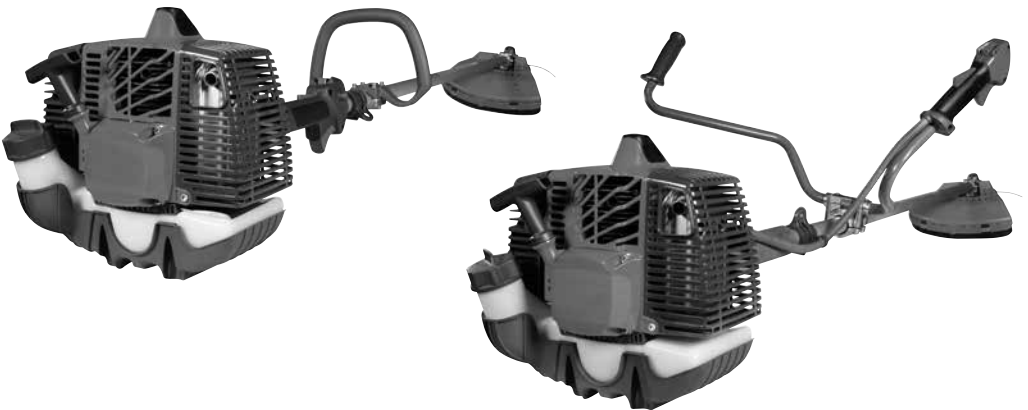


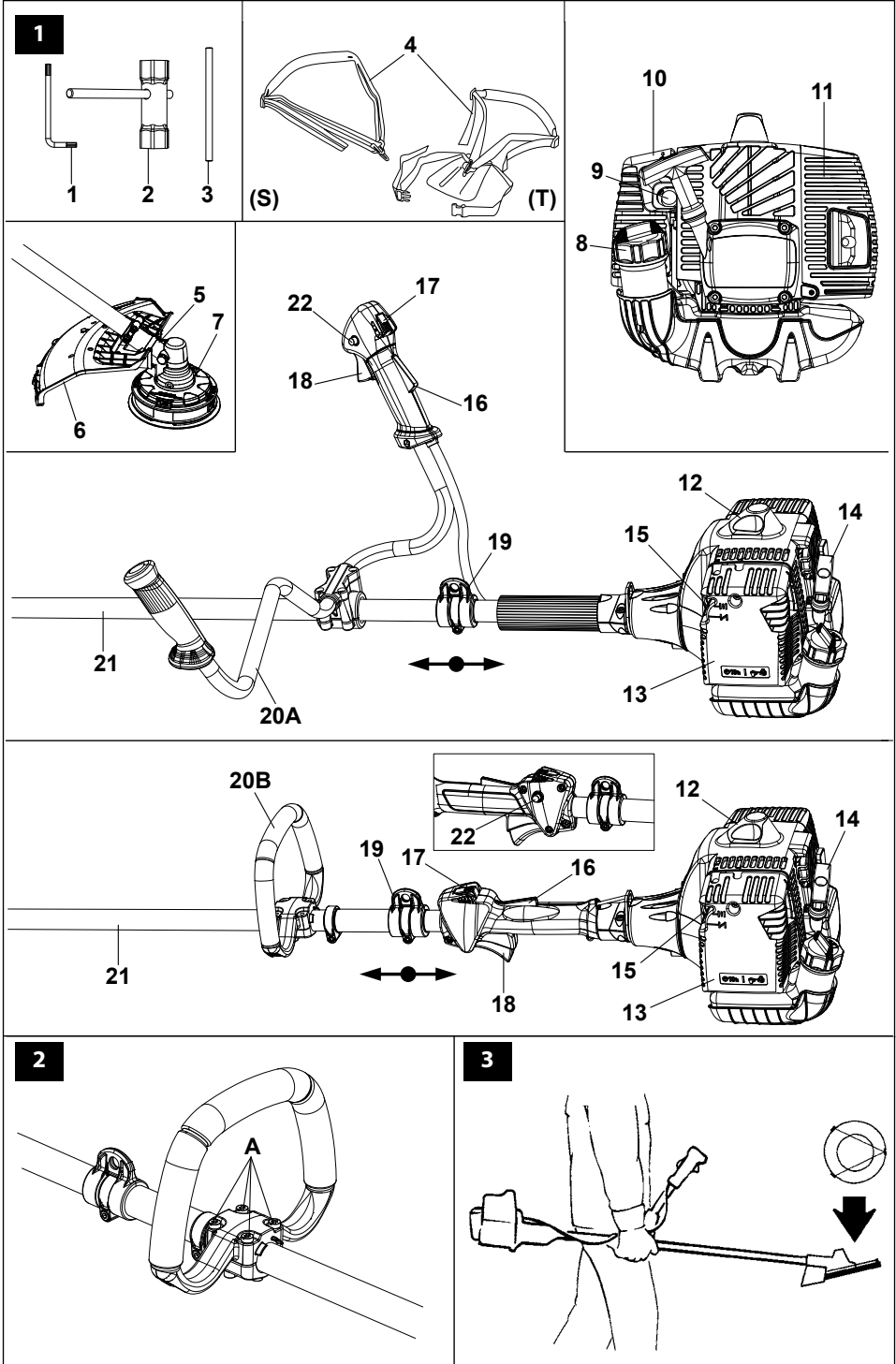
our **power**, your **passion**

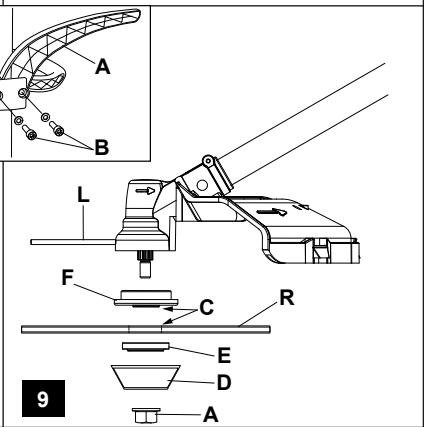
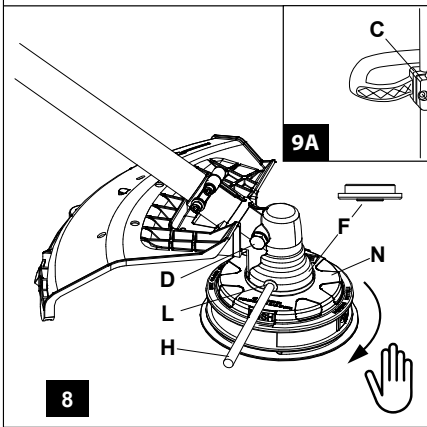
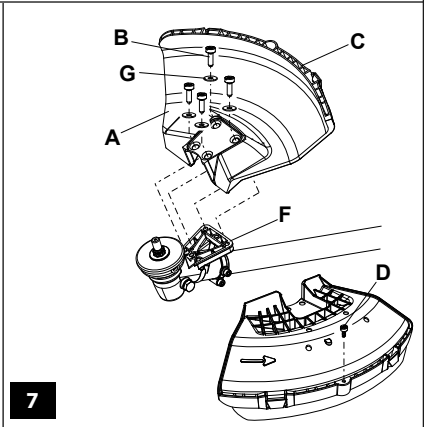
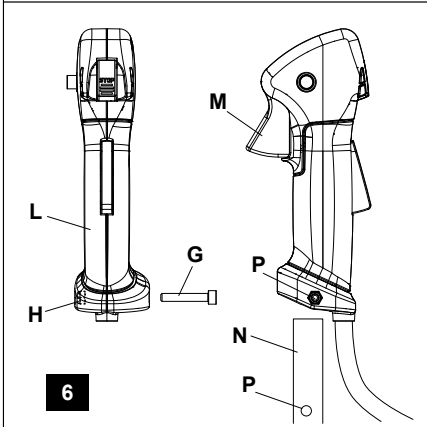
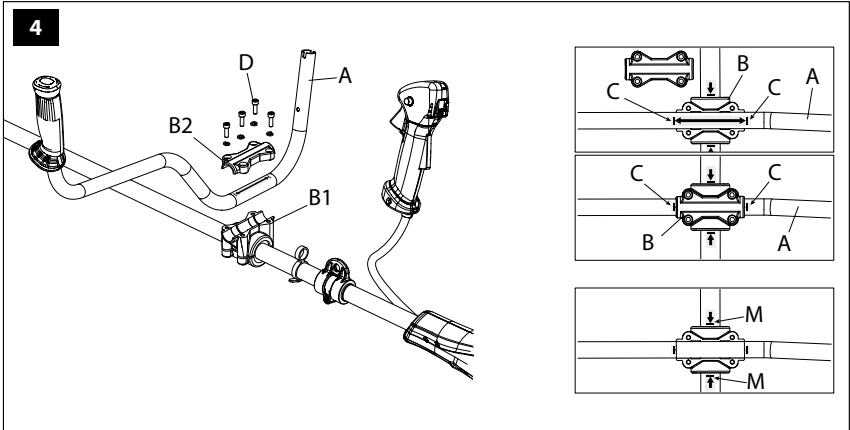
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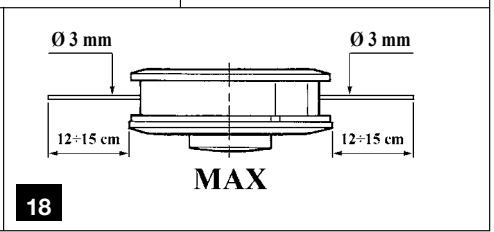
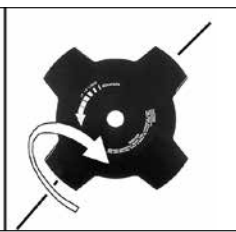
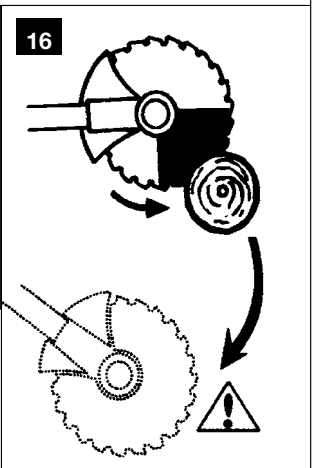
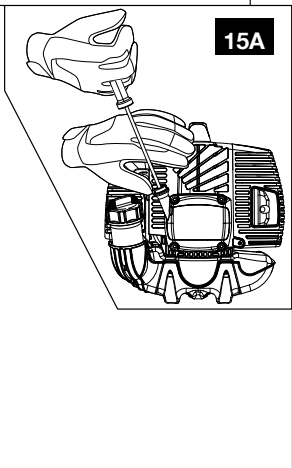
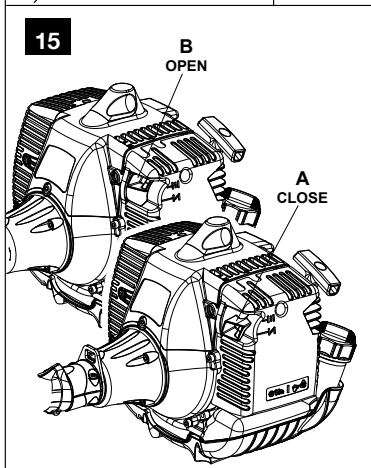
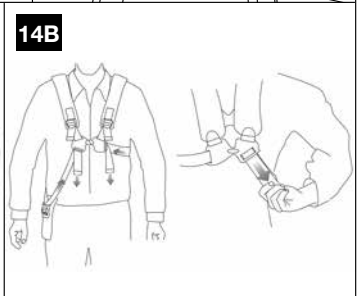
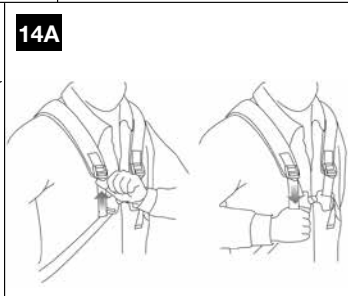
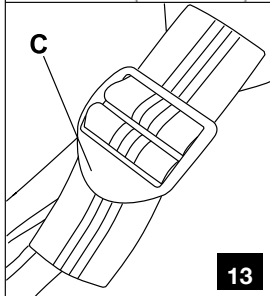
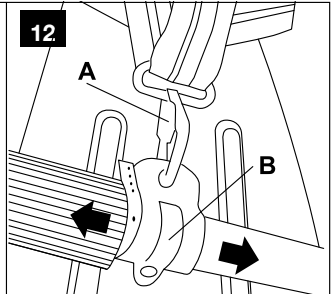
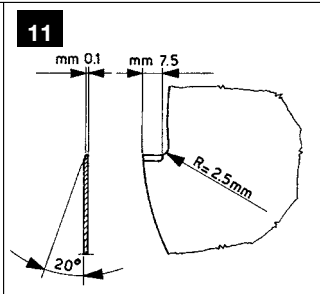
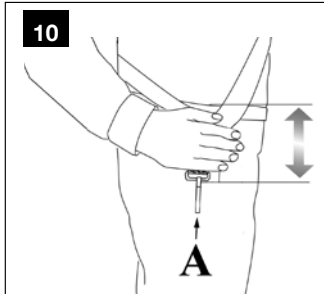
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GB	OPERATOR'S INSTRUCTION BOOK
