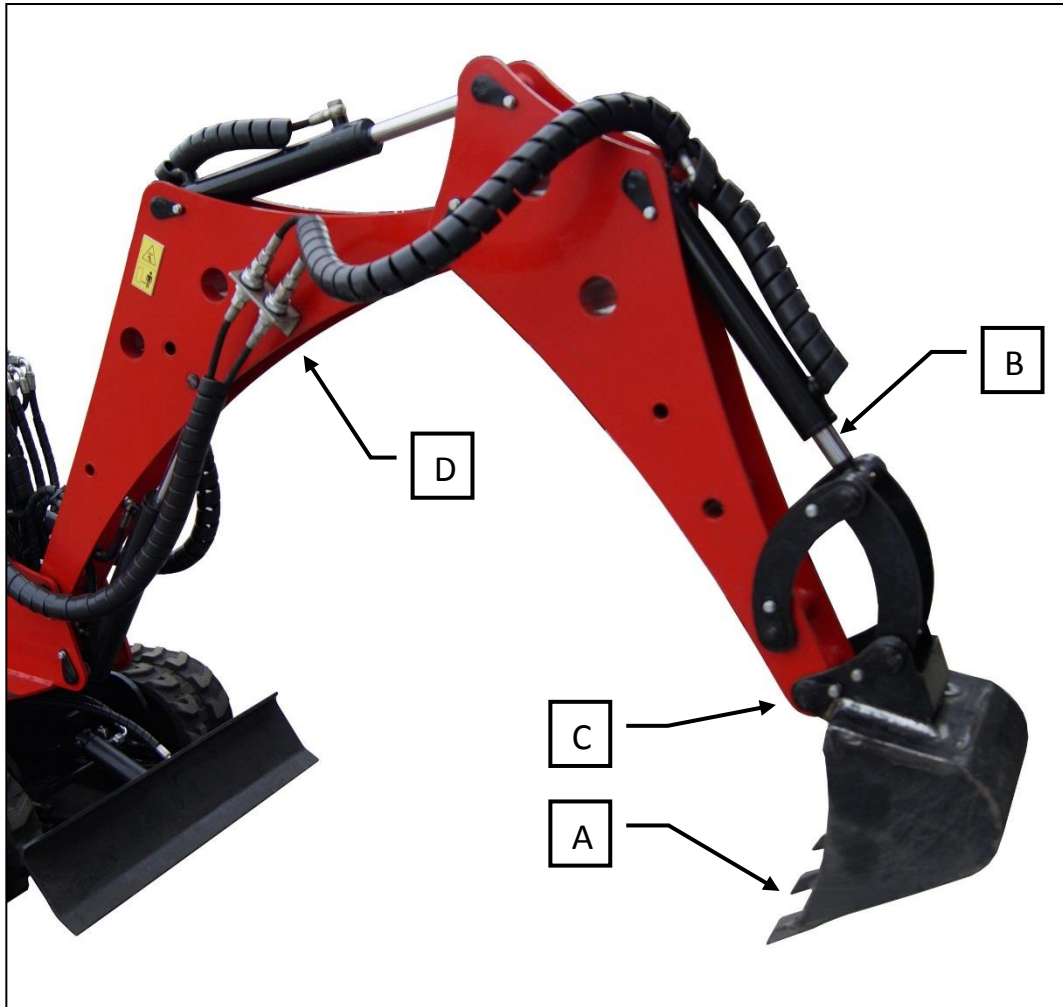
Keep pins clean.



Warning:

Do not put your fingers into the holes in order to verify their concentricity, it can lead to serious accident.


6. Set the jib that the mounting holes are concentrically positioned fixture with jib holes / arm and the hydraulic cylinder.
7. Lubricate the inner surface
8. Put pins
9. Tighten the screw bolts.




