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Originalfassung

DE BETRIEBSANLEITUNG

STROMERZEUGER

Übersetzung / Translation

EN USER MANUAL

GENERATOR

ES INSTRUCCIONES DE SERVICIO

GENERADOR

FR MODE D'EMPLOI

GROUPE ÉLECTROGÈNE

CZ NÁVOD K POUŽITÍ

GENERÁTOR ELEKTRICKÉHO PROUDU

SK NÁVOD NA POUŽITIE

GENERÁTOR PRÚDU

SL NAVODILA ZA UPORABO

ELEKTRIČNI GENERATOR

HR KORISNIČKI PRIRUČNIK

ELEKTRIČNI GENERATOR



ZI-STE2000IV

EAN: 9120039239132



ACHTUNG: Öl kontrollieren!

Motor startet nicht bei Öl mindermenge!!



ATTENTION: Check Oil!

Engine don't start with low oil!!



**YOUR
JOB.
OUR
TOOLS.**



10 PREFACE (EN)

Dear Customer!

This manual contains information and important notes for safe commissioning and handling of the ZIPPER generator ZI-STE2000IV, hereinafter referred to as “machine” in this document.



This manual is part of the machine and must not be removed. Save it for later reference and if you let other people use the machine, add this manual to the machine.

Please read and note the safety instructions!

Before first use read this manual carefully. It eases the correct use of the machine and prevents misunderstanding and damages of machine.

Due to constant advancements in product design, construction, illustrations and contents may deviate slightly. If you notice any errors, please inform us.

We reserve the right to make technical changes!

Check the goods immediately after receipt and note any complaints on the consignment note when taking over the goods from the deliverer!

Transport damage must be reported to us separately to us within 24 hours.

ZIPPER MASCHINEN GmbH cannot accept any liability for transport damage that has not been reported.

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The place of jurisdiction is the regional court Linz or the court responsible for 4707 Schlüsslberg is valid.

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11 SAFETY

This section contains information and important notes on the safe commissioning and handling of the machine.



For your safety, read this manual carefully before commissioning. This will enable you to handle the machine safely and thus prevent misunderstandings as well as personal injury and damage to property. Pay special attention to the symbols and pictograms used on the machine as well as the safety information and danger warnings!

11.1 Intended use of the machine

The machine is intended exclusively for the following activities:

This machine is designed exclusively for operating electric devices whose max. performance is within the specifications for the machine and the suitability according to the respective manufacturer's specifications of the device to be operated is ensured. A higher starting current of inductive loads must be considered.

NOTE



ZIPPER MASCHINEN assumes no responsibility or warranty for any other use or use beyond this and for any resulting damage to property or injury.

11.1.1 Technical restrictions

The machine is designed for the work under the following conditions:

Relative humidity:	max. 65 %
Temperature (for operation):	+5° C to +40° C
Temperature (Storage, Transport):	-20° C to +55° C
Max. altitude above sea level	1500m

11.1.2 Prohibited applications / Dangerous misuse

- Operating the machine without adequate physical and mental fitness.
- Operating the machine without knowledge of the manual.
- Modifying the machine design.
- Operating the machine in wet and rainy conditions.
- Operating the machine with wet hands.
- Operating the machine in a potentially explosive environment.
- Do not smoke nearby the machine while the machine is in operation.
- Operating the machine indoors or in closed areas.
- Never connect the machine to the power supply (socket-outlet)!
- Never connect the machine with other energy sources (generators)!
- Operating the machine outside the technical limits specified in this manual.
- Removing of the safety markings attached to the machine.
- Modifying, circumventing or disabling the safety devices of the machine.
- Never leave the machine unattended, especially when children are around!

The non-intended use or the disregard of the explanations and instructions described in this manual will result in the expiration of all warranty claims and compensation claims for damages against ZIPPER MASCHINEN GmbH.



11.2 User Requirements

The machine is designed to be operated by one person. The prerequisites for operating the machine are physical and mental fitness as well as knowledge and understanding of the operating instructions. Persons who, due to their physical, sensory or mental capabilities, inexperience or lack of knowledge, are unable to operate the machine safely must not use the machine without supervision or instruction by a responsible person.

Please note that locally applicable laws and regulations determine the minimum age of the operator and may restrict the use of this machine!

Work on electrical components or equipment may only be carried out by a qualified electrician or under the guidance and supervision of a qualified electrician.