F	MANUEL D'UTILISATION ET D'ENTRETIEN
D	BETRIEBS- UND WARTUNGSANLEITUNG
E	MANUAL DE USO Y MANTENIMIENTO
NL	GEbruIKS- EN ONDERHOUDSHANDLEIDING
P	MANUAL DE INSTRUÇÕES
GR	ΕΓΧΕΙΡΙΔΙΟ ΧΡΗΣΗΣ ΚΑΙ ΣΥΝΤΗΡΗΣΗΣ

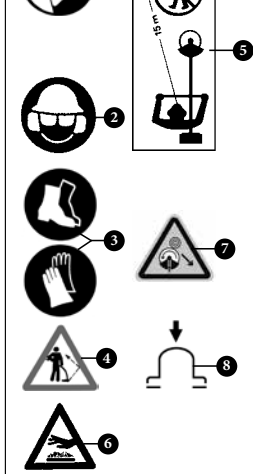
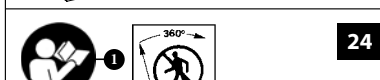
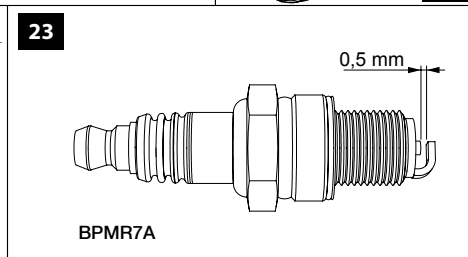
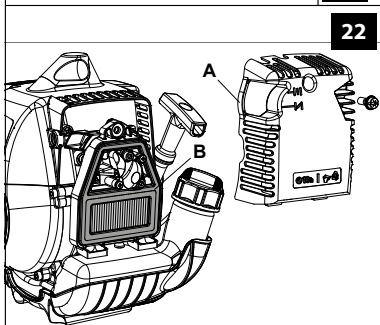
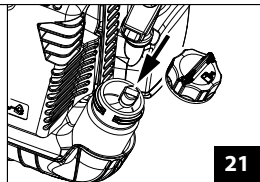
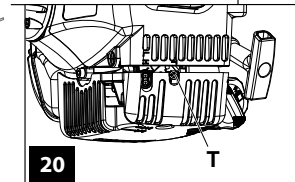
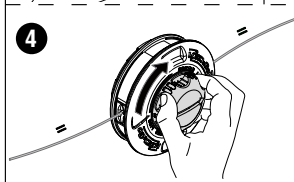
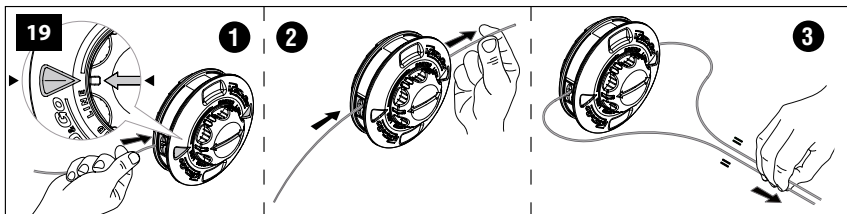
CZ	NÁVOD K POUŽITÍ
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RUS	UK ИНСТРУКЦИЯ ПО ЭКСПЛУАТАЦИИ
PL	INSTRUKCJA OBSŁUGI I KONSERWACJI
H	HASZNÁLATI ÉS KARBANTARTÁSI UTASÍTÁS
LV	LIETOŠANAS PAMĀCĪBA UN TEHNISKĀ APKOPE
EST	KASUTUSJUHEND
LT	OPERATORIAUS INSTRUKCIJŲ KNYGELĖ
RO	MANUAL DE UTILIZARE ȘI ÎNȚREȚINERE