RYS.5.2 BUCKET CHANGING

A	Bucket – removable equipment
B	Hydraulic cylinder
C	Pins with protection
D	Hydraulic quick connect nipple

## 6. SERVICE


	<p>Warning:</p> <p>A person who does not apply to the safety instructions and who ignore included warnings, must be sure that its approach work is safe.</p>
---	--

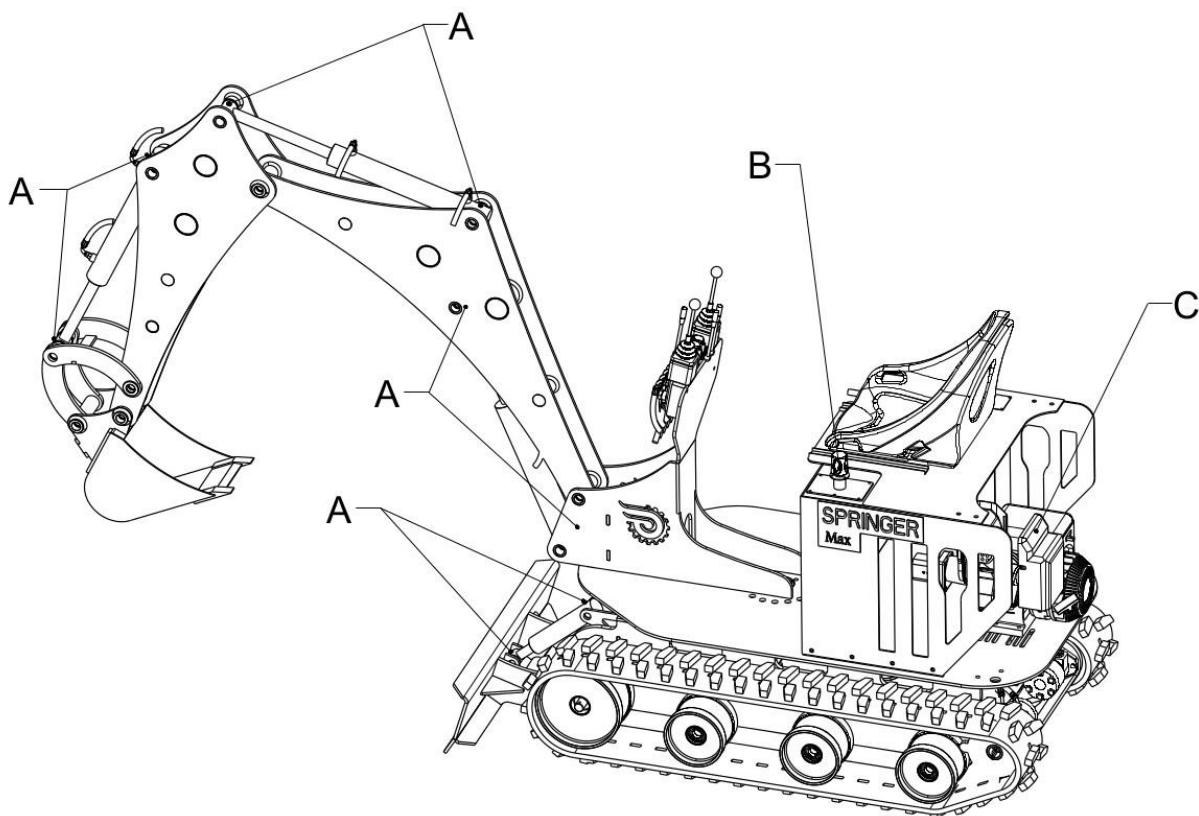
### 6.1. Service position

	<p>Warning:</p> <p>If you need to start working on the machine before it cools, watch for hot liquids and bands machine, which can cause burns.</p>
---	---

**Before working by the machine:**

1. Set the machine on a flat, sturdy and level ground.
2. Working system should rest on the ground.
3. Allow machine to cool

	<p>Warning:</p> <p>Improperly executed service may be dangerous. In order to carry out the service in the right way, make sure that you have the relevant knowledge, correct information and the correct equipment.</p> <p>When draining / emptying avoid spilling oil. Oil spilled on the ground will harm the environment and can cause fire.</p> <p>To work with the machine not to assume too loose clothing or jewelry that could get into the machine and cause damage.</p> <p>Whenever required by your work wear personal protective equipment.</p>
---	---

