



Original Instructions in English

OPERATING INSTRUCTIONS BMP-335 EHY/GHY VERSION 2.4





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1. Introduction

Before use, operators must be provided with information, instruction and training for the use of the machine and the substances for which it is to be used, including the safe method of removal and disposal of the material collected. All persons who are working with or maintaining this machine must read the manual carefully and understand it fully. In case you sell the unit, hand it on to the next owner. Keep this manual always with the machine, to enable it to be referred to at any time. Any other work not covered by this operating manual must not be carried out. Always use common sense when working with machines.

This machine is designed for industrial use by professionals. Only authorized and trained personnel may operate this machine. This machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge. **Blastrac BV** offers a course on the use of the machine in order to make the operating and maintenance personnel familiar with all elements of the machine.

Always read the enclosed OWNER'S MANUAL of the Hatz diesel engine before operating the machine.

The OWNER'S MANUAL contains important information about getting the best performance and safe operation / maintenance of the diesel engine. The OWNER'S MANUAL should be considered a permanent part of the engine and should remain with the engine if resold.

2. Machine description

The Blastrac scarifier BMP-335 can be supplied with a 400 volt electric motor (EHY) or with a combustion engine (GHY). The intended use of this scarifier is to roughen up existing horizontal surfaces and removing coatings. It can be used on almost any surface (concrete, asphalt, stone and steel). The machine may not be used for other purposes. The manufacturer will not be liable for damage resulting from incorrect usage, in these cases the user assumes all risks.

The drum of the scarifier revolves at +/- 1000 revolutions per minute. (RPM)

The depth of scarifying can be adjusted by the fine adjustment control at the front of the machine; by this means it is possible to treat the surface with light or heavy cuts as is required.

The machine may not be used without an adequate dust extraction system. A specially designed Blastrac dust collection system ensures dust-free operation of the machine and clean air at the workspace.

Application

The scarifier is a very versatile machine and with the appropriate cutters it may be used for the following applications.

- To roughen concrete
- To clean most horizontal surfaces
- To remove coatings
- To corrugate concrete surfaces
- To remove road markings
- To make non-slip surfaces

The force of impact of a cutter is controlled by the depth adjustment. With the right depth adjustment, the best performance is obtained to give a desired result.

With a suitable Blastrac dust collector work can be carried out without causing excessive dust in the work area, this raises the life span of the machine and protects the health of the personnel.

For the GHY version (Diesel engine)

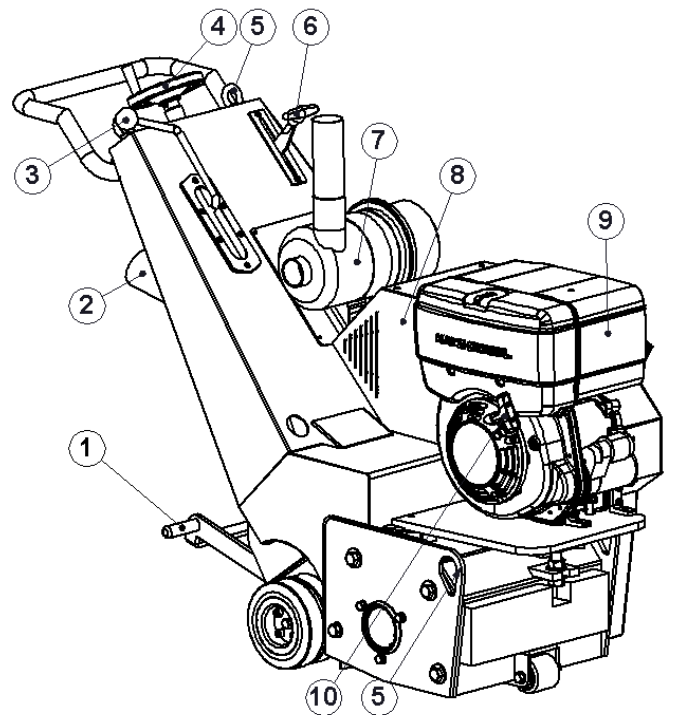
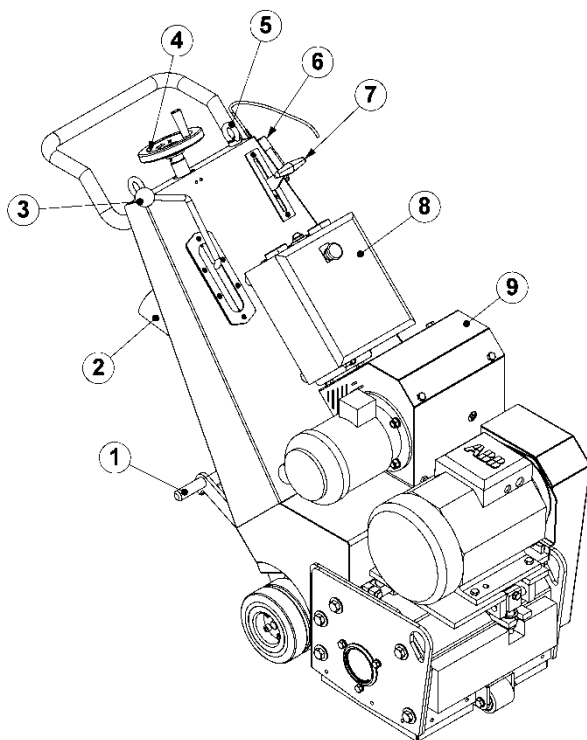
Please read the enclosed OPERATOR'S MANUAL of the diesel engine before operating the machine.

The OPERATOR'S MANUAL contains important information about getting the best performance and safe operation of the diesel engine.

The OPERATOR'S MANUAL should be considered a permanent part of the engine and should remain with the engine if resold.



	BMP-335 EHY	BMP-335 GHY
1	Treadle of drive system	Treadle of drive system
2	Dust collector connection	Dust collector connection
3	Quick lift lever	Quick lift lever
4	Handwheel working depth	Handwheel working depth
5	Lifting eye	Lifting eye
6	Dead man switch	Driving lever
7	Driving lever	Air filter
8	Electrical panel	Hydraulic pump housing
9	Hydraulic pump housing	Diesel motor
10		Start cord



Accessories

The cutters for the BMP-335 are:

MPL24	Cutter 8pt.
MPL29	Milling cutter 6pt.
MPL60-1	Milling cutter 12pt.
MPL120	Cutter 12pt.
MPL24S335-5	Refill set MPL24 cutters.
MPL29S335-5	Refill set MPL29 cutters.
MPL60S335-5	Refill set MPL60-1 cutters.
MPL120S335-5	Refill set MPL120 cutters.
MPD335-5L24S	Drum complete with MPL24 cutters.
MPD335-522L29S	Drum complete with MPL29 cutters.
MPD335-620L60S	Drum complete with MPL60-1 cutters.
MPD335-522L120S	Drum complete with MPL120 cutters.