Observe local regulations for electrical safety.

Put on your personal protective equipment before working on the machine.

11.3 General safety instructions

To avoid malfunctions, damage and health impairments when working with the machine, the following points must be observed in addition to the general rules for safe working:

- Check the machine for completeness and function before starting. Only use the machine if the separating and other non-separating protective devices required for machining have are fitted.
- Make sure that the guards are in good working order and properly maintained.
- Select a level, vibration-free surface as the installation area.
- Ensure sufficient space around the machine!
- Ensure sufficient lighting conditions at the workplace to avoid stroboscopic effects.
- Ensure a clean working environment.
- Keep the area around the machine free of obstacles.
- Remove tool keys and other setting tools before switching on the machine.
- Never leave the running machine unattended. Switch off the machine before leaving the working area and secure it against unintentional or unauthorized restarting.
- The machine may only be operated, maintained or repaired by persons who are familiar and who have been informed about the dangers arising from this work.
- Ensure that unauthorized persons keep a safety distance from the machine and keep children away from the machine.
- Always work with care and the necessary caution and never use excessive force.
- Do not overload the machine!
- Wear suitable protective equipment (ear protection)!
- Never wear loose jewellery, loose clothing or accessories (e.g. tie, scarf).
- Do not work on the machine if you are tired, not concentrated or under the influence of medication, alcohol or drugs!
- Do not use the machine in areas where vapours of paints, solvents or flammable liquids represent a potential danger (danger of fire or explosion!).
- Shut down the machine and disconnect it from the power supply, before adjustment, changeover, cleaning, maintenance or repair work, etc. Before starting work on the machine, wait until all tools or machine parts have come to a complete standstill and secure the machine against unintentional restart.
- Warning signs and/or stickers on the machine that are illegible or have been removed must be replaced immediately!

11.4 Electrical safety

- Before commissioning, the machine and its electrical equipment (including power cable and plug) should be checked to ensure that there is no defect.
- Only use suitable extension cables. When using extension cables or mobile distribution networks, ensure that the resistance value does not exceed 1.5 Ω . As a guideline, the total length of the cables should not exceed 60 m for a cross-section of 1.5 mm² and 100 m for a cross-section of 2.5 mm².



- Considering the high mechanical forces, only durable rubber cables (IEC 245) or equivalent equipment should be used.
- A damaged or tangled cable increases the risk of electric shock. Handle the cable with care. Never use the cable to carry, pull or disconnect the power tool. Keep the cable away from heat, oil, sharp edges or moving parts.

11.5 Special safety instructions for this machine

- Do not use the machine if it is raining, wet or has high humidity. RISK OF ELECTRIC SHOCK. DANGER OF LIFE!
- Only operate the machine outdoors. Always ensure adequate ventilation and heat dissipation in the operating area.
- Place the machine at least 1m away from buildings and the equipment connected to it.
- Place the machine in a secure, level position. Do not turn, tip or change the machines position while it is working.
- Never connect the machine directly to another power supply network (e.g. the mains power supply, other power generators,..).

11.6 Safety instructions for machines with combustion engine

- Never change the motor and machine settings.
- The machine is to be operated only with equipment whose voltage specifications conform to the machine's output voltage.
- The machine is equipped with a low oil alarm. If oil level is low, it is not possible to restart the engine.
- Danger of burns! During the operation flow of hot exhaust gases and engine parts such as the muffler and engine become hot.
- After the operation, the machine must cool down. Otherwise there is an imminent risk of burns.
- Never place a hot machine in dry grass or other easily flammable materials.
- Never cover the running machine.
- Always keep the area around the muffler free of foreign substances such as leaves, paper, cardboard, etc. A hot muffler could ignite these substances and cause a fire.
- Do not touch the spark plug connector when the engine is running (electric shock!).
- WARNING: Gasoline is highly flammable!
- Stop the engine before refuelling.
- Smoking and open flames are prohibited during refuelling.
- Do not open the fuel filler cap while the appliance is running or hot. Fuel and escaping fuel vapours can ignite on hot parts of the unit.
- Do not refuel when the engine and carburettor are still very hot.
- Refuel only outdoors or in a well ventilated area.
- Avoid contact with skin and clothes (fire hazard).
- Check after refuelling fuel filler cap and check for leaks.
- Start the engine at least 3 meters from the tank location.
- Spilled fuel is wiped up immediately.
- Make sure the fuel does not overflow. If the fuel overflows, the engine must not be started. Remove any dirt from the appliance and prevent any attempt at ignition until fuel fumes have evaporated.
- Damaged fuel tank or other fuel filler cap must be replaced immediately.
- Check the fuel line and tank regularly for leaks and cracks. Do not operate the machine if there are known leaks in the fuel system.
- Keep the fuel in suitable containers only.
- Danger of Intoxication! Only use outdoors and far from open windows and vents!
- Exhaust fumes contain toxic carbon monoxide. The exposure can cause unconsciousness and death.
- No other person, children or pets shall remain within 5m!

