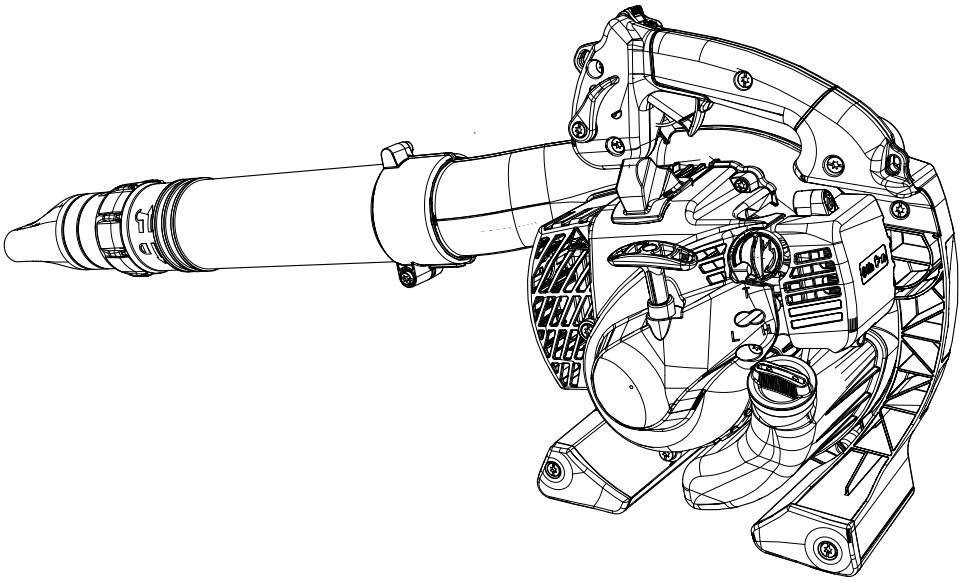
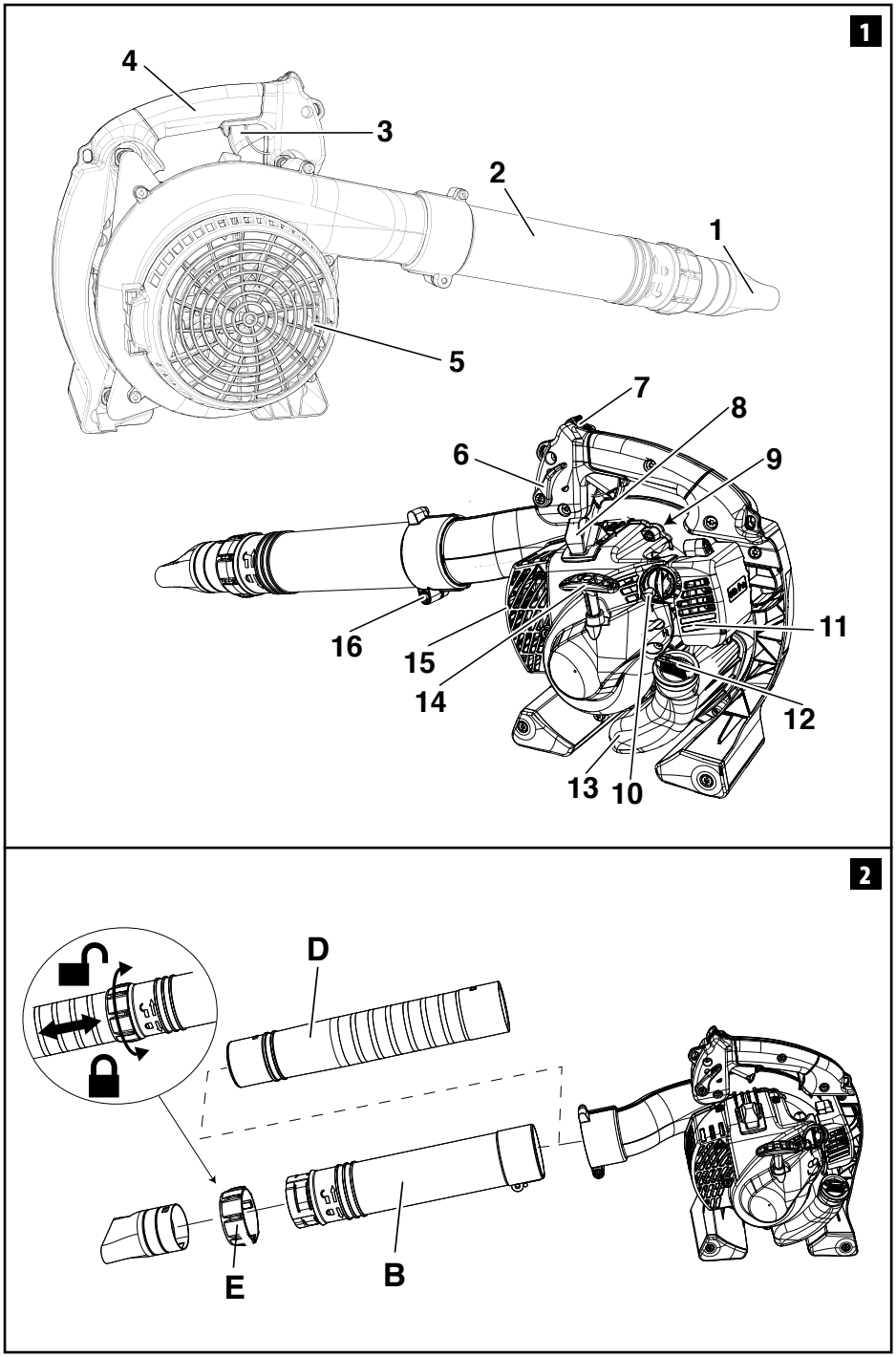
# BV 250 - SA 2500 (25.4 cm³)