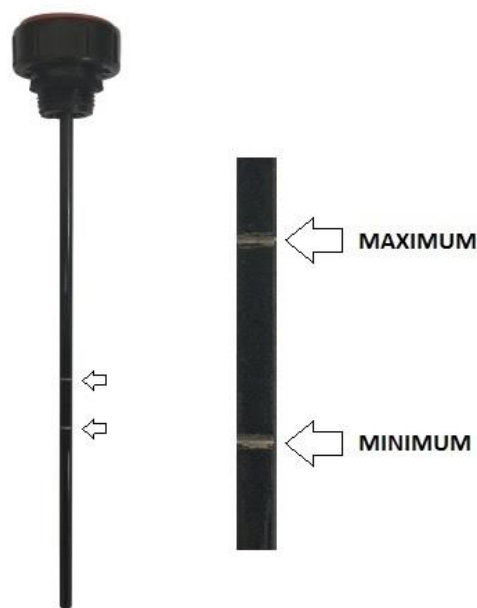
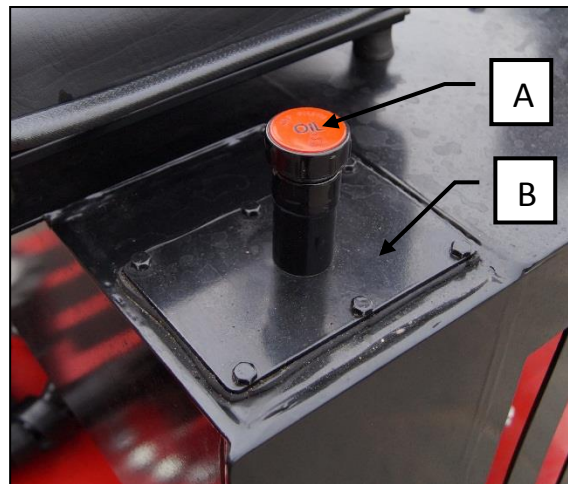


PIC.6.1 POINTS OF LUBRICATION AND OIL REPLENISHMENT

A	Hydraulic cylinders and pins lubrication
B	Hydraulic oil replenishment
C	Replenishment and changing of engine oil

## 6.2. Hydraulic oil replenishment

Take care of proper hydraulic oil level. The tank is located under the driver's seat and has got 21 liters of hydraulic oil.



PIC.6.2 HYDRAULIC OIL REPLENISHMENT

A	Hydraulic oil filler cap
B	Oil tank cap

The hydraulic oil level is checked with a bayonet placed under the oil fill cap

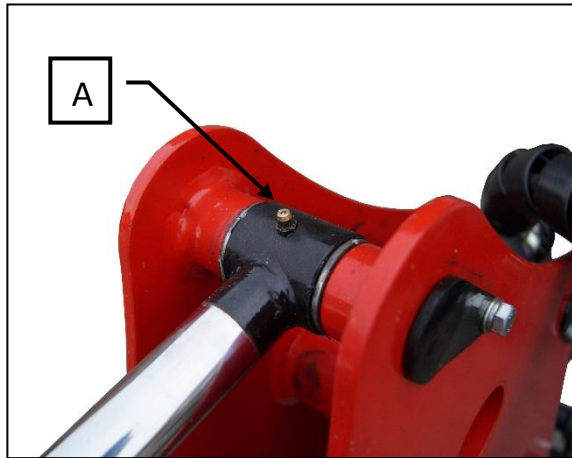
### 6.3. Hydraulic oil changing

It is recommended that the oil and oil filter were changed once a year, assuming that the machine is working 8 hours a day. In justified cases, the exchange should be carried out frequently. The oil filter is located under the oil tank cap B (Pic.6.2).

Recommended hydraulic oil is **AGIP ARNICA 46** or other with the same parameters (**norm ISO L-HV and DIN 51524 t.3 HVLP**).

### 6.4. Hydraulic cylinders and pins lubrication

All points where parts are in move must be properly lubricated. Below there is exemplary lubrication point, All these points are equipped with grease nipples. It is required to lubricate every time before working.