Emak S.p.A.
Bagnolo in Piano (RE) ITALY

CE 2017
8617120736

Emak **CE**

S.p.A. - Via E. Fermi, 4
42011 Bagnolo in Piano (RE) Italy

Euro2 **LWA**

EAC **113** dB

61250208D

e1*97/68SH2-IIA*2004/26*
0471*01 (II) BRUSHCUTTER

TR 008

max
XXXX rpm

Italiano	3
English	23
Français	42
Deutsch	63
Español	84
Nederlands	104
Português	125
Ελληνικά	146
Česky	167
Slovensky	187
Русский / Українська	207
Polski	228
Magyar	249
Latviski	269
Eesti keel	288
Lietuvių k.	307
Română	327

TRANSLATION OF ORIGINAL INSTRUCTIONS

INTRODUCTION

For correct use of the machine and to avoid accidents, do not start working until you have read this manual carefully. You will find explanations concerning the operation of the various parts plus instructions for necessary checks and relative maintenance.

NOTE: The descriptions and illustrations contained in this manual are not binding. The manufacturer reserves the right to undertake any modifications it deems necessary without revising this manual.

In addition to the operating instructions, this manual contains paragraphs that require your special attention. Such paragraphs are marked with the symbols described below:

WARNING: where there is a risk of an accident or personal, even fatal, injury or serious damage to property.

CAUTION: where there is a risk of damaging the machine or its individual components.

WARNING

RISK OF HEARING DAMAGE

IN NORMAL CONDITIONS OF USE, THIS MACHINE MAY EXPOSE THE OPERATOR TO A PERSONAL DAILY NOISE LEVEL EQUAL TO OR HIGHER THAN
85 dB (A)

CONTENTS

1. SAFETY PRECAUTIONS (precautions for using the machine safety)	23
2. SYMBOLS AND SAFETY WARNINGS (explanations on how to identify the machine and the meaning of the symbols)	25
3. MAIN COMPONENTS (position of the main parts that make up the machine)	25
4. ASSEMBLY (explanations on how to remove the packaging and assemble detached parts)	25
5. STARTING	26
6. STOPPING THE ENGINE	28
7. USING THE MACHINE	28
8. TRANSPORTING	32

9. MAINTENANCE (all information required to keep the machine at peak efficiency)	33
10. STORAGE	35
11. ENVIRONMENTAL PROTECTION (advice on using the machine in ways that respect the environment)	36
12. TECHNICAL DATA (a summary of the main specifications of the machine)	37
13. DECLARATION OF CONFORMITY	40
14. WARRANTY CERTIFICATE (a summary of the warranty conditions)	40
15. TROUBLESHOOTING (helps you to quickly solve any problems you may encounter while using the machine)	41

1. SAFETY PRECAUTIONS

WARNING

- **The machine, when used correctly, is a useful and effective tool; if used incorrectly or without the necessary precautions, it can be dangerous. To ensure your safety and comfort, always observe the safety instructions given here below and throughout this manual.**
- **Exposure to vibrations through prolonged use of combustion engine-driven tools could cause blood vessel or nerve damage in the fingers, hands, and wrists of people prone to circulation disorders or abnormal swellings. Prolonged use in cold weather has been linked to blood vessel damage in otherwise healthy people. If symptoms occur such as numbness, pain, loss of strength, change in skin colour or texture, or loss of feeling in the fingers, hands, or wrists, discontinue the use of this tool and seek medical attention.**
- **The ignition system of your machine produces an electromagnetic field of very low intensity. This field could interfere with certain pacemakers. To reduce the risk of serious or fatal injury, persons with pacemakers should consult their doctor or the manufacturer of the pacemaker before using this machine.**



WARNING: National regulations may limit the use of the machine.

- 1 - Do not operate the machine unless you have received specific instruction on its use. First time users must familiarise themselves thoroughly with the operation of the machine before working in the field.
- 2 - The machine must only be used by adults in good physical condition who are familiar with the operating instructions.
- 3 - Never use the brush cutter when you are tired or fatigued or if you have taken alcohol, drugs or medication.
- 4 - Wear appropriate clothing and safety articles such as: boots, heavy-duty trousers, gloves, protective eyewear, ear protection and protective helmet. Use clothing which is close-fitting but comfortable.
- 5 - Do not allow children to use the brush cutter.
- 6 - Do not allow other people to remain within 15 metres during brush cutter use .
- 7 - Before using the brush cutter, make sure that the blade fixing bolt is well-tightened.
- 8 - The brush cutter must be equipped with the cutting accessories recommended by the manufacturer (look pag. 38).
- 9 - Never use the brush cutter without the blade guard or the head.
- 10 - Before starting the engine, make sure that the blade is free to move and is not in contact with any foreign objects.
- 11 - Every now and then while working, stop the engine and check the blade. Replace it at the first sign of cracks or breaks.
- 12 - Only use the machine in well-ventilated places, do not use in explosive or flammable atmospheres or in closed environments.
- 13 - Never touch the blade or attempt any maintenance work while the engine is running.
- 14 - It is prohibited to fit any device other than that supplied by the manufacturer.
- 15 - Do not use a machine that has been damaged, badly repaired, improperly assembled or modified. Do not attempt to remove or bypass any of the safety devices. Only use cutting attachments indicated in

the table.

- 16 - All labels with health hazards must be kept in good conditions. In case of damage or deterioration, immediately substitute them (Fig. 28).
- 17 - Do not utilize the machine for uses different from the ones specified in the manual (see pag. 28).
- 18 - Never leave the machine unattended with the engine running.
- 19 - Do not start the engine with the arm not mounted.
- 20 - Check the brush cutter daily to be sure that components and safety devices are full functioning properly.
- 21 - Do not attempt to carry out operations or repairs that are not part of the normal maintenance. See the authorised dealer.
- 22 - When disposing of the machine at the end of its useful life, think of the environment. Take your old unit to your dealer who will be able to dispose of it in a proper manner.
- 23 - Only experienced persons who are familiar with the operation and safe use of this machine should use it. If you lend the blower to someone, also give them the instruction manual and ensure that they read it before using the machine.
- 24 - All saw service, other than the operations shown in the present manual, should be performed by competent personnel.
- 25 - Keep this manual on hand and consult it before each use of the tool.
- 26 - Please note that the owner or the user is responsible for any accidents or damage to third parties or their property.



WARNING

- **Never use a machine with faulty safety equipment. The machine's safety equipment must be checked and maintained as described in this section. If your machine fails any of these checks contact an Authorised Service Centre to get it repaired.**
- **Any use of the machine not expressly envisaged in this manual is to be**

considered improper and therefore a source of risk to people and property.