| | |
|---|---|
| I | MANUALE DI USO E MANUTENZIONE |
| GB | OPERATOR'S INSTRUCTION BOOK |
| F | MANUEL D'UTILISATION ET D'ENTRETIEN |
| D | BEDIENUNGSANLEITUNG |
| E | MANUAL DE INSTRUCCIONES |
| P | MANUAL DE INSTRUÇÕES |
| GR | ΕΓΧΕΙΡΙΔΙΟ ΧΡΗΣΗΣ ΚΑΙ ΣΥΝΤΗΡΗΣΗΣ |
| CZ | NÁVOD K POUŽITÍ A ÚDRŽBĚ |
| SK | NÁVOD NA POUŽITIE A ÚDRŽBU |
| RUS | РУКОВОДСТВО ПО ЭКСПЛУАТАЦИИ |
| UA | ПЕРЕКЛАД ОРИГІНАЛЬНИХ ІНСТРУКЦІЙ ВСТУП |
| PL | INSTRUKCJA OBSŁUGI I KONSERWACJI |

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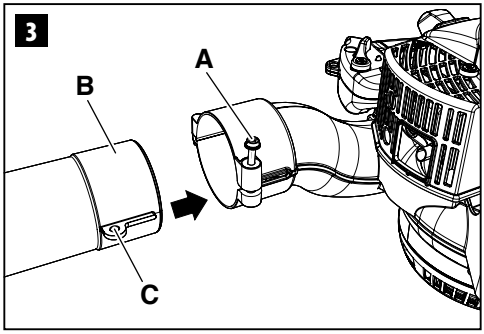
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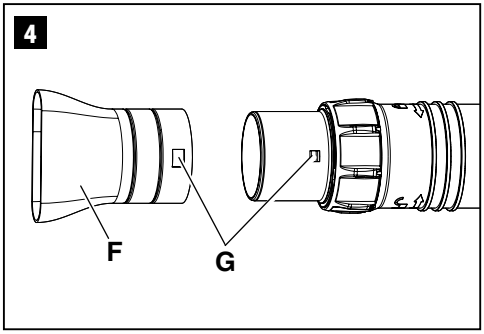
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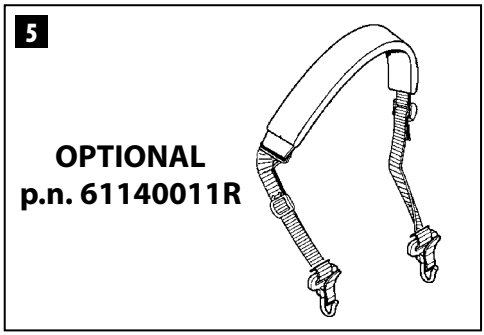
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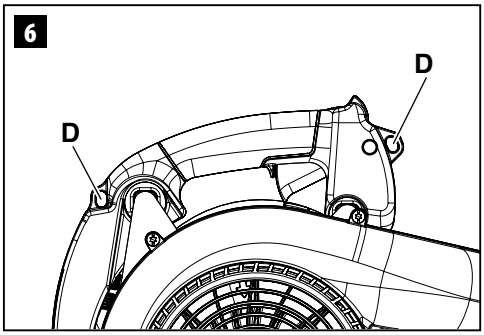
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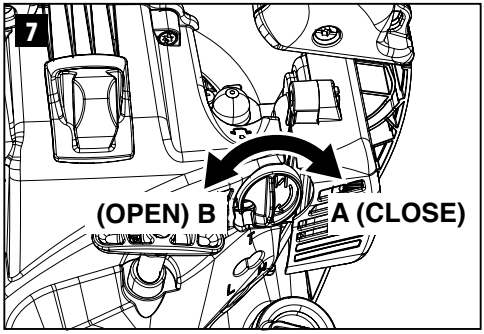
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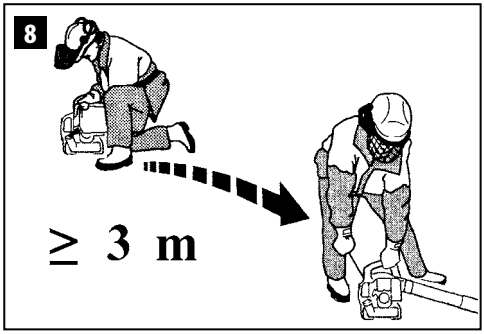
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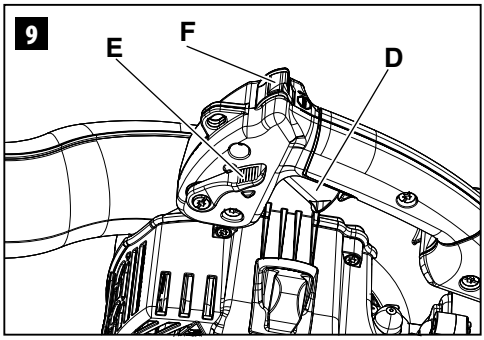
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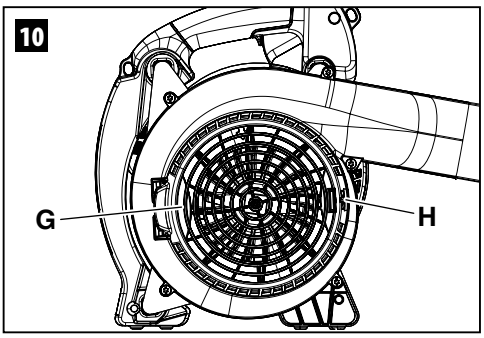
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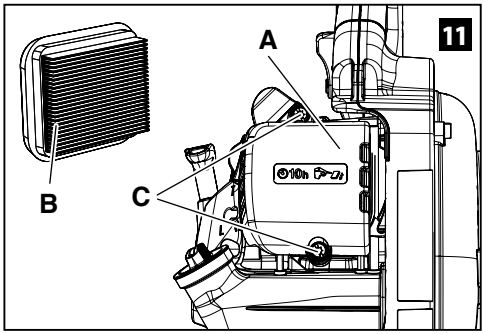