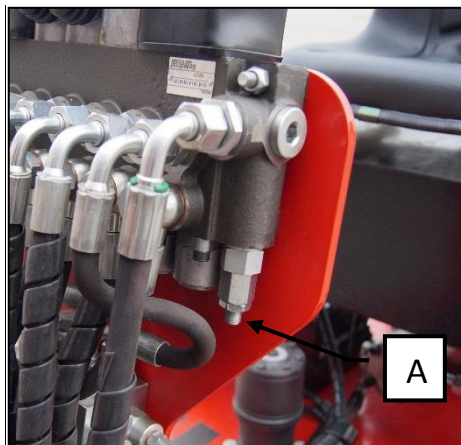


PIC.6.4 POINT OF LUBRICATION

A	Grease nipple
---	---------------

#### 6.5. Hydraulic pressure control

	<p>Warning:</p> <p>Working pressure of the hydraulic system is factory-set to 160 atm. Regulatory made only in justified cases. Changing the operating pressure is not recommended for unexperienced users..</p>
--	--



PIC.6.5 HYDRAULIC PRESSURE CONTROL

A	Hydraulic pressure controler
---	------------------------------

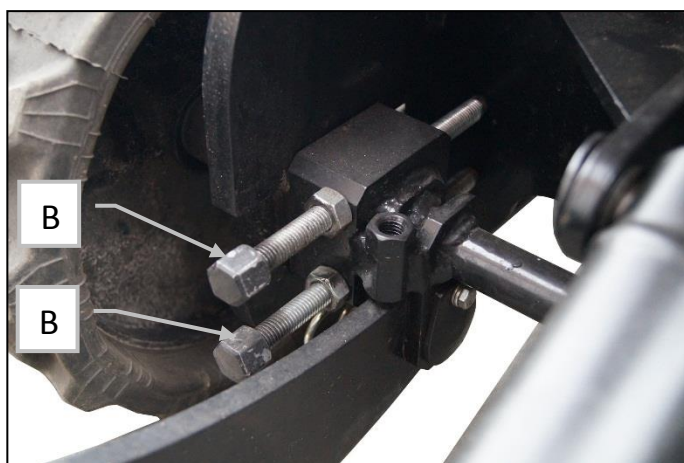
#### 6.6. Tracks tension regulation



**Warning:**

Do not use the mini digger when her tracks are too much or too little strained. Doing so may destroy them. Tracks tension should be checked every time before working

In case of too low tracks tension it is necessary to adjust it by using the adjustment screws on both sides of the mini digger. To tension rubber tracks, first loosen support screws on sides of bracket (A), than regulate the tension by regulation screws (B).

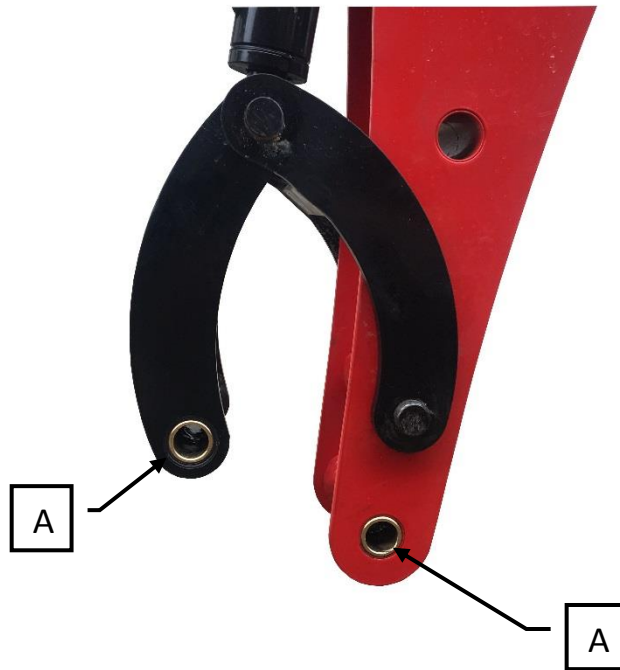


RYS.6.6 TRACKS TENSION REGULATION

A	Bracket screws
B	Regulation screws

### 6.7. Brass pins changing

In the case of use of the brass pins, replace them with new ones. Knock out the pins out of the nest and embed new.