3. Safety



Warning!

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire, explosions and / or serious injuries.

Only authorized and trained personnel may operate this machine. This machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge.

It is the responsibility of the user to analyse the surface to be treated. The surface may not contain any substances which could pose a fire-, explosion- or health risk when treated. The user should make a risk assessment on the basis of the information obtained about the surface to be treated and take proper precautions for the work to be performed.

In case of any inappropriate usage, improper operation or repair, the producer shall be exempt from liability.

3.1 Work area safety

- a) Do not use the machine in rain, damp or wet locations.
- b) Avoid dangerous environments: do not work in the presence of explosive atmospheres, in the presence of flammable liquids, gases or dust. Remove materials or debris that may be ignited by sparks.
- c) In some cases sparks could be created by **scarifying or milling**.
- d) **The surface to be treated must be clean, make sure to remove all stones, screws etc..**
- e) **Do not use on wood.**
- f) Make sure there is enough ambient light on the work area. Cluttered or dark areas invite accidents.
- g) Keep children and bystanders away while operating the machine. They are likely not to foresee the potential dangers of the machine. Distractions could cause you to lose control of the machine.
- h) Persons who are not operating the machine must not be permitted to stay in the surrounding area of at least 5 meter from the machine.
- i) Never use the machine when the surface is not clear and if there is a risk of stumbling or tripping.
- j) Remove electrical cables and dust hose(s) from the surface to be treated.
- k) Make sure that there are no cables or hoses in the driving direction of the machine.
- l) Make sure that there is nothing standing or situated on the surface to be treated.
- m) Make sure the machine can travel over all inequalities on the surface, small inequalities like weld seams or (floor) joints are no barriers for the machine.
- n) **Never stay in the rain with the machine.**
- o) Check if there are any obstacles that can snag the cables when the machine is moving.
- p) Remove all objects from the surface that can damage the machine. Remove reinforcing steel or other objects protruding from the surface in order to prevent damage to the machine.
- q) **Warning! Make sure that the surface to be treated does not contain dangerous materials such as:**
 - **combustible or explosive dusts or substances.**
 - **carcinogenic or pathogenic substances.****In these cases, additional safety measures should be used. Always mind the local safety requirements.** Contact your dealer for additional options.
- r) It is necessary to provide for an adequate air change rate L in the room if the exhaust air from the dust collector is returned to the room. Comply with the National regulations.
- s) Secure the work area around the machine in public areas providing an adequate safety distance from the machine. Use a red and white safety chain and danger sign to enclose the work area.
- t) Danger to life from inhaling exhaust gases. Toxic engine exhaust gases can lead to loss of consciousness and even death in closed-off and poorly ventilated rooms.
 - Never operate the machine in closed-off or poorly ventilated rooms.
 - Do not breathe in the exhaust gases.
- u) Only work on locations which are adequately ventilated.

3.2 Personal safety

- a) **Always wear Personal Protective Equipment while working with the machine.**
 - Dust mask class FFP3 or higher
 - Ear protection
 - Safety glasses with lateral protection
 - Protecting gloves
 - Safety shoes



- b) Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.
- c) Personnel must tie back long hair and not wear loose clothing or jewellery including rings.
- d) Stay alert, watch what you are doing and use common sense when operating the machine.
- e) Always seek professional medical attention immediately in case of injury.
- f) All persons surrounding the machine should wear Personal Protective Equipment.

3.3 Machine safety general

- a) Safety functions and operating functions must work correct.
- b) No loose bolts and nuts permitted.
- c) Never operate machine without the guards and/or safety devices in place.
- d) Never change anything on the safety devices on the machine!
- e) Do not use the machine when it is damaged.
- f) Do not **open or remove protective guards** while driving gears are running.
- g) The temperature of the machine can be above 37° C.
- h) The machine, specially the handle grips and control devices must be dry and free of fats/oils.
- i) All repair work has to be done by qualified Blastrac personnel, this guarantees a safe and reliable machine.
- j) Always use original Blastrac spare parts and cutters. This will ensure the best performance. Only original parts meet the factory specifications and quality. Otherwise Blastrac BV cannot guarantee the safety of the machine. The part numbers can be found in the Service Manual.
- k) Check the rotating direction of the motor before operation. The correct direction is given with an arrow on the housing of the motor.
- l) Make sure the drum with picks/cutters is in good condition and the picks/cutters can turn free in the drum.
- m) **In some cases sparks could be created by milling / scarifying.**
- n) If safety-critical changes occur to the machine or its working method, the machine must be shut down immediately! The cause of the fault must be established, and rectified.
- o) In the event of operational malfunctions the machine must be shut down immediately and secured!
- p) **Never use the machine without a suitable (Blastrac) dust collector!**

3.4 Electrical safety

- a) Use only extension cables for extending the main cable that are sized and marked in accordance with the overall power consumption of the machine. Do not use damaged extension cables.
- b) Electrical cables must be rolled entirely off of the reels.
- c) Any damage to the electric cables and/or electrical components is not permitted.
- d) If the power supply cable or plug is damaged, it must be replaced immediately. Only use original Blastrac parts.
- e) The voltage on the identification plate must comply with the power supply.
- f) Use an electrical power supply connection with earth connection and earth leakage circuit breaker.
- g) The circuit breaker of the power supply must have a "D" characteristic. Circuit breakers with a "C" or "B" characteristic can give problems when switching the machine on.
- h) **Keep the machine original; The machine is always equipped with an earthed connection, do not change this** and always use earthed cables with an earthed plug.
- i) Inspect and test the electrical components regularly. The electrical components have to satisfy with the requirements set out in the harmonised norm EN60204-1.
- j) Always call a skilled electrician or your distributor when you have questions about the safety of the electrical components.
- k) Work on electrical equipment or operating materials may only be undertaken by a skilled electrician or by trained persons under the guidance and supervision of a skilled electrician as well as in accordance with the electrical engineering regulations.
- l) Always use tools that are insulated against voltages.
- m) Do not abuse the cables. Never use the cables for carrying, pulling or unplugging the machine. Keep cables away from heat, oil, sharp edges or moving parts. Damaged or entangled cables increase the risk of electric shock. Do not fold the cable or clamp it.
- n) Don't pull out the power supply cable out by the wire, but by the connector.
- o) o) Be careful with water on the treated surface. Electrical cables must not come into contact with water.
- p) During a long standstill of the machine, pull out the main plug.
- q) If the machine is to be operated using power from a generator, the generator must be operated in accordance with the current legal regulations and directives in force. (this applies to the protective earth conductor in particular) in order to ensure that all safety devices are functioning and to eliminate possible damage to electrical components.