2. SYMBOLS AND SAFETY WARNINGS (Fig.24)

- 1 - Read operator's instruction book before operating this machine.
- 2 - Wear head, eye and ear protection.
- 3 - Wear strong boots and gloves when cutting with metal or plastic blades.
- 4 - Be aware that objects can be thrown.
- 5 - Keep bystanders away 15 m.
- 6 - **WARNING!** – The surface can be hot!
- 7 - Warning! Kickback it's danger.
- 8 - Purge Bulb.
- 9 - Type of machine: **BRUSH CUTTER.**
- 10 - Guaranteed sound power level.
- 11 - CE conformity marking.
- 12 - Serial number.
- 13 - Year of manufacture.
- 14 - Max. speed of output shaft, RPM

3. MAIN COMPONENTS (Fig.1)

- 1÷3 - Tools supplied
- 4 - Harness
- 5 - Bevel gear
- 6 - Curved guard
- 7 - Nylon line head
- 8 - Fuel tank cap
- 9 - Purge Bulb
- 10 - Carburettor adjustment screws
- 11 - Muffler guard
- 12 - Spark plug
- 13 - Air filter
- 14 - Starter Handle
- 15 - Choke Lever
- 16 - Throttle trigger lockout
- 17 - STOP button
- 18 - Throttle lever
- 19 - Harness attachment
- 20 - Handle
- 21 - Shaft arm
- 22 - Button half-throttle

4. ASSEMBLY

FITTING THE SAFETY GUARD (Fig.7)

Fit the blade guard (A) to the shaft arm with screws in a position allowing the operator to work safely (B).

NOTE: use the guard (C) only with nylon head. Secure the guard (C) to the protection (A) by means of the screw (D).

FITTING THE NYLON LINE HEAD (Fig. 8)

Put the upper (F) flange in place. Put the head fixing pin (H) in the appropriate hole (L) and tighten the head (N) anti-clockwise by hand.

FITTING THE DISK (Fig. 9)

Fix the blade (R) onto the upper flange (F) making sure that the rotation direction is correct.

Fix the lower flange (E), the cup (D) and tighten bolt (A) anti-clockwise.

Put the pin provided in the appropriate hole (L) to block the blade and allow the bolt (A) to be tightened to **2.5 kgm (25 Nm)**.



WARNING – Collar (see arrows C, Fig.9) must locate in blade's mounting hole.

FITTING THE HANDLE (Fig. 2)

Fit the handle onto the shaft arm and secure it using screws (A). The handle position is calculated depending on the requirements of the operator.

ASSEMBLING THE SAFETY BOOM (Fig. 9A)

When using the disc instead of nylon line head, it is necessary to set up the "safety boom". Fix the boom (A) under the attachment (C) of handle (20B, Fig. 1) by means of the screws (B). Taking care to verify the "safety boom" being on the left side of the brushcutter.

ASSEMBLING THE BIKE HANDLE (Fig. 4)



WARNING: The handle must be fixed between the two notches (M) indicated on the drive shaft tube.

- Place the bike handle (A) in the lower hub (B1).



CAUTION: The bike handle (A) must be fixed onto the hub (B) inside the two notches (C) indicated on the bike handle.

- Place the upper hub (B2) in position and tighten the 4 screws (D), without finally tighten yet.
- Line up the handlebar at a right angle to the drive tube.

MOUNTING THE CONTROL HANDLES (Fig. 6)

- Loosen the screw (G, Fig.6). The nut (H) remains in the control handle (L).
- Push the control handle (L) (throttle trigger M must point toward the gearbox) onto the bike handle (N) so that the holes (P) line up.
- Insert screw (G) and tighten down firmly.

⚠ WARNING: Make sure that all components are connected properly and all screws tightened.

PREPARING TO WORK

HARNESS (4S-T, Fig. 1)

Correct adjustment of the harness permits the brush cutter to be properly balanced and at an appropriate height from the ground (Fig. 10-14A).

- Put on the single or double harness.
- Hook the brush cutter to the harness using the hook (A, Fig. 12).
- Position the hook (B, Fig. 12) to obtain the best brush cutter balance.
- Position the buckle (C, Fig. 13-14B) to obtain the correct brush cutter height.

⚠ WARNING! – When using wood-cutting blades (22-60-80 teeth) a double harness with **quick-release mechanism** must be worn.

APPROVED POWER TOOL ATTACHMENTS

The following Emak attachments may be mounted to the basic power tool:

EP 100 Pole pruner (1)

(1) Not approved for use with bike handle units (SPARTA 381T - 441T - STARK 3810T - 4410T).



5. STARTING



FUELING

⚠ WARNING: Gasoline is an extremely flammable fuel. Use extreme caution when handling gasoline or fuel mix. Do not smoke or bring any fire or flame near the fuel or the unit.

- **To reduce the risk of fire and burn injury, handle fuel with care. It is highly flammable.**
- Mix and store fuel in a container approved for gasoline.
- Mix fuel outdoors where there are no sparks or flames.
- Select bare ground, stop engine, and allow to cool before refueling.
- Loosen fuel cap slowly to release pressure and to keep fuel from escaping around the cap.
- Tighten fuel cap securely after refueling. Unit vibration can cause an improperly tightened fuel cap to loosen or come off and spill quantities of fuel.
- Wipe spilled fuel from the unit. Move 3 metre away from refueling site before starting engine.
- Never attempt to burn off spilled fuel under any circumstances.
- Do not smoke while handling fuel or while operating the unit.
- Store fuel in a cool, dry, well ventilated place.
- Never place the machine in a combustible area such as dry leaves, straw, paper, etc.
- Store the unit and fuel in an area where fuel vapors cannot reach sparks or open flames from water heaters, electric motors or switches, furnaces, etc.
- Never take the cap off the tank when the engine is running.

GASOLINE 	OIL A 	
	2%-50 : 1	
l	l	(cm ³)
1	0,02	(20)
5	0,10	(100)
10	0,20	(200)
15	0,30	(300)
20	0,40	(400)
25	0,50	(500)

- Never use fuel for cleaning operations.
 - Take care not to get fuel on your clothing
- This product is powered by a 2-cycle engine and requires pre-mixing gasoline and 2-cycle oil. Pre-mix unleaded gasoline and 2-cycle engine oil in a clean container approved for gasoline.


RECOMMENDED FUEL: THIS ENGINE IS CERTIFIED TO OPERATE ON UNLEADED GASOLINE INTENDED FOR AUTOMOTIVE USE WITH AN OCTANE RATING OF 89 ((R + M) / 2) OR HIGHER.


Mix 2-cycle engine oil with gasoline according to the instructions on the package.

We strongly recommend the use of **2% (1:50)** Efco - Oleo-Mac two cycle engine oil, which is specifically formulated for all air-cooled two-stroke engines.

The correct oil / fuel proportions shown in the table (Fig. A) are suitable when using the **PROSINT 2** and **EUROSINT 2** or an equivalent high-quality engine oil (**JASO specification FD** or **ISO specification L-EGD**).

 **CAUTION: DO NOT USE AUTOMOTIVE OIL OR 2-CYCLE OUTBOARD OIL.**

-  **CAUTION:**
- Match your fuel purchases to your consumption; don't buy more than you will use in one or two months;
 - Store gasoline in a tightly-closed container in a cool, dry place.

 **CAUTION - For the mixture, never use a fuel with an ethanol percentage higher than 10%; gasohol (mixture of gasoline and ethanol) up to 10% ethanol or E10 fuel are acceptable.**

NOTE - Prepare only the quantity of mixture required for immediate use; do not leave fuel in the tank or a container for a long time. We recommend the use of the additive **Emak ADDITIX 2000** code 001000972 if the mixture is to be stored for 12 months.

Alkylate gasoline


 **CAUTIONS - Alkylate fuels have**


different density than normal fuel. Therefore engines, set with normal fuel, need different H jet regulation to avoid critical issues. For this operation it's necessary turned at a Licensed Service Dealer.


Filling the tank


stir the mixture well before refuelling.

STARTING


 **Before starting the engine, make sure that the blade is free to move and is not in contact with any foreign objects.**

 **The cutting attachment must not rotate when the engine is idling. Otherwise contact an Authorized Service Center to carry out a check and fix the problem.**

 **WARNING: Hold the brush cutter firmly with both hands. Always keep your body is to the left of tube. Never use a cross-handed grip. Left-handers should follow these instructions too. Keep a proper cutting stance.**


 **Over exposure to vibrations can result in blood-vessel or nerve injury to persons suffering with blood circulation problems. Seek medical attention if you experience physical symptoms such numbness, lack of feeling, reduction in normal strength, changes in the colour of the skin. These symptoms normally appear in the fingers, hands or wrists.**

Before starting the engine, make sure that the throttle lever works freely.