PIC.6.7 BRASS PINS

A	Brass pins
---	------------

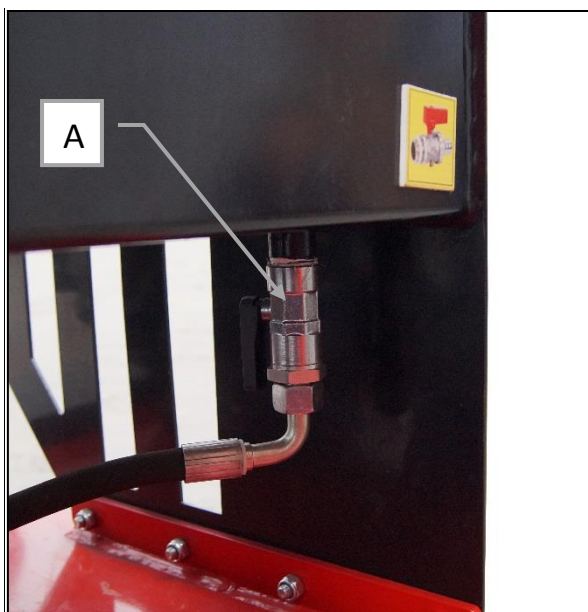


**Warning:**

When knockig out the brass pins, there can break the metal debris and injured eyes.  
Always wear goggles, helmet and gloves


### 6.8. Hydraulic oli tank valve

The hydraulic oil tank is equipped with shut-off valve. The valve is used when operating the hydraulic pump and preventing oil spills after disconnecting the hydraulic hose.




PIC.6.8 TANK VALVE

A	Hydraulic oil tank valve
---	--------------------------

	<p>Warning :</p> <p>During operation, the valve should always be in the open position, otherwise it may cause damage to the hydraulic pump. The valve should be closed only during the work-related hydraulic pump and while transporting the machine</p>
---	---

## 6.9. Battery changing

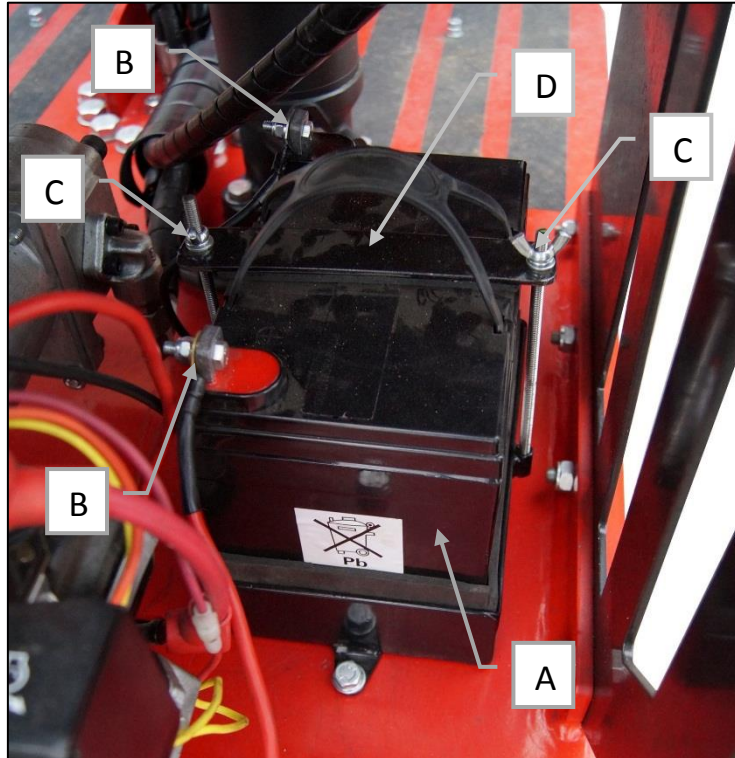
	<p>Warning:</p> <p>Batteries contains substances hazardous to health and the environment. For this reason, retractable batteries must be disposed of in accordance with applicable regulations.</p>
---	---

Battery is mounted next to gasoline engine, under the operators seat.

The replacement should begin with the disconnection of the black (-) mass lead. Then disconnect the positive (+) cable in red.