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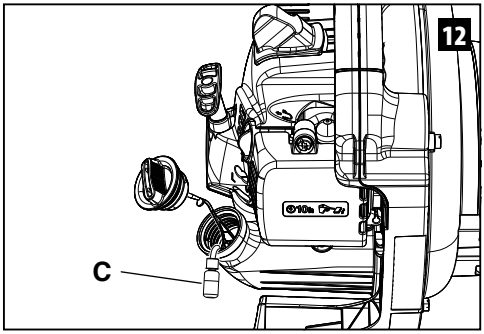
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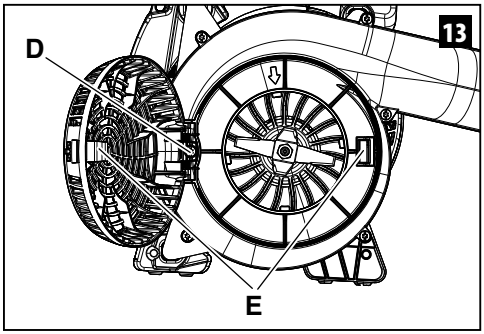
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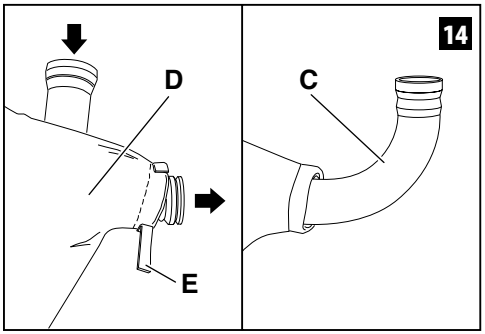
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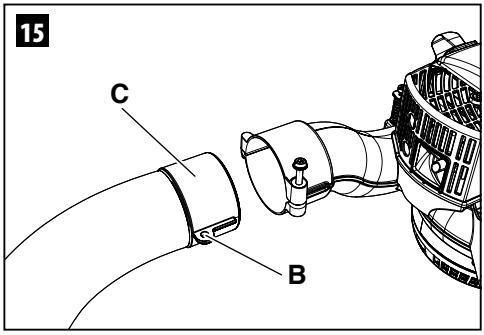
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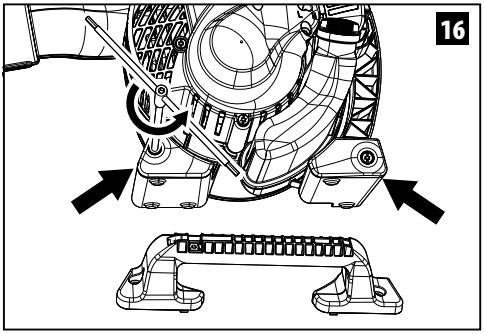
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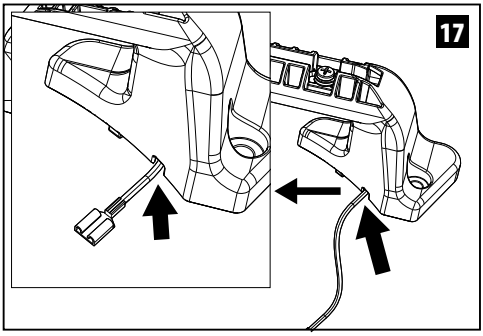
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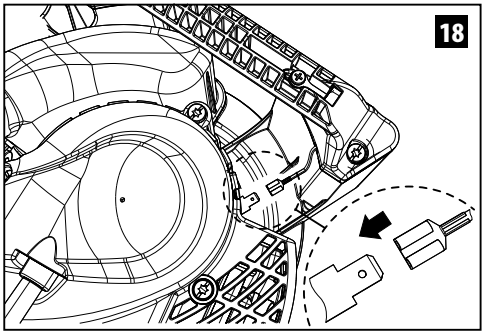
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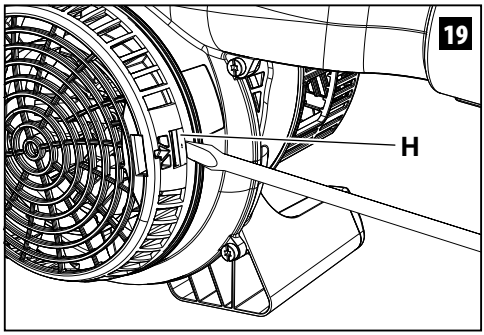
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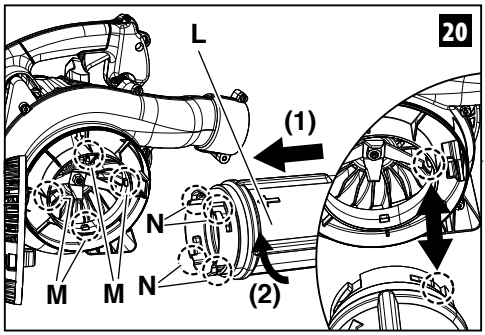
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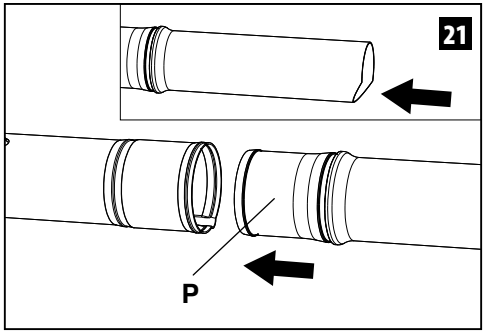
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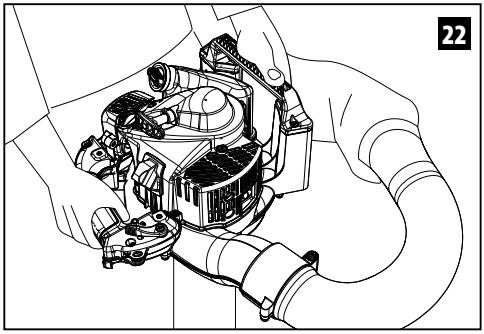
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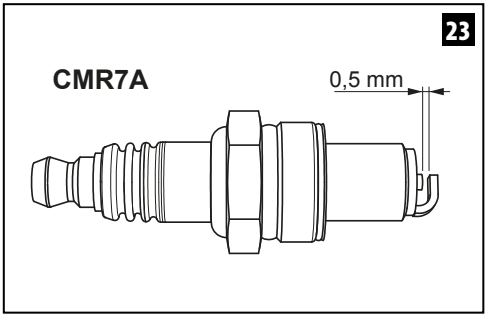
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**TRANSLATION OF ORIGINAL INSTRUCTIONS**