11.7 Hazard warnings

11.7.1 Residual risks

Despite intended use, certain residual risk factors remain.



- **Risk of burns:**
Touching the mufflers, exhaust and other machine components which can be hot after prolonged continuous operation or when the engine is hot cause severe burns.
- **Risk of fire and explosion:**
Gasoline is highly flammable and explosive under certain conditions.
NEVER refuel fuel or engine oil while the machine is in operation or is hot.
When refuelling at places where fuel is stored do not smoke or allow open flames or sparks.
Do not overfill the fuel tank and avoid the spillage of gasoline during refuelling. If fuel is spilled make sure the area is completely dry and cleaned before starting the engine.
Make sure that the fuel filler cap is tightly closed again after refuelling safely.
- **Chemical risks**
Never use or refuel a gasoline or diesel engine in a closed area without adequate ventilation.
Carbon monoxide emissions from the internal drive units of the engine can cause in confined spaces through inhalation health effects and death. Therefore use the machine only in well-ventilated rooms or outdoors in operation.
Liquid fuels can cause serious damage on the skin and the environment.
- **Risk of electric shock**
Direct electrical contact may cause electric shock.
Never touch the unit with wet hands. Provide adequate grounding.
- **Hearing damage**
A longer stay in the immediate vicinity of the running unit may cause hearing damage. Wear ear protectors!

11.7.2 Hazardous situations

Due to the structure and construction of the machine, hazardous situations may occur which are identified in these operating instructions as follows:

DANGER



A safety instruction designed in this way indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING



Such a safety instruction indicates a potentially hazardous situation which, if not avoided, may result in serious injury or even death.

CAUTION



A safety instruction designed in this way indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTE



A safety note designed in this way indicates a potentially dangerous situation which, if not avoided, may result in property damage.

Regardless of all safety regulations, your common sense and your appropriate technical aptitude/training are and remain the most important safety factor in the error-free operation of the machine. **Safe working depends on you!**

12 TRANSPORT

- Always switch off the engine when transporting and refuelling the machine!
- Ensure that the ON-OFF switch is turned to position "OFF".
- After operation, allow the machine to cool down for at least 15 minutes.



Transport of the machine in a vehicle:

- Check that no fuel can leak from the tank. Ensure that the fuel filler cap is tightly closed.
- When transporting the machine in a vehicle, ensure that the machine is appropriately secured! The machine must be carried and transported in an upright position to avoid oil or fuel leakage.
- If the machine is in a vehicle, do not start the engine. Take the machine out of the vehicle and run it outdoors only.
- Protect the machine from excessive heat during transport. If the machine remains in a closed vehicle for a long time, the fuel may ignite due to overheating.

13 OPERATION

Only operate the machine when it is in perfect condition. Before each operation, a visual inspection of the machine must be carried out.

13.1 Preparation

13.1.1 Checking delivery content

Check the delivery immediately for transport damage and missing parts. Report any damage or missing parts to your dealer or the shipping company immediately. Visible transport damage must also be noted immediately on the delivery note in accordance with the provisions of the warranty, otherwise the goods are deemed to have been properly accepted.

13.1.2 Requirements for the installation site

Place the machine on a level, solid surface to prevent the machine from tipping over.

When dimensioning the required space, take into account that the operation must be possible without restrictions at all times.

13.2 Pre-operation check

13.2.1 Check engine oil level

NOTE



The machine is delivered without engine oil and fuel!
Engine oil 15W40 must be filled before first use!



NOTE



A too low oil level will damage the engine and shorten the life of the machine. Therefore, check the engine oil level before every start and top up the engine oil if necessary.

NOTE: Engine does not start with low oil (low oil alarm lights up).