3.5 Diesel version safety

- a) **Read the enclosed Operating Instructions of the diesel engine before using it.**
- b) Make sure there is no oil or diesel leaking out of the diesel engine.
- c) Always make a pre-operation inspection before you start the engine. You may prevent an accident or equipment damage.
- d) Look for signs of damage and remove any excessive dirt or debris.
- e) To prevent fire hazards and to provide adequate ventilation, keep the engine at least 1 meter (3 feet) away from buildings and other equipment during operation. Do not place flammable objects close to the engine.
- f) Anyone who is not operating this machine must be kept away from the area of operation due to a possibility of **burns from hot engine components**. Parts will remain hot for a while after stopping the engine. Let the engine cool before transporting it or storing it indoors.
- g) When transporting or storing the engine, turn the fuel valve OFF and keep the engine horizontal.
- h) Know how to stop the engine quickly, and understand the operation of all controls. Never permit anyone to operate the engine without proper instructions.
- i) Do not place flammable objects such as gasoline, matches, etc., close to the engine while it is running. Do not place anything on the engine.
- j) Refuel in a well-ventilated area with the engine turned OFF. Gasoline / diesel is highly flammable and explosive under certain conditions. Let the engine cool before refueling.
- k) Do not overfill the fuel tank. There should be no fuel in the filler neck.
- l) Do not smoke or allow flames or sparks where the engine is refueled or where gasoline / diesel is stored.
- m) **! Exhaust gas contains poisonous carbon monoxide !** Avoid inhalation of exhaust gases. **Never run the engine in a closed garage or confined area!** Always wear a dust mask. Breathing carbon monoxide can cause unconsciousness or death.
- n) If any fuel is spilled, clean it up completely and allow petroleum vapours to dissipate before starting the engine.
- o) Make sure the fuel and oil level are correct and that the filler cap is closed securely.
- p) Don't leave the machine laying backwards for a long time, because this may result in fuel spillage.
- q) Comply with all notices and warning labels on the engine and keep them in a legible condition. If a label should become detached or difficult to read, it must be replaced promptly. For this purpose, contact your nearest HATZ service station.
- r) Any improper modification of the engine will result in a loss of liability coverage for resulting damage.
- s) Only regular maintenance, as specified in the Hatz manual, will maintain the operating readiness of the engine.
- t) Disconnect the negative battery terminal before carrying out maintenance work.

3.6 Hydraulic safety

- a) Make sure all hydraulic hose connections are tightened and there is no leakage of oil.
- b) Over tightening could damage O-rings. If a leak still persists, remove fitting and replace O-ring.
- c) Make sure the hydraulic hoses have no damages, signs of wear or other defects.
- d) Hydraulic fluid under pressure is dangerous and can cause serious injury.
- e) Never look for a leak when the unit is under pressure.
- f) Avoid leaks by keeping fittings and hoses tight, only check and service when not under pressure.
- g) Leaking hydraulic fluid is not only unsightly, it's dangerous. It could make workplace floors slippery, contaminate the environment and could create a possible fire/explosion hazard.
- h) Never change the oil pressure of the machine! Changing the oil pressure could cause serious damage to the machine and could result in very dangerous situations!
- i) Only work with the hydraulic oil in an area that is well-ventilated, otherwise you must wear suitable respiratory protection. Always wear Personal Protective Equipment when handling the oil:
 - Protecting gloves (preferably made of nitrile or neoprene.)
 - Safety goggles.
 - Hydrocarbon-proof clothing and safety shoes.
- j) Avoid long and repeated contact with the skin, after contact wash thoroughly with water and soap. Contact with eyes: Immediately flush eyes with cold, fresh water for a minimum of 15 minutes. Seek professional medical attention.
- k) Do not eat, drink or smoke near the hydraulic oil.
- l) HV46 hydraulic oil holds no danger of intoxication.
- m) The hydraulic oil is stable at normal temperatures for storage, handling and use. However, the hydraulic oil is flammable when exposed to certain conditions. Empty containers may contain flammable or explosive vapors. Rags that are soaked with the product and paper or materials which have been used for absorbing the spilled product are inflammable. Make sure that no accumulation occurs. Remove safely after use.
- n) Avoid sparks, open flames, extremely high temperatures and other sources of ignition.
- o) Please read the Safety Data Sheets for additional information regarding the hydraulic oil.



- p) Only use HV46 hydraulic oil (E00481), non-compatible fluids could cause damage to the unit or serious injury.
- q) At least one time during year oil from system and the filter should be replaced.
- r) Work on hydraulic equipment or operating materials may only be undertaken by a skilled hydraulic engineer or by trained persons under the guidance and supervision of a skilled hydraulic engineer as well as in accordance with the hydraulic engineering regulations.
- s) Hoses and pipe work can be under high (hydraulic) pressure. The temperature can be above 37° C. Use only hoses and pipe work that are sized and marked in accordance with the overall power consumption of the machine.
- t) A second person must be deployed who can disengage the hydraulics in an emergency if work on live parts is necessary. The work area must be sealed off using a red and white safety chain and a danger sign. For the electrical parts, use a tool that is insulated against voltages.

3.7 Dust collector safety by a machine

- a) Always use a Blastrac dust collector to ensure a dust-free operation of the machine and clean air at the workspace. Also the airflow helps to cool the machine and prevents overheating.
- b) Read the operating instructions of the dust collector before using it.
- c) The dust container/bag of the dust collector must be emptied regularly. Comply with the local waste treatment regulations considering the removed material.
- d) The dust hose must be connected properly with a hose clamp and industrial tape.
- e) The dust hose must be undamaged and free of obstructions.
- f) Always switch on the dust collector first!