**To our valued customers**

Thank you for selecting an Emak product.
Our network of dealers and authorized workshops will always be at your complete disposal for any need you may have.

**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**

⚠ **WARNING – The blower, 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 handbook.**

⚠ **WARNING: 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 could limit 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 blower must only be used by adults in good physical condition who are familiar with the operating instructions.
3. Do not operate the blower when tired or fatigued or under the effect of alcohol and drugs.
4. Always wear gloves, safety glasses and hearing protectors. Do not wear scarves, bracelets or any other items that could get caught up in the impeller.
5. Do not allow other persons or animals near when starting or using the blower.
6. Always work from a safe, stable position.
7. Do not direct the air jet towards people or animals.
8. Only use the blower in well-ventilated areas. Do not use in explosive atmospheres, in enclosed areas or near inflammable substances.
9. Check the blower daily to ensure that all safety and other devices are working properly.
10. Long hair should be worn securely tied up (e.g. in a hair net).
11. Do not use a blower that has been damaged, badly repaired, improperly assembled or modified. Do not attempt to remove or bypass any of the safety devices.
12. Retain this manual and consult it before using the blower.
13. Always follow the care and maintenance instructions.
14. Do not attempt to carry out any servicing or repairs other than normal maintenance yourself. Contact your authorised service centre.
15. All labels with health hazards must be kept in good conditions. In case of damage or deterioration, immediately substitute them (Fig. 19).
16. Do not utilize the machine for uses different from the ones specified in the manual (see pag. 25).
17. Never leave the machine unattended with the engine running.
18. It is prohibited to fit an impeller other than that supplied by the manufacturer. The use of other accessories could increase the risk of injury and is prohibited. Do not fit the impeller to other engines or transmissions.
19. When disposing of an old blower 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.
20. Only experienced persons who are familiar with the operation and safe use of this machine should use the blower. If you lend the blower to someone, also give them the instruction manual and ensure that they read it before using the machine.
21. Do not use the blower near electrical equipment.
22. Do not obstruct the air intake of the impeller.
23. Keep your hands away from the impeller when the engine is running.
24. Please note that the owner or the user is responsible for any accidents or damage to third parties or their property.
25. All saw service, other than the operations shown in the present manual, should be performed by competent personnel.
26. Do not hit or force the blades of the impeller; do not use a blower with a damaged impeller.
27. Do not aspirate large objects that could obstruct or damage the impeller.

⚠ **Except where specifically indicated (with the wording "VACUUM MACHINE") the instructions in the operator's manual refer to both the blower and vacuum configurations.**

**SAFETY PROTECTIVE CLOTHING**

⚠ **While working with the blower, always use safety protective approved clothing.** The use of protective clothing does not eliminate injury risks, but reduces the injury effects in case of accident. Consult your trusted supplier to choose an adequate equipment.

The clothing must be proper and not an obstacle. Wear adherent protective clothing. **Protective jackets and dungarees are ideal.**
Do not wear clothes, scarfs, ties or bracelets that

can stuck into twigs. Tie up and protect long hair (example with foulards, caps, helmets, etc.).

**Safety shoes having skid-proof sole and anti-piercing insert.**

**Wear protective goggles or face screens!**

**Use protections against noises; for example noise reduction ear guards or earplugs.** The use of protections for the ear requests much more attention and caution, because the perception of danger audio signals (screamings, alarms, etc.) is limited.

**Wear gloves that permit the maximum absorption of vibrations.**

**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. **WARNING -** The blower may throw objects at high velocity that can ricochet and hit the operator. This may cause serious eye damage.
4. Type of machine: **BLOWER**.
5. Guaranteed sound power level.
6. CE conformity marking.
7. Serial number.
8. Year of manufacture.
9. **WARNING!** Danger of finger amputation.
10. **WARNING!** The surface can be hot!.
11. The blower operator must make sure that no bystanders or animals come nearer than 35 feet (10 metres). Whenever several operators are working in the same work area, they should maintain a safe distance of at least 35 feet (10 metres) from one another.
12. Noise pressure level measured at 50 feet (15 metres) distance according to ANSI B175.2-2012.