See capture maintenance => engine oil change.

13.2.2 Check fuel tank level

NOTE



Observe the safety regulations for fuel control. Filter the fuel during refuelling to prevent foreign particles from entering the combustion chamber. Wipe up leaked fuel.

WARNING



Never refuel if the engine is running



- Place the machine on a firm and flat surface.
- Open the fuel filler cap (1).

NOTE: Never refuel without filtering the fuel!

- Refuel with unleaded gasoline, until the max. filling level is reached.
- Close the fuel filler cap (1) tightly after refuelling.

13.2.3 Grounding

The machine is designed with the protective measure protective separation with potential equalization in the IT network. A grounding by means of a grounding screw and a grounding spike is thus designed to discharge static charges. For this purpose, connect the grounding screw of the power generator to a grounding spike (grounding cable cross-section 16mm²). If other protective measures are required, clarify them with a qualified electrician and have them documented in order to check their effectiveness.

13.3 Information on Initial Start-up

13.3.1 Test Run Initial Start-up

Make sure to treat the machine with care, when using it for the first time.

- Let the machine run idle for about 3 minutes connecting the generator with consumer load.
- Pay attention to abnormal noises.
- Pay attention to the exhaust fumes (too black, too white)?

If these points meet the demands, the machine can be used further. Otherwise stop the machine and find the cause of the problem.

13.4 Switching on the machine by an electrical amateur

Switching on without a qualified electrician, the following requirements must be met:

- The machine is checked at regular intervals by a qualified electrician (recommended every six months).
- Extension and connection cables as well as plugs/sockets must be checked regularly for mechanical damage.
- Only use cables and conductors that are permanently suitable for the intended use.

13.5 Operating instructions

NOTE



- Always place the machine on a firm and flat surface! No turning, tilting or moving during the engine is running.
- Always check oil and fuel level before starting.
- Do not connect the device before the machine is running at full speed. Disconnect the device before turning the machine off.
- Connected devices must be in perfect condition.
- Keep the cable length to the device as short as possible.

NOTE: For a period of 5 minutes, the machine is designed to provide maximum performance. For continuous operation, the specified rated performance should not be exceeded.

13.5.1 Operation of the machine to over 1500m above sea level

- When operating at high altitudes, the air/fuel mixture becomes too dense due to the lower oxygen content in the air. This leads to loss of power, increased fuel consumption, rapid wear of the spark plugs and difficult starting of the engine.

13.5.2 Connecting devices

- Before connecting a device to the machine you must check its perfect condition.
- When you recognize that a connected device acts unusual you must stop the machine and disconnect the device. Control whether the device is damaged or if the machine was overloaded by the device.
- The max. performance of the connected devices must be within the specifications for the machine.



NOTE: Most devices (motor) require more starting current to start than specified. A short exceed of the normed power capacity of the machine is possible but if this happens oftener the life time of the machine will be shortened.

Please consult the performance specifications on the connected electrical devices, these can usually be found next to the serial or manufacturing number.

Please consider: Some devices, for instance cooling devices need up to 5 times more starting current than current during the operation.

NOTE: If the machine is continuously overloaded or if a short circuit occurs, the power supply to the connected devices is interrupted. In this case, the overload alarm lights up red continuously. If this occurs, switch off the machine and check the problem.

13.6 Operation

13.6.1 Switch the engine/machine on

NOTE: If a device is connected to the machine, disconnect it.

	Deactivate ECO-Mode. Set the switch to position "0".
	Set the ON-OFF switch (2) to the "ON" position.
	- At cold start set the choke lever (3) to position „CLOSE (0)". - If the engine runs smoothly set the choke lever (3) to position „OPEN (I)". - At warm start (the engine was running and is still warm) set the choke lever (3) to position „OPEN (I)". If the engine fails to start after 5 attempts, set the choke lever to position "CLOSE (0)" and try again.
	Start the engine with the recoil starter. Grab the recoil starter handle (4) and pull it out slowly. The resistance becomes strongest at a certain point. This point corresponds to the compression point. Let the rope roll back a little from this point and then pull it out powerfully. Slowly return the starter handle (4). If the engine does not start, try again. Normally start: 3-4 attempts.

13.6.2 Switch the machine off

CAUTION



In case of emergency stop the machine directly with the ON-OFF switch.