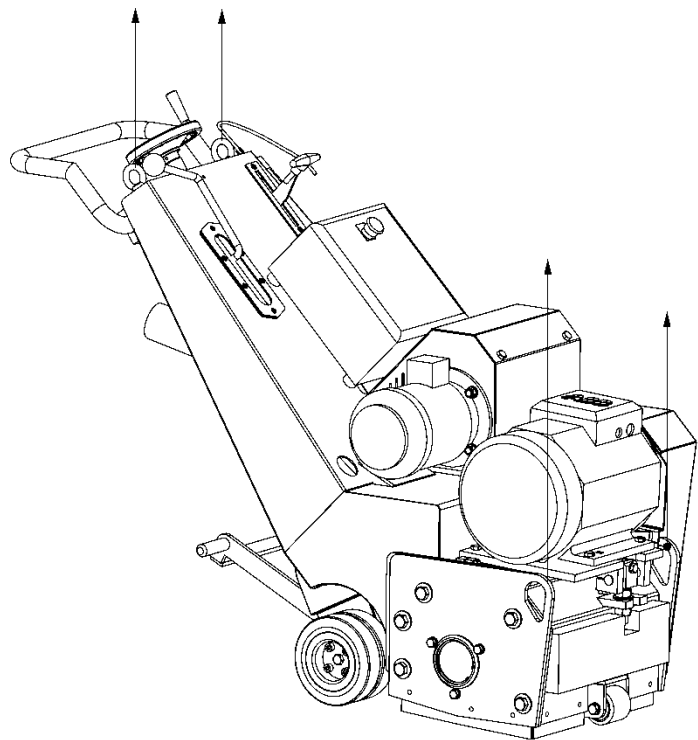
3.8 Maintenance safety

- a) Pull out the main plug and place it in sight, before changing the drum or starting inspections and repairing on the machine. Pull out the key of the dead man's switch and keep it in your pocket.
- b) Wait for a standstill of all drives before any inspections, adjustments and/or maintenance work is started.
- c) Block the machine in a stable position before doing any maintenance work.
- d) Failures due to inadequate or incorrect maintenance may generate very **high repair costs** and long standstill periods of the machine. **Regular** maintenance therefore is imperative.
- e) Operational safety and service life of the machine depends, among other things, on proper maintenance.
- f) Prevent premature wear by keeping the machine as dust free as possible. Clean the machine for this reason regularly with a dust collector and non-aggressive materials. Never use a high pressure water cleaner to clean the machine.
- g) Do not use any **aggressive** cleaning materials!
- h) Use lint-free **cleaning cloths!**
- i) Please advise the OWNER'S MANUAL of the diesel engine for additional information.
- j) It is advisable to stock all spare parts or wear parts that cannot be supplied quickly. As a rule, production standstill periods are more expensive than the cost for the corresponding spare part.
- k) The suitable precautions include decontamination before disassembling the machine, adequate filtered ventilation of the exhaust air from the room in which it is disassembled, cleaning of the maintenance area and suitable personal protection equipment.
- l) Always read the enclosed OWNER'S MANUAL of the Hatz diesel engine before operating the machine.
- m) The OWNER'S MANUAL contains important information about getting the best performance and safe operation / maintenance of the diesel engine.
- n) The OWNER'S MANUAL should be considered a permanent part of the engine and should remain with the engine if resold.



3.9 Transport safety

- a) Be aware of your surroundings and machine operating level. Do not side hill, do not run on steep incline, this could cause machine to tip over.
- b) The weight of the BMP-335 **EHY** is 405 kg, the BMP-335 **GHY** is 370 kg. Use a crane or lift when transporting the machine, use the lifting eyes on the machine.
- c) Before every use check the lifting eyes and welds for: deformation, damages, cracks, corrosion and wear.
- d) When lifting the machine from the ground, always use the lowest lifting speed. The cables must first be tensioned at this speed; they must not be slack when the machine is lifted from the ground.
- e) During hoisting make sure to be at a safe distance from the machine with the most optimal view on the machine and working environment.
- f) Never stand directly below the machine.
- g) When transporting the machine do so in such a manner that damage due to the effects of the use of force or incorrect loading and unloading is avoided.
- h) The lifting eyes can also be used to fasten the machine on a pallet or during transport.
- i) Always drive backwards when driving up to a ramp or grade, and forwards when driving of the ramp.
- j) Chock wheels for transport and keep the treadle in engaged position, this will function as a brake on the wheels.
- k) Don't leave the machine unsecured on jobsites.
- l) Park the machine always on a flat horizontal and levelled surface.
- m) Remove the dirt, dust and debris from the machine before transport.
- n) Make sure the electrical cable and dust hose are disconnected before transport.
- o) Store the cleaned and dry machine in a humid free room. Protect the motor from moisture, heat dust and shocks.
- p) Never use the machine for lifting persons or items.
- q) It is possible to transport the machine without the use of the motor by pushing up the treadle (pos. 1, page 5). The drive wheels are declutched of the drive motors now. Make sure that the floor is flat, because the machine is uncontrolled now! **It is very dangerous to drive the machine on a grade or ramp when the treadle is in upwards position!** Never load or unload the machine on a ramp or incline when the wheels are in the disengage mode. Failure to do so could cause machine to runaway, damage to the machine, damage to property or cause serious injury.
- r) Only lift the machine as shown in the picture below. Use the existing lifting points to lift the machine.





3.10 Signs on the machine

The following stickers are placed on the machine. Meanings of these symbols are:



! Danger Hazardous voltage in motor even when solid state controller is OFF. Disconnect main power before servicing motor, controller or associated wiring.



Warning! Hot surface.



DANGER Rotating parts inside. Keep hands clear. Lock-out / shut down before servicing.



Wear a dust mask class FFP3 or higher.



Hearing protection is obliged.



Safety glasses with lateral protection are obliged.



CE-mark on this machine.



Wear protecting gloves.

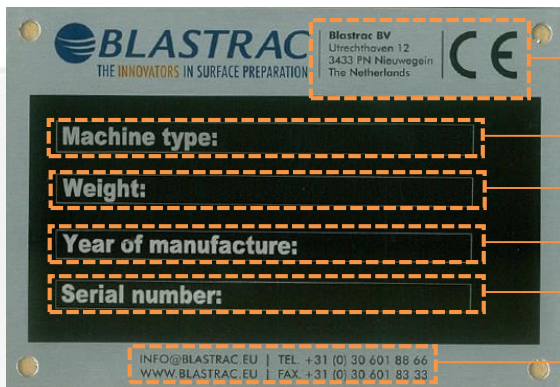


Safety shoes obliged.



Consult the manual before operating the machine.

Type plate:



Name, address and CE mark.

The machine type.

The net weight of the machine in kilogram.

The year of manufacture.

The serial number of the machine.

Email address, Website, Telephone & fax number.

EU Declaration of Conformity:





4. Initial operation

Before using the machine it is of great importance to inspect the machine. It is not permitted to use the machine if the machine safety is not according the checkpoints below.