 **WARNING: Follow safety instruction for fuel handling. Always shut off engine before fuelling. Never add fuel to a machine with a running or hot engine. Move at least 3 m from refuelling site before starting engine. DO NOT SMOKE!**

1. Clean surface around fuel cap to prevent contamination.
2. Loosen fuel cap slowly.

3. Carefully pour fuel mixture into the tank. Avoid spillage.
4. Prior to replacing the fuel cap, clean and inspect the gasket.
5. Immediately replace fuel cap and hand tighten. Wipe up any fuel spillage.

 **WARNING: Check for fuel leaks, if any are found, correct before use. Contact a Servicing Dealer if necessary.**

Engine is Flooded

- Engage a suitable tool in the spark plug boot.
- Pry off the spark plug boot.
- Unscrew and dry off the spark plug.
- Open the throttle wide.
- Pull the starter rope several times to clear the combustion chamber.
- Refit the spark plug and connect the spark plug boot, press it down **firmly**.
- Set the choke lever to **OPEN** position – even if engine is cold.
- Now start the engine.


START-UP PROCEDURE


- 1) Slowly push the purge bulb 4 times (9, Fig.1).
- 2) Pull the choke lever (15, Fig.1) in the **CLOSE** position (A, Fig.15)
- 3) Pull the throttle lever (18, Fig. 1) and stop it at half-throttle by pressing the button (22), then release the lever (18).
- 4) Place the brush cutter on the ground in a stable position. Check that the blade is free. Holding the brush cutter down (Fig.15A), pull the starter rope until the first kick over of the engine is heard (no more than 3 pulls). A new unit may require additional pulls.
- 5) Push the choke lever (15, Fig.1) in **OPEN** position (B, Fig.15).
- 6) Pull the starter cord to start the engine. Once the machine is started, warm up the machine for about few seconds, without touch the throttle lever. The machine could need more seconds to warm up with cold weather or at high altitudes. Finally, push the throttle lever (18, Fig.1) for deactivate the half-throttle.

 **CAUTION:**
- **Never wrap the starter cord around your**

hand.


- **When pulling the starter rope, do not use the full extent of the rope as this can cause the rope to break.**
- **Do not let starter rope snap back. Hold the starter handle (14, Fig.1) and let the rope rewind slowly.**

 **WARNING: Once the engine is warmed up do not use the choke to start up again.**

 **WARNING: Use the semi-acceleration device only in the phase of starting the engine to cold.**

BREAKING-IN THE ENGINE

The engine reaches the maximum power after 5-8 hours of activity. During this period of breaking-in do not use the engine at wide open throttle without load, to avoid excessive functioning stress.

 **WARNING! - During the breaking-in period do not vary the carburetion to obtain a presumed power increment; the engine can be damaged.**


NOTE: It is normal for smoke to be emitted from a new engine during and after first use.

6. STOPPING THE ENGINE

Set the throttle lever to idle position (18, Fig. 1) and wait a few seconds to let the engine cool off. Turn off the engine, pushing the ON/OFF switch (17).

7. USING THE MACHINE

PROHIBITED USE

 **WARNING: Avoid kickout which can result in serious injury. Kickout is the sideward or sudden forward motion of the machine occurring when the blade contacts any object such as a log or stone, or when the wood closes in and pinches the saw blade in the cut. Contacting a foreign object can also result in loss of brush cutter control.**

⚠ WARNING! - Always follow the safety precautions. The brush cutter must only be used to trim grass material. Cut wood only with appropriate saw blade. Do not cut metal, plastics, masonry, or non-wood building materials. Do not use the brush cutter as a lever to lift, move or break objects, nor lock it on fixed supports. It is forbidden to apply tools or applications that are not the ones indicated by the manufacturer onto the brush cutter's power take-off.

⚠ WARNING: When using rigid blades, avoid cutting close to fences, sides of buildings, tree trunks, stones or other such objects that could cause the brush cutter to kick out or could cause damage to the blade. We recommend use of the nylon line heads for such jobs. In addition, be alert to an increased possibility of ricochets in such situations.

⚠ WARNING: Never use of a brush cutter with the cutting attachment perpendicular to the ground. Never use the brushcutter for trimming hedges.

⚠ WARNING: If the blade loosens after being properly tightened, stop work immediately. The retaining nut may be worn or damaged and should be replaced. Never use unauthorized parts to secure the blade. If the blade continues to loosen, see your dealer. Never use the brushcutter for trimming hedges.

Work Area Precautions

- Always cut with both feet on solid ground to prevent being pulled off balance.
- Make sure you can move and stand safely. Check the area around you for possible obstacles (roots, rocks, branches, ditches, etc.) in case you have to move suddenly.
- Do not cut above chest height, as a brush cutter held higher is difficult to control against kickout forces.
- Do not work near electrical wires. Leave this

operation for professionals.

- Cut only when visibility and light are adequate for you to see clearly.
- **Do not cut from a ladder, this is extremely dangerous.**
- Stop the brush cutter if the blade strikes a foreign object. Inspect the blade and brush cutter; repair parts as necessary.
- Keep the blade out of dirt and sand. Even a small amount of dirt will quickly dull a blade and increase the possibility of kickout.
- Stop the engine before setting the brush cutter down.
- Be particularly cautious and alert while wearing hearing protection because such equipment may restrict your ability to hear sounds indicating danger (calls, signals, warnings, etc).
- Be extremely cautious when working on slopes or uneven ground.

⚠ WARNING: Never use rigid blades when cutting in stony areas. Thrown objects or damaged blades may result in serious or fatal injury to the operator or bystanders. Watch out for thrown objects. Always wear approved eye protection. Never lean over the cutting attachment guard. Stones, rubbish, etc. can be thrown up into the eyes causing blindness or serious injury. Keep unauthorised persons at a distance. Children, animals, onlookers and helpers should be kept outside the safety zone of 15 m. Stop the machine immediately if anyone approaches. Never swing the machine around without first checking behind you to make sure no-one is within the safety zone.

Working Techniques

General Working Instructions

⚠ WARNING: This section describes the basic safety precautions for working with clearing saws and trimmers. If you encounter a situation where you are uncertain how to proceed you should ask an expert. Contact your dealer or your service workshop. Avoid all usage which you consider to be beyond

your capability. You must understand the difference between forestry clearing, grass clearing and grass trimming before use.

Basic safety rules

1. Look around you:

- To ensure that people, animals or other things cannot affect your control of the machine.
- To ensure that people, animals, etc., do not come into contact with the cutting attachment or loose objects that are thrown out by the cutting attachment.

⚠ WARNING: Do not use the machine unless you are able to call for help in the event of an accident.

2. Do not use the machine in bad weather, such as dense fog, heavy rain, strong wind, intense cold, etc. Working in bad weather is tiring and often brings added risks, such as icy ground, etc.

3. Make sure you can move and stand safely. Check the area around you for possible obstacles (roots, rocks, branches, ditches, etc.) in case you have to move suddenly. Take great care when working on sloping ground.

4. Switch off the engine before moving to another area.

5. Never put the machine down with the engine running.

- Always use the correct equipment.
- Make sure the equipment is well adjusted.
- Organise your work carefully.
- Always use full throttle when starting to cut with the blade.
- Always use sharp blades.

⚠ WARNING: Neither the operator of the machine nor anyone else may attempt to remove the cut material while the engine is running or the cutting equipment is rotating, as this can result in serious injury. Stop the engine and cutting equipment before you remove material that has wound around the blade as otherwise there is a risk of injury. The bevel gear can get hot during use and may remain so for a while afterwards. You

could get burnt if you touch it.

⚠ WARNING: Sometimes branches or grass get caught between the guard and cutting attachment. Always stop the engine before cleaning.