Under normal circumstances, switch off the machine as follows:

- Shut down the connected devices and disconnect them from the machine.
- Let the machine run for some time without connected devices to cool down.
- Switch off the machine by putting the ON-OFF switch to position „OFF".



13.6.3 ECO-mode



The ECO-mode is recommended to reduce fuel consumption during operation.

With the activated ECO-mode, the machine automatically reduces the engine speed depending on the load. This results in less fuel consumption.

NOTE: In case of low power output, the ECO-mode can be activated (switch (I) in position "I").

In case of high power output and DC operation, the ECO-mode must always be deactivated (switch (I) in position "0").

13.7 AC Operation

1. Verify that the green indicator light (running) is on after starting the engine. This indicates that the machine is working properly.
2. Check that the ON-OFF switch of the electrical devices to be used is set to "OFF".
3. Connect the device to the AC-socket.
4. Start the device.

NOTE: When connecting several devices, connect them in decreasing order of their kW consumption!

13.8 DC Operation

12V charging function for batteries: Before operation, observe the instructions and notes of the battery manufacturer. If the indicated charging currents/voltages of the machine are not permissible or not known for your battery, charge the battery via a battery charger to avoid damage.

1. During the direct current operation, switch off the ECO-mode. To do this, set the switch of the ECO-mode to the "0" position.
2. First connected the charging cable to the DC-connection of the machine.
3. Then link the charging cable to the connectors of the battery.
4. Start the machine.

NOTE:

- Do not charge built-in batteries.
- Do not change the polarity of the charging cable, otherwise serious results such as damage of the machine and the battery will be caused.
- When disconnecting the charging cable, start with the battery first.
- A battery contains acid (electrolyte). Any contact with the skin or eyes will cause severe burns. Use a mask, eye protection and protective clothing.



NOTE: AC and DC sockets can be used simultaneously.

An overload of the DC circuit can cause the DC-circuit breaker 12V (I) to be activated (the pressure spring of the switch pops up).

If this happens, wait a few minutes. In order to resume operation, press the DC-circuit breaker 12V (I).

13.9 USB-Port

The USB-port on the control panel can be used for charging electrical devices (5Vdc, max. 2A) which are compatible with the USB standard.



14 CLEANING, MAINTENANCE, STORAGE, DISPOSAL

WARNING



Always stop the machine and let it cool down before carrying out any maintenance work and secure it against unintentional commissioning.

WARNING:

Lack of maintenance or improper maintenance and repair before using the machine can result in serious injury or death! Take therefore the safety rules, operating and maintenance instructions very seriously.

Repairs only by qualified staff!

NOTE: Prevent unintentional commissioning of the machine by interrupting the fuel supply (ON-OFF switch in position "OFF") as well as interrupting the ignition spark (remove spark plug cap of spark plug).

14.1 Cleaning

Regular cleaning guarantees the long service life of your machine and is a prerequisite for its safe operation.

NOTE: The use of solvents, aggressive chemicals or scouring agents can cause damage to the plastic parts of the machine!

Thus, when cleaning, use only water and, if necessary, mild detergents.

- We recommend cleaning the machine immediately after each use.
- Keep all safety devices, air vents and the motor housing free of dirt and dust as far as possible.
- Wipe the equipment with a moist cloth and some soft soap or blow it with compressed air at low pressure.
- Take care that any water enters the interior of the machine.

14.2 Maintenance

The machine is low-maintenance and only a few parts need to be serviced. Malfunctions or defects that could affect your safety must be repaired immediately!

- Before each operation, check the perfect condition of the safety devices.
- Regularly check the perfect and legible condition of the warning and safety labels of the machine.
- Use only proper and suitable tools.
- Use only original spare parts recommended by the manufacturer.

14.2.1 Maintenance plan

The type and degree of machine wear depends to a large extent on the operating conditions. The following intervals apply when the machine is used within the technical limits:

(1) Interval can vary according to the air quality (2) Only by specialists!		Prior to each start	(for new machine) after first Month or 20 operation hours	Every 3 months or every 50 operation hours	Every 6 months or every 100 operation hours	Every 12 months or every 200 operation hours	Every 2 years
Engine oil	Control the level	X					
	Change		X		X		
Air filter	Control	X					
	Change			X (1)			
Spark plug	Control				X		
	Change					X	
Fuel tank and fuel filter	Clean				X (2)		
Fuel pipe	Control						X (2)

**14.22 Engine oil change****NOTE**

Waste oils and fuel are toxic and must not be released into the environment!