4.1 Checkpoints electrical power supply (EHY-version)

- Use only extension cables for extending the main cable that are sized and marked in accordance with the overall power consumption of the machine.
- Electrical cables must be fully unwind of their reels.
- No damage is permitted for electrical cables.
- Use an electrical power supply connection with earth connecting.
- Make sure the power supply is in accordance with the machine specifications.
- The circuit breaker of the power supply must have a "D" characteristic. Circuit breakers with a "C" or "B" characteristic can give problems when switching the machine on.
- If the machine is to be operated using power from a generator, the generator must be operated in accordance with the current legal regulations and directives in force. (this applies to the protective earth conductor in particular) in order to ensure that all safety devices are functioning and to eliminate possible damage to electrical components.

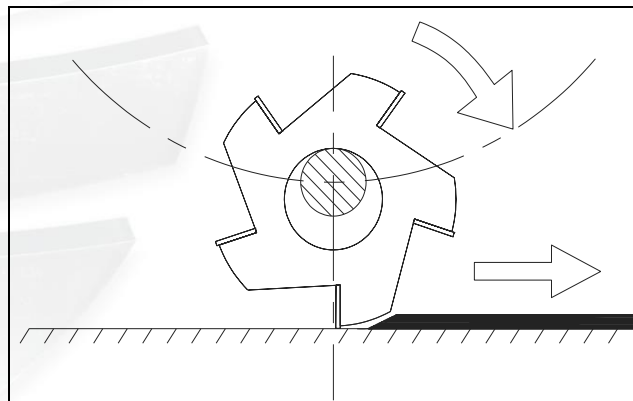
4.2 Checkpoints of the diesel engine (GHY-version)

- Make sure the location is adequately ventilated.
- Make sure there is a sufficient amount of fuel in the fuel tank.
- Make sure there is a sufficient amount of engine oil in the engine.
- Make sure no persons are located in the danger zone of the engine or machine.
- All safety equipment is in place.

4.3 Checkpoints of machine

- Safety functions and operating functions must work correct.
- Check all screws and other fasteners for tightness. No loose bolts and/or nuts are permitted.
- Check the electrical components, cables and connections for wear and/or damages.
- Check the hydraulic components on the machine for damages and wear.
- Dust hose connections must be reliable: use hose clamps and industrial tape.
- Dust hose must be undamaged and free of obstructions.
- Check the tension of the belt after a drum is placed in the machine.
- Make sure the drum is in good condition.
- Make sure the drum is assembled as shown in the service manual.
- Check, when using non symmetric cutters, if the direction of turning is like the figure below.

The tools must hit the floor by centripetal force and not because the axle pushes the tool (see drawing below).





4.4 Manual moving of the machine

To move the machine manually push the treadle up with your foot. The wheels are now disengaged from the drive motors. The machine can now be pushed around on its wheels.

Make sure that the floor is flat, because the machine is uncontrolled now! **It is very dangerous to drive the machine on a grade or ramp when the treadle is in upwards position!** Never load or unload the machine on a ramp or incline when the wheels are in the disengage mode. Failure to do so could cause machine to runaway, damage to the machine, damage to property or cause serious injury.

Push the treadle down when parking the machine, engaging the wheels to the drive system will act like a parking brake when the machine is turned off.

The machine should only be moved around when the dust hose, and power supply cable are disconnected.

WARNING! Always make sure all rotating parts have come to a complete standstill before moving around the machine.

Be careful! Make sure nobodies feet get under the wheels. Wear appropriate safety shoes when you drive the machine to or from the work area.

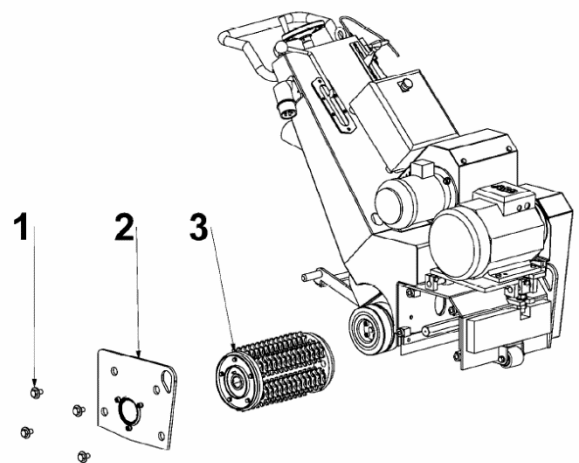
Make sure that no vehicles, such as forklift trucks and other equipment run over the electric cable and the dust hose.

4.5 Removing the drum

Make sure all moving parts of the machine have come to a complete standstill before changing the drum. Pull out the key of the deadman's switch and put it in your pocket.

Warning!
Always wear Personal Protective Equipment!
The dust can be hazardous to the health!
Wear a dust mask! Wear protective gloves!

1. Loosen the 4 bolts of the side plate
2. Remove the side plate (2)
3. Pull the drum from the axle, and support the drum.



4.6 Mounting the drum

- Clean the hexagon axle inside the machine and lubricate it over the whole length.
- Slide the drum over the axle until it will not go any further.
- Mount the side plate. A side plate which is incorrectly mounted or mounted with force, will shorten the lifetime of the drum bearings.
- Always check the belt tension after mounting a drum (see chapter 6.2).

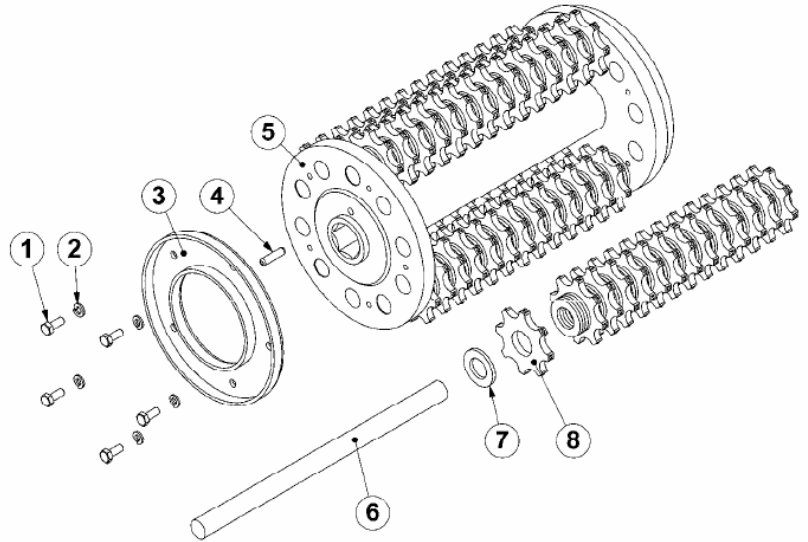
Never use the machine without a side plate or with an incorrect mounted side plate!