Check before starting

- Check the blade to ensure that no cracks have formed at the bottom of the teeth or by the centre hole. Discard a blade if cracks are found.
- Check that the support flange is not cracked due to fatigue or due to being tightened too much. Discard the support flange if it is cracked.
- Ensure the locking nut has not lost its captive force. The tightening torque of the locking nut should be **25 Nm**.
- Check that the blade guard is not damaged or cracked. Replace the blade guard if it is cracked.

⚠ WARNING: Never use the machine without a guard or with a defective guard. Never use the machine without the transmission shaft.

Forestry clearing


- Before you start clearing, check the clearing area, the type of terrain, the slope of the ground, whether there are stones, hollows etc.
- Start at whichever end of the area is easiest, and clear an open space from which to work.
- Work systematically to and fro across the area, clearing a width of around 4-5 m on each pass. This exploits the full reach of the machine in both directions and gives the operator a convenient and varied working area to work in.
- Clear a strip around 75 m long. Move your fuel can as work progresses.
- On sloping ground you should work along the slope. It is much easier to work along a slope than it is to work up and down it.
- You should plan the strip so that you avoid going over ditches or other obstacles on the ground. You should also orient the strip to

take advantage of wind conditions, so that cleared stems fall in the cleared area of the stand.

Grass clearing using a grass blade

- Grass blades and grass cutters must not be used on woody stems.
- A grass blade is used for all types of tall or coarse grass.
- The grass is cut down with a sideways, swinging movement, where the movement from right-to-left is the clearing stroke and the movement from left-to-right is the return stroke. Let the left-hand side of the blade (between 8 and 12 o'clock) do the cutting.
- If the blade is angled to the left when clearing grass, the grass will collect in a line, which makes it easier to collect, e.g. by raking.
- Try to work rhythmically. Stand firmly with your feet apart. Move forward after the return stroke and stand firmly again.
- Let the support cup rest lightly against the ground. It is used to protect the blade from hitting the ground.
- Reduce the risk of material wrapping around the blade by following these instructions:
 1. Always work at full throttle.
 2. Avoid the previously cut material during the return stroke.
- Stop the engine, unclip the harness and place the machine on the ground before you start to collect the cut material.

Grass trimming with a trimmer head

 **CAUTION: Do not work with mowing line longer than the intended diameter. With a properly mounted guard, the built-in cutter will automatically adjust the line to its proper length. Overly long lines can overload the engine, resulting in damage to the clutch mechanism and nearby parts.**

Trimming

- Hold the trimmer head just above the ground at an angle. It is the end of the cord that does the work. Let the cord work at its own pace. Never press the cord into the area to be cut.

- The cord can easily remove grass and weeds up against walls, fences, trees and borders, however it can also damage sensitive bark on trees and bushes, and damage fence posts.
- Reduce the risk of damaging plants by shortening the cord to 10-12 cm and reducing the engine speed.

Clearing

- The clearing technique removes all unwanted vegetation. Keep the trimmer head just above the ground and tilt it. Let the end of the cord strike the ground around trees, posts, statues and the like.

 **CAUTION: This technique increases the wear on the cord.**

- The cord wears quicker and must be fed forward more often when working against stones, brick, concrete, metal fences, etc., than when coming into contact with trees and wooden fences.
- When trimming and clearing you should use less than full throttle so that the cord lasts longer and to reduce the wear on the trimmer head.

Cutting

- The trimmer is ideal for cutting grass that is difficult to reach using a normal lawn mower. Keep the cord parallel to the ground when cutting. Avoid pressing the trimmer head against the ground as this can ruin the lawn and damage the tool.
- Do not allow the trimmer head to constantly come into contact with the ground during normal cutting. Constant contact of this type can cause damage and wear to the trimmer head.

Sweeping

- The fan effect of the rotating cord can be used for quick and easy clearing up. Hold the cord parallel to and above the area to be swept and move the tool to and fro.
- When cutting and sweeping you should use full throttle to obtain the best results.

 **WARNING: Never cut, when visibility is**

poor or in very high or low temperatures or in freezing weather.

Forestry clearing using a saw blade

- The risk of kickout increases with increasing stem size. You should therefore avoid cutting with the area of the blade between 12 o'clock and 3 o'clock (**Fig.16**).
- To fell to the left, the bottom of the tree should be pushed to the right. Tilt the blade and bring it diagonally down to the right, exerting firm pressure. At the same time push the stem using the blade guard. Cut with the area of the blade between 3 o'clock and 5 o'clock. Apply full throttle before advancing the blade.
- To fell to the right, the bottom of the tree should be pushed to the left. Tilt the blade and bring it diagonally up to the right. Cut with the area of the blade between 3 o'clock and 5 o'clock so that the direction of rotation of the blade pushes the bottom of the tree to the left.
- To fell a tree forwards, the bottom of the tree should be pulled backwards. Pull the blade backwards with a quick, firm movement.
- If the stems are tightly packed, adapt your walking pace to suit.
- If the blade jams in a stem, never jerk the machine free. If you do this the blade, bevel gear, shaft or handlebar may be damaged. Release the handles, grip the shaft with both hands and gently pull the machine free.

Using the circular saw blade

WARNING: Circular saw blades are suitable for thinning brush and cutting small trees up to a diameter of 5 cm. Do not attempt to cut trees with larger diameters, since the blade may catch or jerk the clearing saw forward. This may cause damage to the blade or loss of control of the clearing saw which may result in serious injury.

WARNING: A saw blade can only be used in connection with the proper guard (see table pag.38) a twin handle and double harness with release mechanism.

Brush cutting with a saw blade

- Thin stems and brush are mown down. Work


with a sawing movement, swinging sideways.

- Try to cut several stems in a single sawing movement.
- With groups of hardwood stems, first clear around the group. Start by cutting the stems high up around the outside of the group to avoid jamming. Then cut the stems to the required height. Now try to reach in with the blade and cut from the centre of the group. If it is still difficult to gain access, cut the stems high up and let them fall. This will reduce the risk of jamming.

8. TRANSPORTING

TRANSPORTION

Carry the brush cutter with the engine off and with the protective blade cover on (Fig. 3).

 **ATTENTION:** Fit the disk protection p.n. 4196086 as shown (Fig. 3) before transporting or storing the brushcutter.

9. MAINTENANCE

Maintenance Chart

		Before Each Use	Monthly	If Damaged or Faulty	As Required	1 year or 100 hrs.
Please note that the following maintenance intervals apply for normal operating conditions only. If your daily work requires longer than normal or harsh cutting conditions are present, then the suggested intervals should be shortened accordingly.						
Complete Machine	Inspect (Leaks, Cracks, and Wear)	x				
	Clean after finishing daily work	x				
Controls (STOP button, Choke Lever, Throttle Trigger, Trigger interlock)	Check Operation	x				
Fuel Tank	Inspect (Leaks, Cracks, and Wear)	x				
	Clean					x
Fuel Filter and tube	Inspect		x			
	Clean, Replace Filter Element			x		x
Cutting Attachments	Inspect (Damage, Sharpness, and Wear)	x				
	Check Tension	x				
	Sharpen			x	x	
Bevel Gear	Inspect (Damage, Wear and Grease Level)		x		x	
Cutting Attachments Guard	Inspect (Damage, and Wear)	x				
	Replace			x	x	
All Accessible Screws and Nuts (Not Adjusting Screws)	Inspect	x				
	Retighten		x			
Air Filter	Clean	x			x	
	Replace			x		x
Cylinder Fins	Clean		x			
Starter System Vents	Clean after finishing daily work	x				
Starter Rope	Inspect (Damage, and Wear)		x			
	Replace			x		
Carburetor	Check Idle (Cutting Attachments must not rotate at idle)	x				
Spark Plug	Check Electrode Gap		x			
	Replace			x		x
Vibration Mounts	Inspect (Damage, and Wear)		x			
	Replace by Dealer			x	x	
Cutting Attachments nuts and screws	Check that the locking nut of the cutting equipment is tighten correctly	x				

BLADE SHARPENING (2-3-4 TOOTH)


1. Blades are reversible: when one side is no longer sharp, the blade can be turned over and used on the other side (Fig. 17).
2. Blades are sharpened using a flat single-cut file (Fig. 17).
3. To maintain the correct balance, file all cutting edges uniformly.
4. If the blades are not sharpened correctly, this can set up abnormal vibrations in the machine and cause the blades themselves to break ultimately.