**3. MAIN COMPONENTS (Fig.1)**

1. Nozzle
2. Blower tube
3. Throttle trigger
4. Handle
5. Safety guard
6. Throttle limiter
7. **STOP** button
8. Spark plug
9. Primer bulb
10. Choke lever
11. Air cleaner cover
12. Fuel tank cap
13. Fuel tank
14. Starting handle
15. Muffler
16. Tube securing screw

**4. ASSEMBLY**

The machine is supplied ready for use in the blower version.
The kit, supplied separately as an optional accessory, allows the machine to be used as a vacuum / shredder (see chapter 12.).

**Assembling the tubes**

**WARNING – When fitting the tube and nozzle, the engine must be off.**

1. Undo the screw (A, Fig.3), to be able to insert the eyelet (C) of the pipe (B) into the appropriate housing. Tighten the screw (A), to lock the pipe (B).
2. To pull out the extension tube (D, Fig.2) from inside the blower tube (B), twist the collar (E) in the "padlock open" direction, and the tube (C) can then be drawn out. Once the extension is at the desired length, twist the collar (E) back toward the "padlock closed" position to lock the two tubes together.
3. To increase the directional and power characteristic of the stream of air, the nozzle can be mounted (F, Fig.4). The nozzle must be inserted on the extension pipe (D, Fig.2), locking it in the two hooks (G, Fig.4).

**WARNING: inside the extension pipe (D, Fig.2) there is an anti-intrusion safety grid. It is not possible to use the blower without the**

**pipe (D), so as to avoid the risk of amputating hands and fingers accidentally inserted inside the pipe.**

**HARNESS**

**OPTIONAL –** For increased operator comfort, a single harness is available (Fig.5), p/n 61140011R, which can be purchased separately. Attach the snap hooks to the loops on the handle (D, Fig.6).

**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.
- Never use fuel for cleaning operations.
- Take care not to get fuel on your clothing

| 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) |

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. Were commend 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.

**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.**

**START-UP PROCEDURE**

Check that the throttle trigger (D, Fig. 9) functions correctly and the throttle stop (E) is set to the minimum position.

1. Slowly push the purge bulb 6 times (C, Fig.7).
2. Pull the choke lever (12, Fig.1) in the CLOSE position (A, Fig.7). In so doing, it also activates automatically half-throttle.
3. Lay the machine on the ground in a stable position. Holding the tool with one hand (Fig.8) pull the starter rope (no more than 3 times) until you hear the engine start to fire. A new unit may require additional pulls.
4. Push the choke lever (12, Fig.1) in OPEN position (B, Fig.7).
5. 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 (3, Fig.1) for deactivate the automatic half-throttle.

**WARNING: Once the engine is warmed up do not use the starter (10, Fig.1) to start up again.**

**WARNING: Never start the blower without the impeller fitted.** This could cause serious damage to the engine and would lead to the immediate invalidation of the warranty.

**Procedure in the case of a flooded engine**

- 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.

**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.**

**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**

Move the throttle trigger (D, Fig.9) and the throttle stop (E) to the minimum positions.
Turn off the engine, pushing the STOP button (F, Fig.9).

**7. USING THE MACHINE**

**PROHIBITED USE**

- Work only in conditions offering sufficient visibility and light to see clearly.
- Stop the engine before setting the machine down.
- Be particularly cautious and alert when wearing ear protectors, as these can restrict your ability to hear sounds indicating danger (shouts, signals, warnings, etc.)
- Be extremely careful when working on slopes or uneven surfaces.
- Always keep the handles dry and clean.
- **Do not operate the blower while standing on a ladder or a stand.**
- **Never attempt to blow hot or burning substances or combustible fluids.**
- Do not walk backward while operating the machine.
- Operate the blower only at reasonable hours, i.e. not early in the morning or late at night when people might be disturbed. Comply with times listed in local ordinances.
- Check wind direction and intensity. Never point the nozzle or blow debris toward people, pets, cars or houses.
- Do not blow debris toward open windows or doors.
- Always be considerate of property and people passing by.
- Do not leave the blower running when unattended.
- Pay attention to what you are moving.
- Practice moving grass clippings or a paper cup without moving dust.
- Wet dusty areas down first before using a blower.
- Never use a leaf blower to move excessively dusty materials.
- Never direct the air jet towards people or animals. The blower can propel small objects at very high speed. Stop the engine immediately if you are approached.
- A leaf blower should **NOT** be used to clean up:
  - Large amounts of gravel or gravel dust
  - Construction dirt
  - Plaster dust
  - Cement and concrete dust
  - Dry garden topsoil
- Do not use a blower to spread or mist fertilizers, chemicals or other toxic substances, fuel, unless it is designed for these purposes and in an appropriate area.
- If the substance being blown is a commercial substance, review the material safety data sheet for that substance or consult the material manufacturer.