Contact your local authorities for information on proper disposal.

Drain the used engine oil while it is still warm from operating the machine (drains easier).

	Loosen both screws (1) and remove the cover (2).
	- Unscrew the dipstick (3). - Drain the old oil into a suitable container. - Fill in new engine oil and check the engine oil level with the dipstick (regarding engine oil type and oil tank capacity see technical data). - If the oil level is correct, reinsert the dipstick (3). - Remove oil residues with a cloth. - Screw the cover (2) back on by using the two screws (1). - Place the machine on an even surface and start the engine. If there is sufficient engine oil filled in, the low oil alarm will be not activated.

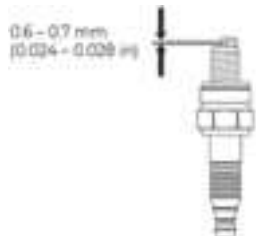
14.23 Air filter

NOTE: Never operate the machine without or a not maintained air filter!

	Loosen both screws (1) and remove the cover (2).
	- Loosen the screw (3) and remove the cover (4). - Take out the air filter. - Clean the air filter with soapy water, then rinse with clear water and let it dry thoroughly before reassembling. - The reassembly is done in reverse order.



14.24 Spark plug

	Remove the spark plug cover (1).
	- Remove the spark plug cap (2). - Loosen the spark plug (3) using the spark plug spanner.
	- Visually inspect the spark plug and remove carbon deposits with a copper wire brush. - Check electrode gap. This should be between 0,6 - 0,7mm. - If necessary, change the spark plug. - Screw in the spark plug the first few turns by hand. - If it is tight, tighten the spark plug with the spark plug spanner for ½ turn. - Refit spark plug cap (2) and then reinstall the spark plug cover (1).

14.3 Storage

Storage period up to 1 month:

- No special preparation is required, only to check whether the ON-OFF switch is in the “OFF” position.

Storage period longer than one month:

NOTE



fuels are toxic and must not be released into the environment!

Contact your local authorities for information on proper disposal.



Let the machine cool off.

- Drain fuel. To do this, empty the tank and drain the remaining fuel from the carburettor drain plug.
- Put the fuel in a suitable container so that it does not get into the environment.
- Store the drained fuel in a suitable container.
- Pull the starter handle slowly until you feel resistance. At this point, the piston is on its compression point and both the intake and exhaust valves are closed. (internal corrosion prevention).
- When not in use, store the cooled down machine in a well ventilated, dry, frost-proof and lockable place. Make sure that unauthorized persons and especially children do not have access to the machine.

NOTE



Improper storage can damage and destroy important components. Only store packed or already unpacked parts under the intended ambient conditions!



14.4 Disposal



Observe the national waste disposal regulations. Never dispose of the machine, machine components or operating equipment in the residual waste. If necessary, contact your local authorities for information regarding available disposal options. If you purchase a new machine or equivalent equipment from your specialist dealer, he is obliged in certain countries to dispose of your old machine properly.

15 TROUBLESHOOTING

If you are unable to carry out the necessary repairs properly and/or do not have the required training, always consult a specialist to solve the problem.

Trouble	Possible cause	Solution
Engine does not start	• Incorrect starting sequence	• Observe the correct starting sequence
	• Dirty air filter	• Clean/replace air filter
	• No fuel supply	• Refuel
	• Fault in the fuel line	• Check the fuel line for kinks or damages
	• Engine flooded	• Screw off, clean and dry the spark plug. Then pull the cranking rope several times and reinstall the spark plug
	• Spark plug connector not placed on	• Place on the spark plug connector
	• No ignition spark	• Clean/replace spark plug • Check ignition cable
	• Insufficient engine oil	• Check engine oil level
Engine starts and is stalled immediately	• Incorrect idle adjustment	• Contact the service team
Machine works with interruptions	• Carburettor	• Contact the service team
	• Spark plug fouled	• Clean/replace spark plug • Check spark plug connector
Low oil light glows	• Check engine oil level	• Fill engine oil
	• Too less or no engine oil	• Fill engine oil
Overload indicator light glows	• High temperature protection activated	• Cool down the engine
	• Overload protection activated	• Reduce existing load
	• Short circuit protection activated	• Check loads