BLADE SHARPENING (8 TOOTH)

Always check the general condition of the blade. Correct sharpening permits the maximum performance of the brush cutter. To sharpen the teeth, use a file or grindstone and proceed with light touches, respecting the corners and the dimensions shown in Fig. 11.

SHARPENING THE SAW BLADE

- See the cutting attachment packaging for correct sharpening instructions.
A correctly sharpened blade is essential for working efficiently and to avoid unnecessary wear to the blade and clearing saw.
- Make sure that the blade is well supported when you file it. Use a 5.5 mm round file.
- The filing angle is 15°. File alternate teeth to the right and those in between to the left. If the blade has been heavily pitted by stones it may be necessary to dress the top edges of the teeth with a flat file, in exceptional cases. If so, this should be done before filing with a round file. The top edges must be filed down by the same amount for all the teeth.

 **WARNING!** – The wrong type of cutter or an incorrectly sharpened blade will increase the risk of kickback. Check mower blades for deterioration or cracks, and replace if damaged.

 **WARNING:** Never repair damaged cutting attachments by welding, straightening or modifying the shape. This may cause parts of the cutting tool to come off and result in serious or fatal injuries.


NYLON LINE HEAD

Only use line of the same diameter as the original to avoid overloading the engine (Fig. 18). In order to get more line out of the cutting head, tap it lightly on the ground while working.

Note: Never hit the nylon head against hard spots such as concrete or stones, it could be dangerous.

Replacing the nylon line on the LOAD&GO trimmer head (Fig.19)

1. Cut 6.0 m of nylon line Ø 3.0 mm.
2. Align the arrows and insert the line into the trimmer head (Fig. 19.1) until it is released from the opposite side (Fig. 19.2).
3. Divide the line into two equal parts (Fig. 19.3) and then load the trimmer head by turning the knob (Fig. 19.4).

 **WARNING!** – Always wear protective gloves during maintenance operations. Do not carry out maintenance with the engine hot.

Never use fuel for cleaning operations.

AIR FILTER

Every 8-10 working hours, remove the cover (A, Fig. 22), clean the filter (B).

Blow with compressed air, at a distance.

Replace if dirty or damaged. The engine runs irregularly if the filter is clogged, with consequent higher consumption and lower performance.

FUEL FILTER

Check fuel filter periodically. A dirty filter can cause difficult starting and lower engine performance.

To clean filter proceed as follows: remove it from fuel filling hole. Replace it (Fig. 21) if too dirty.

ENGINE

Clean cylinder fins with a brush or compressed air periodically. Dangerous overheating of engine may occur due to impurities on the cylinder.

SPARK PLUG

Clean spark plug and check electrode distance periodically (Fig. 23). Use Champion NGK BPMR7A or of other brand with the same thermal grade.

GEAR HOUSING

Every 30 working hours, remove screw (D, Fig. 8) on the gear housing and check the quantity of grease. Do not use more than 10 grams. Use high quality molybdenum bisulfide grease.

TRASMISSION


Grease the joints of the rigid tube (D, Fig. 25) every 30 working hours with molybdenum disulfide.

CARBURETOR

Before adjusting the carburetor, clean the air filter (B, Fig. 22) and warm up the engine. This engine is designed and manufactured in order to comply with the applicable 97/68/EC, 2002/88/EC and 2004/26/EC Directive.


Idle screw T (Fig. 20) is adjusted in order to ensure a good safety margin between idle running and clutch engagement.


 **WARNING: Don't tamper the carburetor.**


 **WARNING: With the engine idling (2800 rpm), the blade should not rotate. We recommend that you have your nearest authorised dealer or service workshop carry out any carburettor adjustments.**

 **WARNING: Weather conditions and altitude may affect carburation.**


MUFFLER

 **WARNING!** - This muffler is fitted with a catalytic converter needed for the engine to be in compliance with the emissions requirements. Never modify or remove the catalytic converter: failure to do so is a violation of law.

 **WARNING!** - Mufflers fitted with catalytic converters get very hot during use and remain so for some time after stopping. This also applies at idlespeed. Contact can result in burns to the skin. Remember the risk of fire!

 **CAUTION!** - If the muffler is damaged, it must be replaced. If the muffler frequently

becomes blocked, this could be an indication that the efficiency of the catalytic converter is limited.


 **WARNING: Do not operate your brush cutter if the muffler is damaged, missing or modified. An improperly maintained muffler will increase the risk of fire and hearing loss.**

EXTRA MAINTANANCE ADVISABLE

It is advisable to inspect the machine by a specialized technician at an authorized service network at the end of season, if used intensively, and every two years if with normal use.

 **ATTENTION: All maintenance operations not reported in this manual must be carried out by an authorized Service Center.**

To ensure steady and regular brush cutter operation, remember that parts must only be replaced with **ORIGINAL SPARES**.

 **Any unauthorized changes and/or use of non-original replacement parts may result in serious injury or death to the operator or third parties.**

10. STORAGE

If the machine is to be stored for long periods:

- Drain and clean the fuel tank in a well-ventilated area. To drain the tank, start the engine and wait until the fuel is exhausted and the engine stops (leaving fuel mixture in the carburettor could damage the membranes).
- The procedures for returning the machine to service following winter storage are the same as for starting up during everyday use (page 26).
- Follow all the maintenance regulations previously described.
- Clean the brush cutter completely and lubricate the metallic parts.
- Remove, clean and lubricate the blade to prevent rusting.
- Remove the blade fixing flanges, clean, dry and lubricate the bevel gear seat.
- Empty the fuel tank and put the cap back on.
- Thoroughly clean the cooling slots and the air filter (B, Fig. 22).

- Store the brush cutter in a dry place, preferably not in direct contact with the floor and away from heat sources.

11. ENVIRONMENTAL PROTECTION

Environmental protection should be a priority of considerable importance when using the machine, for the benefit of both social cohesion and the environment in which we live.

- Try not to cause any disturbance to the surrounding area.
- Scrupulously comply with local regulations and provisions for the disposal of waste materials after mowing.
- Scrupulously comply with local regulations and provisions for the disposal of oils, petrol, batteries, filters, deteriorated parts or any elements which have a strong impact on the environment. This waste must not be disposed of as normal waste, it must be separated and taken to specified waste disposal centres where the material will be recycled.

Demolition and disposal



When the machine reaches the end of its service life, do not dispose of it into the environment; instead take it to a waste disposal centre.

Most materials used in the manufacture of the machine are recyclable; all metals (steel, aluminium, brass) can be delivered to a normal recycling station. For information contact your local waste recycling service. Waste disposal must be carried out with respect for the environment, avoiding soil, air and water pollution.

In all cases, applicable local legislation must be complied with.

When the machine is scrapped also the CE mark label must be destroyed together with this manual.

12. TECHNICAL DATA

		SPARTA 381S STARK 3810S	SPARTA 381T STARK 3810T	SPARTA 441S STARK 4410S	SPARTA 441T STARK 4410T
Displacement	cm ³	36.2		40.2	
Engine		2 stroke EMAK			
Power	kW	1.3		1.6	
Min. rpm	min ⁻¹	2800			
Maximum speed of output spindle	min ⁻¹	8.500			
Engine speed at maximum output spindle speed	min ⁻¹	11.700			
Fuel tank capacity  + 	cm ³	870 (0.87 l)			
Primer carburetor		Yes			
Antivibration system		Yes			
Cutting width	cm	38			
Weight without cutting tool and guard	kg	7.2	7.9	7.3	8.0









Recommended cutting attachments

Model	Cutting attachments		Guards	
STARK 3810-4410 SPARTA 381-441		P.N. 63129003	P.N. 4192048CR	
		P.N. 63129004	P.N. 61042011CR	
STARK 3810-4410 SPARTA 381-441		P.N. 63019018	P.N. 4192048CR	
		P.N. 63019017	P.N. 61042011CR	
STARK 3810-4410 SPARTA 381-441		P.N. 4095673BR	P.N. 4192048CR	*
			P.N. 61042011CR	
STARK 4410T SPARTA 441T		P.N. 4095638AR	P.N. 4192048CR	*
			P.N. 61042011CR	
STARK 4410T SPARTA 441T		P.N. 4095563AR	P.N. 4192048CR	*
			P.N. 61042011CR	
STARK 4410T SPARTA 441T		P.N. 4095565AR	P.N. 4192048CR	*
		P.N. 4095065AR	P.N. 61042011CR	
STARK 4410T SPARTA 441T		P.N. 4095635AR	P.N. 4174279	
STARK 4410T SPARTA 441T		P.N. 4095066AR	P.N. 4174279	

* protection p. n. 4174283AR not needed

WARNING!!!