⚠ **WARNING! – Silica is a basic component of sand, quartz, brick, clay, granite and numerous other materials and rock, including masonry and concrete products. Repeated and / or substantial inhalation of airborne crystalline silica can cause serious or fatal respiratory disease, including silicosis. When**

**encountering such materials, always follow the respiratory precautions mentioned above.**

**⚠ WARNING! – Breathing asbestos dust is dangerous and can cause severe or fatal injury, respiratory illness or cancer. The use and disposal of asbestos-based products have been strictly regulated. Do not blow or disturb asbestos or asbestos-based products, such as asbestos insulation. If you have any reason to believe that you might be disturbing asbestos, immediately contact your employer or local health authority representative.**

**Preparation for Working**

**⚠ WARNING: - Always follow the safety precautions. Carefully plan your blowing operation in advance. Do not start blowing until you have a clear work area and secure footing.**

**⚠ WARNING - The blower may throw objects at high velocity that can ricochet and hit the operator. This may cause serious eye damage. Always wear eye protection.**

**⚠ 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.**

- Check the condition of the blower before operation, especially the muffler, air intake and air filter.
- Under dusty conditions, slightly spray the work area with a hose or use a mister attachment when water is available.
- Watch out for children, pets, open windows or cars, and blow debris safely away.
- Use the full nozzle extension so the air stream can work close to the ground.
- After using the blower, clean up and dispose of debris in trash receptacles.
- Use the lowest possible throttle speed to do the job.
- The throttle stop (E, Fig. 9) is used to set different engine speeds and consequently to adjust the air jet. Before switching off the engine, move the throttle stop to the minimum position.

**⚠ WARNING! - When working with the blower, wear the required protecting equipment:**

1. **Hearing protection.**
2. **Eye protection.**
3. **Face mask in dusty environments.**

**You can use a leaf blower to:**

- Remove and gather leaves. To remove rubbish or grass cuttings from roads, footpaths, parks, car parks, outhouses and sports grounds, etc.
- Remove grass clippings
- Dislodge or break up matted grass
- Clean car parks
- Clean farm and construction equipment
- Clean arenas and amusement parks
- Remove light or fluffy snow
- Dry off pavement and outdoor areas
- To remove rubbish from corners, round connections, and between paving stones, etc.

**⚠ WARNIG - When working inside corners, blow from the corner and inward toward the centre of the work area.**

The blower is designed to be used with one hand only, and can be held in either the left or right hand.

**⚠ WARNING –** Always check that the safety guard (G, Fig.10) is properly closed with the catch (H) securely locked. Risk of finger injury or amputation.

## 8. MAINTENANCE

### MAINTENANCE CHART

| 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 the suggested intervals should be shortened accordingly. | | Before Each Use | After Each Refueling Stop | Weehly | If Damaged or Faulty | As Required |
|---|---|---|---|---|---|---|
| Complete Machine | Inspect (Leaks, Cracks, and Wear) | X | X | | | |
| Controls (Ignition Switch, Choke Lever, Throttle Trigger, Trigger Interlock) | Check Operation | X | X | | | |
| Fuel Tank | Inspect (Leaks, Cracks, and Wear) | X | X | | | |
| Fuel Filter | Inspect and Clean | | | X | | |
| | Replace Filter Element | | | | X | Every 6 Months |
| All Accessible Screws and Nuts (not Adjusting Screws) | Inspect - Retighten | | | X | | |
| Air Filter | Clean | X | | | | |
| | Replace | | | | X | Every 6 Months |
| Cylinder Fins and Starter System Vents | Clean | | | X | | |
| Starter Rope | Inspect (Damage, and Wear) | | | X | | |
| | Replace | | | | X | |
| Carburetor | Check Idle | X | X | | | |
| Spark Plug | Check Electrode Gap | | | X | | |
| | Replace | | | | X | Every 6 Months |
| Vibration Mounts | Inspect (Damage and Wear) | | | X | | |

**EMISSIONS COMPLIANCE**

This engine, including the emissions control system, must be operated, used and maintained in accordance with the instructions provided in the user's manual in order to maintain the emissions performance within the legal requirements applicable to non-road mobile machinery.

No deliberate tampering with or misuse of the engine emissions control system has to take place.

Incorrect operation, use or maintenance of the engine or of the non-road mobile machinery could result in possible malfunctions of the emissions control system to a point where the legal requirements applicable are not respected; in such case a prompt action must be taken in order to rectify the system's malfunctions and restore the applicable requirements.

Examples, not exhaustive, of incorrect operation, use or maintenance are:

- Forcing or breaking the devices for metering the fuel;
- Use of fuel and/or engine oil not fulfilling the characteristics shown in the chapter STARTER / FUELING;
- Use of not original spare parts, for example spark plug, etc. ;
- Missing or improper maintenance of the exhaust system, including incorrect timing of maintenance for muffler, spark plug, air filter, etc.

⚠ **WARNING! – Tampering with this engine makes the EU emissions certification no more valid .**

The level of CO2 of this engine can be found in the Emak's website (www.myemak.com) under section "The Outdoor Power Equipment World".

⚠ **WARNING! – Always wear protective gloves during maintenance operations. Do not carry out maintenance with the engine hot. Never carry out maintenance operations with the engine running.**

- Non-correct maintenance and removal of safety devices could cause serious injuries.
- Do not use fuel mixture for cleaning operations.
- Do not attempt to carry out operations or repairs that are not part of the normal maintenance. See the authorised dealer.

**AIR FILTER**

In the event of a significant decrease in engine power, open the cover (A, Fig.11) and check the air filter (B). To clean the air filter, refer to Fig.11 and proceed as follows:

- Undo the two screws (C) to remove the cover and access the filter.
- Replace it if clogged or damaged. Before fitting the new filter, remove coarse dirt from inside the cover and from the area around the filter.
- Refit the filter (B) and close the cover (A), tightening the two screws (C).

⚠ **CAUTION** – Using the blower without the air filter or with a very dirty air filter can damage the engine and will invalidate the warranty.