4.7 The scarifying drum

The heart of the scarifier is the scarifying drum. The assembly of the scarifying drum is very easy. Each tool will be pushed on the axle together with spacers according to the enclosed assembly plans (Service manual). The spacers ensure the necessary distance between the flails or cutters. The enclosed assembly plans take into account the required lateral clearance of the flails or cutters, approximately 3 - 5 mm.

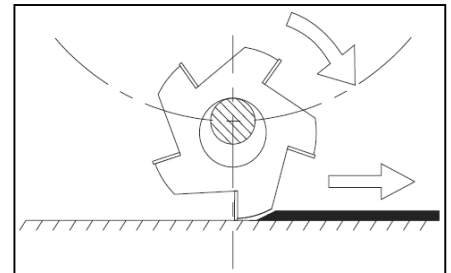
1	Safety screw
2	Spring lock washer
3	Lock plate
4	Pin
5	Scarifying drum
6	Axle
7	Distance ring
8	Scarifying flail or cutter



4.8 The scarifying flails and cutters

Through the use of different flails or cutters, and with a few alterations, it is possible to adjust the Blastrac scarifier for the applications or rather for the requirements of the specific surfaces. All the machines work according to the principle of a loose tool seated on an axle. The rotation of the scarifying drum generates a centrifugal force on the flails or cutters which are kept by the lateral axles. The flails will be thrown outwards as far as the clearance between flail and axle allow it. When striking the surface, particles will be taken off of the surface and the flail will rebound in the maximum inner position. So to avoid significant wear on the axles as well as on the drum, it is required that the flails still have enough clearance on the axle when striking the surface.

The tools must hit the floor by centripetal force and not because the axle pushes the tool (see drawing below).



MPD335-522L24S
DRUM COMPLETE
WITH MPL24 CUTTERS



MPD335-522L29S
DRUM COMPLETE
WITH MPL29 CUTTERS



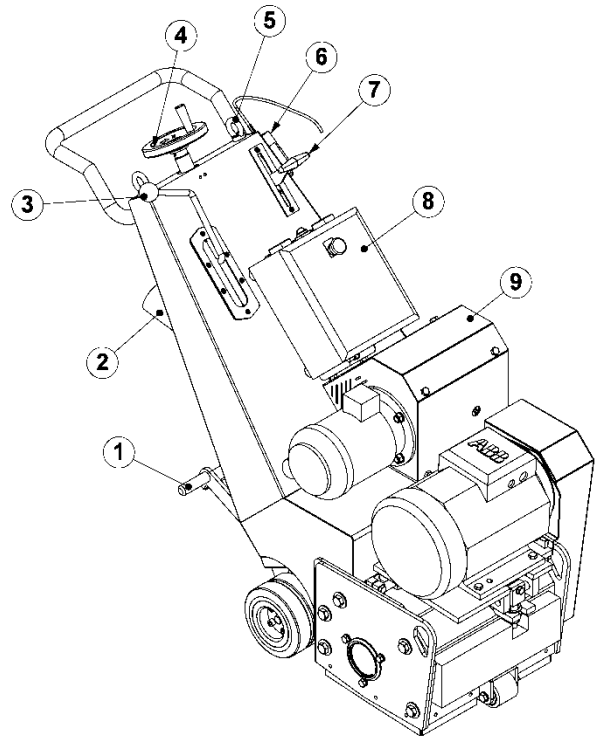
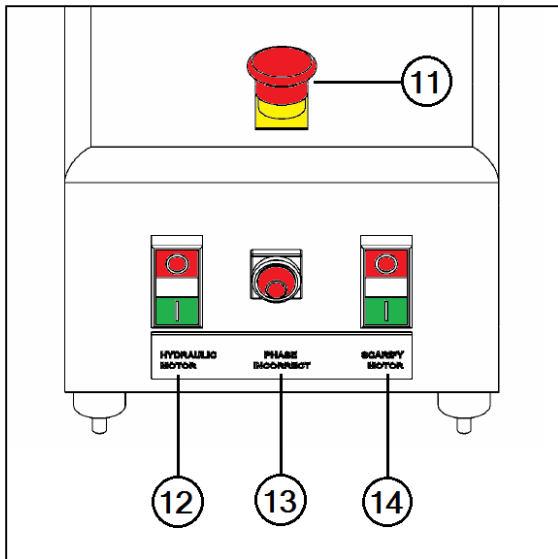
MPD335-620L60S
DRUM COMPLETE
WITH MPL60-1
CUTTERS



MPD335-522L120S
DRUM COMPLETE
WITH MPL120 CUTTERS



4.9 Control devices



BMP-335 EHY	
1	Treadle of drive system
2	Dust collector connection
3	Quick lift lever
4	Handwheel working depth
5	Lifting eye
6	Dead man switch
7	Driving lever
8	Electrical panel
9	Hydraulic pump housing
10	
11	Emergency shutdown button
12	"Hydraulic motor" ON/OFF buttons
13	Control light "Phase incorrect"
14	"Scarify motor" ON/OFF buttons
16	Plug for power supply



Using a Screwdriver the phases can be inverted

1. Treadle of drive system

It is possible to transport the machine without the use of the motor by pushing up the treadle (1). The drive wheels are disengaged of the drive motors now. In the downward position the wheels are engaged to the drive motors. Make sure that the floor is flat, because the machine is uncontrolled now! **It is very dangerous to drive the machine on a grade or ramp when the treadle is in upwards position!**

2. Dust hose connection

The dust hose to the dust collector must be connected here. Use hose clamps and industrial tape for a reliable connection.

3. Quick lift lever

In the upright position the drum is lifted off of the ground, in the downwards position, the drum is put on the ground. The quick lift lever enables the operator to lift the complete drum without changing the fine adjustment of the working depth. The lever must be in the upright position before start-up, in order to prevent a run out of the motor under full load.

4. Fine adjustment

The working depth can be adjusted by turning the fine adjustment wheel. The scarifying depth must be adjusted considering the surface to be treated. The progressively depth adjustment enables the flails or cutters to impact on the surface being treated only at the required and necessary depth. The flails or cutters must be unhindered thrown up through the centrifugal force and they must turn free over the



lateral axle. When the depth adjustment is correctly selected, the scarifier will run quiet and constant. Oval worn flails or cutters as well as broken drum axles indicate a too "high" scarifying depth adjustment.