Using an incorrect cutting attachment increases the risk of accidents! Only use the recommended cutting attachments and guards and follow the manufacturer's sharpening instructions.

			SPARTA 381 S STARK 3810 S		SPARTA 381 T STARK 3810 T		SPARTA 441 S STARK 4410 S		SPARTA 441 T STARK 4410 T		
											
Pressure level	dB (A)	L_{PA av} EN 11806 EN 22868	98.1	96.1	98.1	96.1	99.3	97.3	99.3	97.3	*
Uncertainty	dB (A)		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Measured sound power level	dB (A)	2000/14/EC EN 22868 EN ISO 3744	111.1	108.1	111.1	108.1	112.1	109.6	112.1	109.6	
Uncertainty	dB (A)		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Guaranteed sound power level	dB (A)	L_{WA} 2000/14/EC EN 22868 EN ISO 3744	113.0	110.0	113.0	110.0	114.0	112.0	114.0	112.0	
Vibration level	m/s²	EN 11806 EN 22867 EN 12096	6.8 (sx) 5.9 (dx)	6.1 (sx) 7.2 (dx)	6.3 (sx) 7.5 (dx)	5.8 (sx) 6.6 (dx)	6.8 (sx) 5.9 (dx)	6.1 (sx) 7.2 (dx)	6.3 (sx) 7.5 (dx)	5.8 (sx) 6.6 (dx)	*
Uncertainty	m/s²	EN 12096	1.8 (sx) 1.6 (dx)	2.7 (sx) 2.8 (dx)	2.2 (sx) 1.8 (dx)	1.6 (sx) 1.6 (dx)	1.8 (sx) 1.6 (dx)	2.7 (sx) 2.8 (dx)	2.2 (sx) 1.8 (dx)	1.6 (sx) 1.6 (dx)	

* - Weighted average values: 1/2 minimum rpm, 1/2 at full load (head) or 1/2 racing (blade).

13. DECLARATION OF CONFORMITY

The undersigned, **Emak spa via Fermi, 4 - 42011 Bagnolo in Piano (RE) ITALY** declares under its own responsibility that the machine:

1. Category: brushcutter/grass trimmer
2. Brand Efcò, Type Stark 3810 S - Stark 3810 T - Stark 4410 S - Stark 4410 T
Brand Oleo-Mac, Type Sparta 381 S - Sparta 381 T - Sparta 441 S - Sparta 441 T
3. Serial ID 860 XXX 0001 ÷ 860 XXX 9999 (Stark 3810 - Sparta 381) - 861 XXX 0001 ÷ 861 XXX 9999 (Stark 4410 - Sparta 441)

conforms to the requirements of Directives: 2006/42/CE - 2000/14/CE - 2014/30/EU - 97/68/CE - 2004/26/CE, conforms to the provisions of the following harmonized standards:

EN 55012 - EN ISO 11806

Procedures for evaluation of conformity followed:

Annex V - 2000/14/CE

Measured sound power level: 111.1 dB (A) (Stark 3810 - Sparta 381) - 112.1 dB (A) (Stark 4410 - Sparta 441)

Guaranteed sound power level: 113.0 dB (A) (Stark 3810 - Sparta 381) - 114.0 dB (A) (Stark 4410 - Sparta 441)

Technical Documentation deposited with Administrative Headquarters: Technical Department

Signed in Bagnolo in Piano (RE) Italy - via Fermi, 4

Date: 01/02/2017



Fausto Bellamico - President

14. WARRANTY CERTIFICATE

This machine has been designed and manufactured using the most modern techniques. The manufacturer guarantees its products for 24 months from the date of purchase, for private and hobby use. The warranty is limited to 12 months in case of professional use.

Limited warranty

- 1) The warranty period starts on the date of purchase. The manufacturer, acting through the sales and technical assistance network, shall replace free of charge any parts proven defective in material, machining or manufacturing. The warranty does not affect the purchaser's rights as established under legislation governing the consequences of defects in the machine.
- 2) Technical personnel will undertake the necessary repairs in the minimum time possible, compatible with organisational needs.
- 3) **To make any claim under the warranty, this certificate of warranty, fully completed, bearing the dealer's stamp and accompanied by the invoice or receipt showing the date of purchase, must be displayed to the personnel authorised to approve work.**
- 4) The warranty shall be null and void if:
 - the machine has evidently not been serviced correctly

- the machine has been used for improper purposes or has been modified in any way,
- unsuitable lubricants and fuels have been used
- non-original spare parts and accessories have been fitted
- work has been done on the machine by unauthorised personnel

- 5) The warranty does not cover consumables or parts subject to normal wear.
- 6) The warranty does not cover work to update or improve the machine.
- 7) The warranty does not cover any preparation or servicing work required during the warranty period.
- 8) Damage incurred during transport must be immediately brought to the attention of the carrier: failure to do so shall render the warranty null and void.
- 9) Engines of other manufacturers (Briggs & Stratton, Subaru, Honda, Kipor, Lombardini, Kohler, etc.) fitted to our machines are covered by the warranties of the engine manufacturer.
- 10) The warranty does not cover injury or damage caused directly or indirectly to persons or things by defects in the machine or by periods of extended disuse of the machine resulting from the said defects.

MODEL _____

SERIAL No _____

BOUGHT BY Mr. _____

DATE _____

DEALER

Do not send! Only attach to requests for technical warranties.

15. TROUBLESHOOTING



WARNING: Always stop unit and disconnect spark plug before performing all of the recommended remedies below except remedies that require operation of the unit.

GB

When all the possible causes have been checked and the problem is not resolved, consult an Authorised Service Centre. If a problem occurs that is not listed in this table, consult an Authorised Service Centre.

PROBLEM	POSSIBLE CAUSES	SOLUTION
Engine will not start or will run only a few seconds after starting.	<ol style="list-style-type: none"> 1. No spark 2. Flooded engine. 	<ol style="list-style-type: none"> 1. Watch for spark at spark plug tip. If there is no spark, repeat test with a new spark plug (BPMR7A). 2. Follow procedure page 28. If engine still fails to start, repeat procedure with a new spark plug.
Engine starts but will not accelerate properly or will not run properly at high speed.	Carburetor requires adjustment.	Contact a Servicing Dealer for carburetor adjustment.
Engine does not reach full speed and / or emits excessive smoke	<ol style="list-style-type: none"> 1. Check oil fuel mixture. 2. Air filter dirty. 3. Carburetor requires adjustment. 	<ol style="list-style-type: none"> 1. Use fresh fuel and the correct 2-cycle oil mix. 2. Clean per instruction in Maintenance-Air Filter Section. 3. Contact a Servicing Dealer for carburetor adjustment.
Engine starts, runs and accelerates but will not idle.	Carburetor requires adjustment.	Turn idle speed screw " T " (Fig. 20) clockwise to increase idle speed. See Operation-Carburetor Adjustment.
Engine starts and runs, but cutting attachment is not rotating WARNING: Never touch the cutting attachment while the engine is running.	Clutch, bevel drive or transmission shaft damaged	Replace if necessary - contact a Servicing Dealer.



WARNING: Do not attempt to carry out repairs without the necessary repairs and technical expertise. Poorly executed repairs will automatically invalidate the warranty and relieve the manufacturer of all liability.