Loosen the wing screws and remove the retaining plate. After this, you can remove the used battery.

Install the new battery in reverse order, paying particular attention to its secure mounting.



PIC.6.9 BATTERY

A	Battery
B	Cables
C	Wing screws
D	Retaining plate

#### 6.10. Machine maintenance table


Regular maintenance		Each time	After first 5 hours of using	3 months or 50 hours	6 months or 100 hours	12 months or 300 hours
Hydraulic oil	Check level	x	X	X(1)	X	
	Change					x
Engine oil	Check level	x				
	Change		x	x		
Pins	Check		x	x		
Screws and rubber tracks	Check/tighten	x				
Lubrication	Perform	x(or 10h)				
Electric cables	Check	x				
	Change	Replace in case of holes in isolations or brokes				
Hydraulic hoses	Check	x				
	Change	Replace in case of leaks or braid is visible				

**X(1)** Empty the tank, when the oil filter is not heavily soiled, you can use it again


Mini digger is filled up with hydraulic oil **AGIP ARNICA 46**.

To next fill up it is recommended the same oil or other with the same parameters:

**ISO L-HV and DIN 51524 t.3 HVLP**

	<p>Important:</p> <p>For detailed information on fuel quality, lubrication instructions and servicing of the power unit, refer to the Briggs&amp;Stratton engine manual.</p>
---	--

#### 6.11. Pressure throttling

	<p>Warning:</p> <p>Throttling the pressure in the hydraulic system is set at the factory. Adjustment should be made only in justified cases.</p>
---	--

The pressure in the hydraulic system can be throttled by a throttle valve (at hydraulic distributor).



PIC.6.9 THROTTLING VALVE

A	Throttling valve
1	Loosen the lock nut
2	To throttle the pressure, turn the valve to the right

## 7. SPARE PARTS

When ordering spare parts, always state the information on the name plate of the machine or enter the symbol of the part.



## WARRANTY CARD

1. Warranty for smooth operation of the device is granted for a period of **24 months** from the date of purchase. Warranty does not cover consumable parts subject to normal use (replace parts).
2. The manufacturer provides free repair, in case of under warranty against manufacturing defects.
3. The manufacturer provides to resolve the complaint within 30 days from the date of notification.
4. The buyer loses all rights guarantees in the event of unauthorized changes in construction or operation contrary to the instructions.
5. Any damage caused by improper transportation or storage device, its improper operation, maintenance and other reasons not caused by the manufacturer - can be removed only at the expense of the user.
6. If the above mentioned causes have caused permanent changes in the quality unit granted the guarantee expires.
7. Machine repairing made during the warranty period by persons not authorized by the manufacturer will void the warranty.
8. Warranty does not cover direct and indirect losses caused by defective machine.
9. The warranty card is not valid without the date stamp and signature, as well as amendments and deletions made by unauthorized persons.
10. In matters not covered by these warranty conditions apply to the Civil Code.
11. The buyer pays the transportation cost for the mini digger to and from the service point or cover the travel cost for a service technician to the service point.

**Mini digger SPRINGER-MAX**

**Purchase date:**.....

**Serial number:**.....

**Sellers stamp and signature:**.....

SERVICE

Reporting date	Release date	Steps taken	Service confirmation



## Declaration of conformity WE

For the purposes of the Machinery Directive 2006/42/EC, Annex II, 1.A

Producer:

**PHU ELGO-PLUS**

**Przemysłowa 1, 87-880 Brześć Kujawski POLAND**

A person domiciled or resident in the community authorized to compile the technical file:

Owner Andrzej Zieliński

**The undersigned hereby declares that the product::**

TRADE MARK: **MINI DIGGER SPRINGER-MAX**

FUNCTION: **MULTIFUNCTIONAL MINI DIGGER**

TYPE/MODEL: **SPRINGER-MAX**

complies with the following European directives:

- **machinery directive 2006/42/WE** of 17.05.2006 (Dz.U. L 157 z 9.06.2006 page 24) and its amendment 2009/127/WE of 21.10.2009 (Dz.U. L 310 z 25.11.2009 page 29).

**Andrzej Zieliński**  
Owner