**FUEL FILTER (Fig. 12)**

We recommend changing the fuel filter in the fuel tank at least once a year. This operation must be carried out by an Authorized Service Centre:

- Empty the fuel tank.
- Extract the filter and disconnect it from the fuel hose.
- Fit a new filter in the fuel hose.
- Re-insert the filter in the fuel tank.

⚠ **CAUTION** – Failure to replace the fuel filter when it is dirty will result in impaired operation of the engine.

**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 NGK CMR7A or of other brand with the same thermal grade.

**SAFETY GUARD**
Check that the spring (D, Fig.13) and the catch (E) are in perfect working order. These components ensure that the safety guard is properly closed.

Following prolonged use of the blower a large amount of dust may be deposited on the fan casing. This obstructs the air flow (reduced volume) and can result in damage to the fan and/or overheating of the engine. For this reason, be sure to clean the fan casing regularly.

**STARTER ASSEMBLY**

⚠ **WARNING:** The coil spring is tensioned and could fly out if released, causing serious injury. Never attempt to disassemble or modify the spring.

**CARBURETOR**
The carburettor is factory adjusted to standard settings that comply with emissions regulations.

⚠ **WARNING:**
- **Do not change the carburettor settings by tightening or loosening the regulator screws; this operation must be performed by qualified personnel at an Authorized Service Centre.**
- **Incorrect adjustment of the carburettor can cause serious damage to the engine.**
- **Furthermore, do not tamper with or remove the red protective caps on the carburettor regulator screws.**

In the case of problems (engine dies when idling, irregular engine speed or failure to reach maximum power) seek the assistance of an Authorized Service Centre.

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

**MUFFLER**

⚠ **WARNING –** This muffler incorporates a catalytic converter, needed in order to ensure the engine complies with current emissions standards. Never attempt to modify or remove the catalytic converter: in doing so, you will be breaking the law.

⚠ **WARNING – Mufflers with catalytic converters become very hot during operation, and retain heat for a long time after the engine has been stopped. This is the case even with the engine idling. Contact can burn the skin. Always remember the potential fire risk!**

⚠ **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 machine if the muffler is damaged, missing or modified. Operating the machine with 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 blower 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.**

**9. TRANSPORTATION**
Only transport the blower with the engine switched off.

⚠ **WARNING -** When transporting the machine on a vehicle, ensure that it is firmly and securely fastened using straps or belts. The machine must be transported in the vertical position with an empty tank, also ensuring compliance with applicable transport regulations for such machines.

**10. STORAGE**

If the machine is to be stored for long periods:

- Drain the fuel from the tank.
- Start the engine and run it at low speed until it runs out of fuel and stops.
- Clean the tank thoroughly.
- Clean the machine thoroughly and remove any debris and dirt (encrusted dust, grass, etc.).
- Smear a thin film of oil on all metal parts to prevent corrosion.
- Store the machine and its accessories in a cool, dry place where it is not accessible by children, well clear of unprotected heat sources and corrosive substances such as garden chemical products.

Before using the machine after a prolonged period of disuse check all the seals and the carburettor; we recommend having this procedure carried out by an Authorized Service Centre.

⚠ **CAUTION** – Store the machine in a place where it is protected from direct sunlight entering through windows to avoid damage of any of its plastic parts. Do not use leftover mixture that is more than one month old, otherwise the engine may be seriously damaged and the warranty will be invalidated.

**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. VACUUM / SHREDDER VERSION**

**ASSEMBLY**

**Optional vacuum / shredder kit:**

1. Vacuum tube (in two pieces)
2. Bag intake tube
3. Bag
4. Handle

⚠ **WARNING -** When fitting the vacuum tubes, intake tube and bag, the engine must be off.

**PREPARATION**

- To mount the handle (F, Fig.16), the two caps (G) must be removed by undoing the two screws. When assembling the handle (F) it is necessary to insert the cable (H, Fig.17) in the appropriate slot, to prevent it from being pinched. After securing the handle with the two screws, connect the cable connector (Q, Fig.18) to the appropriate reed valve (R) of the machine.
- Insert the intake tube (C, Fig. 14) into the bag (D) up to the end of the tapered part of the tube and secure with the Velcro strap (E). Position the bag at the end of the tube, for greater convenience when using the machine.
- Undo the screw (A, Fig.15), to be able to insert the eyelet (C) of the manifold (B) into the appropriate housing. Tighten the screw (A), to lock the manifold (B).
- Open the safety guard, using a screwdriver to ease back the catch (H, Fig.19) retaining the guard in the closed position. Insert the vacuum tube (L, Fig. 20), engaging the four pins (M) on the impeller housing with the four slots (N) in the vacuum tube. Rotate the tube in the direction of the arrow (2) to lock. Push fit the end section of the vacuum tube (P, Fig. 21), ensuring that the chamfer on the edge of the tube is facing downwards.

**WARNING -** Before starting up the machine, make certain the vacuum tube is fitted correctly.

**WARNING –** Never start up the blower if the safety guard (G, Fig.10) is open, damaged or cannot be closed properly, except when the vacuum tube is fitted.

**WARNING –** Always check that the bag is intact and that the zip is fastened, before starting the machine. Never use the machine with a damaged bag. Risk of injury caused by flying debris.

**WARNING –** Avoid any direct contact of body parts with the exhaust outlet of the muffler.

**USE**

**WARNING –** Always take hold of the machine firmly with both hands.

The vacuum is designed to be held in both hands (Fig. 22), with the right hand on the control grip and the left hand on the grip on the housing . This applies for right-handed and left-handed users alike.
Sling the collection bag over the right shoulder and insert the left arm. The collection bag must always be fitted when the machine is used as a vacuum.
The large diameter vacuum tube is able to pick up large leaves, as well as fragments of cardboard and tree bark.