6. Dead man's switch

The key of the dead man's switch is attached to a cord. The cord should be fastened on the arm of the operator. When the key is pulled out, the machine will stop immediately.

7. Driving lever

The drive unit control lever is used to control the machine's drive unit. The function of the drive unit control lever begins after adjusting the working depth of the machine with the quick lift. You should pay attention that the drive unit control lever is locked in the neutral position before manipulating the quick lift.

11. Emergency shutdown button

Red mushroom-shaped shutdown push button, this button cuts off the power to the motors. Turn to unlock the emergency stop button.

12. Hydraulic motor ON/OFF buttons

Pressing the green start button will start the driving motor, use the driving lever to start driving. The hydraulic motor has to be switched on before switching on the scarify motor. The red button will stop the hydraulic motor.

13. Control light "Phase incorrect"

This lamp shines when the phases of the power supply are incorrect. The power plug has a built in phase inverter for easy and quick changing of the phases if the control light "Phase incorrect" lights up.

14. "Scarify motor" ON/OFF buttons

Pressing the green start button will start the scarify motor. Before starting the scarify motor, the treadle of the drive system must be in the downwards position and the quick lift lever must be in the upwards position.

16. Plug for power supply

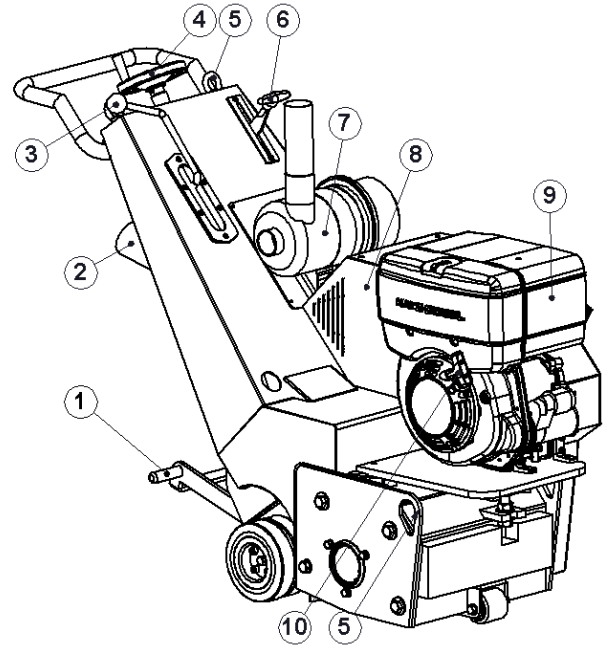
The plug for the power supply has a built in phase inverter. If the motor turns the wrong way, just unplug the machine and change the phase inside the plug.



4.10 Control device BMP-335 GHY



Photo 1.



BMC-335 GHY	
1	Treadle of drive system
2	Dust collector connection
3	Quick lift lever
4	Handwheel working depth
5	Lifting eye
6	Driving lever
7	Air filter
8	Hydraulic pump housing
9	Diesel motor
10	Ignition lock
11	Speed control lever
O	Position 0
I	Position I
II	Position II
A	Engine temperature display
B	Oil pressure display
C	Charge control
D	Operating display
E	Earth switch



1 Treadle of drive system

It is possible to transport the machine without the use of the motor by pushing up the treadle (1). The drive wheels are declutched of the drive motors now. In the downward position the wheels are engaged to the drive motors. Make sure that the floor is flat, because the machine is uncontrolled now! **It is very dangerous to drive the machine on a grade or ramp when the treadle is in upwards position!**

2 Dust hose connection

The dust hose to the dust collector must be connected here. Use hose clamps and industrial tape for a reliable connection.

3 Quick lift lever

In the upright position the drum is lifted off of the ground, in the downwards position, the drum is put on the ground. The quick lift lever enables the operator to lift the complete drum without changing the fine adjustment of the working depth. The lever must be in the upright position before start-up, in order to prevent a run out of the motor under full load.

4 Fine adjustment

The working depth can be adjusted by turning the fine adjustment wheel. The sawing depth must be adjusted considering the surface to be treated. The progressively depth adjustment enables the sawing blades to saw into the surface being treated only at the required and necessary depth. When the depth adjustment is correctly selected, the machine will run quiet and constant.

6 Driving lever

The drive unit control lever is used to control the machine's drive unit. The function of the drive unit control lever begins after adjusting the working depth of the machine with the quick lift. You should pay attention that the drive unit control lever is locked in the neutral position before manipulating the quick lift.

10 Ignition lock

The ignition lock is used to start the BMC 335 GHY electrical.

11 Speed control lever

With the speed control lever you can change the speed of the diesel engine. The speed control lever is also used to shut down the engine.

A Engine temperature display

If the engine temperature display lights up, the cylinder head temperature is too high. Do not start the engine. If the engine is running, switch off the engine immediately! Danger of engine damage.

B Oil pressure display

If the oil pressure display lights up, switch off the engine immediately! Danger of engine damage.

C Charge control

If the charge control lights up during operation, there is a fault in the alternator. In position (I) the display lights up, but after starting the engine it will go out.

D Operating display

Lights up during operation when there is no engine fault.

E Earth switch

Disconnects the batteries from the system.



5. Operating

During operating the BMP-335, the following additional safety instructions must be followed closely. Before switching on the machine make sure that no-one can be endangered when the machine starts up.

All persons in the proximity of the machine must wear safety glasses with lateral protection as well as safety shoes and ear protection. The operator is obliged to wear close-fitting protective clothing and a dust mask.

5.1 Before starting up

- Make sure that the drum doesn't hit the ground. The quick lift lever must be in upper position and the fine adjustment must be turned up.
- Connect the scarifier and the dust collector with the dust hose. Make sure there is a good and airtight connection, use hose clamps and industrial tape.
- Connect the scarifier and the dust collector with the power supply. Make sure the right connection is available for the machines. (only BMP-335EHY)

5.2 Procedure to start work (EHY version)

- Turn the dust collector on.
- Put the cord of the dead man switch around the left wrist.
- Start the machine by pushing the buttons 'hydraulic motor ON' and 'scarify motor ON' (BMP-335EHY) or by pulling the start cord of the diesel motor. (BMP-335GHY)
- Check if the drum turns the right direction. (Only BMP-335EHY)
- Slowly let down the quick lift lever.
- Turn the fine adjustment clockwise until the desired scarifying depth is reached.
- Push the driving lever a little bit forward to make the machine go forward.