**Take care** not to vacuum up larger objects (wood, tin cans, lengths of string or tape) that could obstruct or damage the blades of the impeller.

**Take care** when vacuuming **wet leaves**, as these could clog the impeller.

**Take care** not to block the vacuum tube as this could result in over-revving and damage the engine.

**CAUTION –** Do not drag the end of the vacuum tube along the ground.

**CAUTION –** Do not vacuum up abrasive materials, such as sand or gravel, that could swiftly degrade the impeller.

**WARNING –** Never vacuum up hot or burning substances, or liquid fuels. Do not use the vacuum for inflammable liquids or toxic substances (e.g. fuel) or even materials that are impregnated with such substances. This could cause **fatal burns or explosion!**

**CAUTION –** When vacuuming, abnormal noises or fluctuations in engine rpm could indicate a blockage internally of the machine. Switch off the engine immediately, disconnect the vacuum tube and check whether or not the internal ducts are obstructed by debris.

**MAINTENANCE**

**IMPELLER HOUSING –** Periodically clean the inside of the impeller housing to remove dirt and debris that could otherwise impair the performance of the machine.

**IMPELLER –** Check that the blades are clean and undamaged to prevent reduced air flow and increased vibration. If the impeller blades are damaged, contact your **authorised service centre** immediately.

**COLLECTION BAG -** Must be washed periodically to maintain good suction and filling**.** Check the integrity of the bag and make certain the zips work smoothly. Replace if necessary.

**For other maintenance operations see chapter 8 on page 26.**

## 13. TECHNICAL DATA

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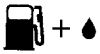
| | | |
|---|---|---|
| Displacement | $cm^3$ | 25.4 |
| Engine | | 2 stroke |
| Power | kW | 1.0 |
| Fuel tank capacity  | $cm^3$ | 450 (0,45 ℓ) |
| Primer carburetor | | Yes |
| Antivibration system | | Yes |
| Weight | kg | 3.7 |
| Blower air flow | $m^3/h$ | 720 |
| Maximum air speed | m/s | 70 |
| Vacuum air flow | $m^3/h$ | 770 |
| Vacuum collection bag capacity | ℓ | 36 |

| | | | | |
|---|---|---|---|---|
| Pressure level | dB (A) | ANSI B175.2/2012 | 73.0 | |
| Pressure level | dB (A) | $L_{PA}$ av EN15503 EN 22868 | 96.5 | * |
| Uncertainty | dB (A) | | 2.0 | |
| Measured sound power level | dB (A) | 2000/14/EC EN 22868 EN ISO 3744 | 104.0 | |
| Uncertainty | dB (A) | | 1.0 | |
| Guaranteed sound power level | dB (A) | $L_{WA}$ 2000/14/EC EN 22868 EN ISO 3744 | 105.0 | |
| Vibration level | $m/s^2$ | EN15503 EN 22867 EN 12096 | 6.3 | * |
| Uncertainty | $m/s^2$ | EN 12096 | 2.8 | |
| * Weighted average values (1/7 minimum rpm, 6/7 at full load) | | | | |

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## 14. 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. Type: | **Blower** |
| 2. Trademark: / Type: | **Oleo-Mac BV 250 – Efco SA 2500** |
| 3. serial identification | **554 XXX 0001 - 554 XXX 9999** |
| complies with the provisions of the Directive / Regulation and subsequent amendments or additions | **2006/42/EC - 2014/30/EU - (EU) 2016/1628 - 2000/14/EC - 2011/65/EU** |
| conforms with the provisions of the following harmonised standards: | **EN 15503:2009+A2:2015 - EN ISO 14982:2009** |
| Conformity assessment procedure followed | **Annex V - 2000/14/EC** |
| Measured sound power level | **104.0 dB(A)** |
| Guaranteed sound power level: | **105.0 dB(A)** |
| Made at: | **Bagnolo in piano (RE) Italy - via Fermi, 4** |
| Date: | **15/04/2020** |
| Technical documentation available by: | **the administrative headquarter. - Technical Department** |


Fausto Bellamico - President

## 15. 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) 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.**

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## 16. TROUBLESHOOTING CHART

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

When you have checked all the possible causes listed and you are still experiencing the problem, see your Servicing Dealer. If you are experiencing a problem that is not listed in this chart, see your Servicing Dealer for service.

| PROBLEM | POSSIBLE CAUSE | SOLUTION |
|---|---|---|
| Engine will not start or will run only a few seconds after starting. | 1. No spark<br>2. Flooded engine. | 1. Watch for spark at spark plug tip. If there is no spark, repeat test with a new spark plug **(CMR7A)**.<br>2. Follow procedure page 23 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 | 1. Check oil fuel mixture.<br>2. Air filter dirty.<br>3. Carburetor requires adjustment. | 1. Use fresh fuel and the correct 2-cycle oil mix.<br>2. Clean per instruction in Maintenance-Air Filter Section.<br>3. Contact a Servicing Dealer for carburetor adjustment. |
| Engine starts, runs and accelerates but will not idle. | Carburetor requires adjustment. | Contact a Servicing Dealer for carburetor adjustment. |
| The engine starts and runs, but the air flow is low | 1. Safety guard blocked<br>2. Impeller damaged<br>3. Impeller housing and tubes blocked | 1. Clean safety guard<br>2. Contact an Authorised Service Centre<br>3. Clean |