Procedure to start work (GHY version)

- Turn on the dust collector
- Check if the treadle of the drive system is down, and the driving lever is in the neutral position.
- Turn the earth switch into a vertical position. See photos 2.1.
- Turn the starting key to position "0", every time you want to start the engine. (See photo 2.2).
- Check the throttle lever, first move the throttle lever to the stop position. (see photo 2.3)

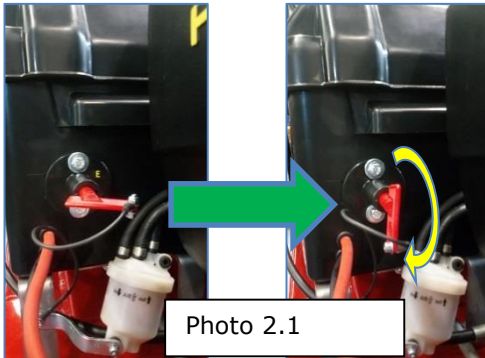


Photo 2.1



Photo 2.2



Photo 2.3

- Depending on the situation, place the throttle lever in either the "1/2" or "start" position. (see photo 3 and 4).



Photo 3. "1/2" position



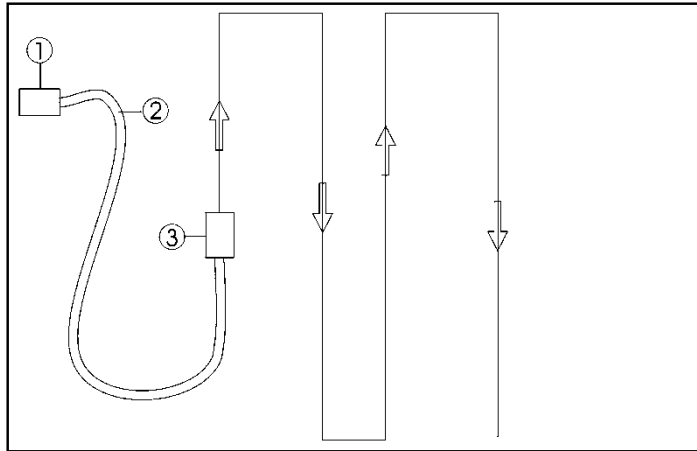
Photo 4. "start" position.

- Insert the starting key all the way and turn to position (I). (see photo 2.2)
- Turn the key to position (II). (see photo 2.2). As soon as the engine is running, release the starting key. The starting key springs back into position "I" and remains in this position during operation.
- Slowly let down the quick lift lever.
- Turn the fine adjustment clockwise until the desired depth is reached.
- Push the driving lever forward to drive the machine forwards. This must be done once the machine is on the floor.



5.3 Operating during scarifying

Carry out work in parallel tracks in such a way that the dust hose and electric cable do not become twisted. The next figure shows the recommended working paths leading away from the dust collector.



1	Dust collector
2	Dust hose and electric cable
3	Scarifying / milling machine

Make sure that no vehicles, such as forklift trucks and other equipment run over the electric cable and the dust hose.

The selection of the correct advancing speed of the machine is important for a good result. In the case that the surface has different characteristics (e.g. different hardness or different coating thicknesses), a uniform result can be achieved by varying the advancing speed during scarifying / milling.

The advancing speed depends on the material of the surface to be treated and the desired profiling.

The correct advancing speed can be found out by observing the treated surface and varying the speed during the scarifying / milling process.

Slight profiling on concrete requires a higher speed than coarse profiling.



5.4 Switching off the machine EHY and GHY versions

Switch off the machine EHY

- Pull the quick lift lever up and turn the fine adjustment until the cutters do not hit the ground anymore.
- Push both red buttons on the electrical box.
- Wait until all turning parts have reached a standstill.
- Switch off the dust collector.
- Disconnect the power supply.
- Pay attention that all twisting and turning machine parts have reached a standstill before inspection or maintenance duties are carried out.

Switch off the machine GHY

versions up to serial number: 25697B (11-2018)

- Pull the quick lift lever up and turn the fine adjustment until the cutters do not hit the ground anymore.
- Push the speed control lever all the way to the "Stop" position. (see photo)



Photo speed control lever.



Stop position.

- Wait until all turning parts have reached a standstill.
- Remove the starting key.
- Seal the ignition lock with the protective cap.
- Switch off the dust collector.
- Turn the earth switch into a horizontal position. See photos below.



- Pay attention that all twisting and turning machine parts have reached a standstill before inspection or maintenance duties are carried out.



Switch off the machine (GHY)

Versions from serial number: 25697B (11-2018).

There are two options of switching off the machine.

First option.

- Pull the quick lift lever up and turn the fine adjustment until the cutters do not hit the ground anymore.
- Push the speed control lever all the way to the "Stop" position. (see photo)



Photo speed control lever.



Stop position.

- Wait until all turning parts have reached a standstill.
- Remove the starting key.
- Seal the ignition lock with the protective cap.
- Switch off the dust collector.
- Turn the earth switch into a horizontal position. See photos below.



- Pay attention that all twisting and turning machine parts have reached a standstill before inspection or maintenance duties are carried out.



Second option.



- Pull the quick lift lever up and turn the fine adjustment until the cutters do not hit the ground anymore.
- Switch the starting key to position "0", the fuel shut-off valve shuts off the fuel supply to the injection pump. The engine switches off.
- All indicator lamps go out.
- Remove the starting key.
- Seal the ignition lock with the protective cap.
- Wait until all turning parts have reached a standstill.
- Switch off the dust collector.
- Turn the earth switch into a horizontal position. See photos below.



- Pay attention that all twisting and turning machine parts have reached a standstill before inspection or maintenance duties are carried out.



5.5 Refuelling the engine.



DANGER



Fire hazard from fuel.

Leaked or spilled fuel can ignite on hot engine parts and cause serious burn injuries.



- Only refuel when the engine is switched off.
- Never refuel in the vicinity of open flames or sparks that can cause ignition.
- Do not smoke.
- Do not spill fuel.



CAUTION



Danger of environmental damage from spilled fuel.

- Do not overfill the fuel tank and do not spill fuel.
- Collect any leaking fuel and dispose of it according to local environmental regulations.



CAUTION

Engine damage from using low quality fuel.

The use of fuel that does not meet the specifications can lead to engine damage.

- Only use the fuel specified in chapter 5.6 Fuel type, page 25.
- The use of fuel that does not meet specifications requires approval by Motorenfabrik HATZ (main plant).

5.6 Fuel type

All types of diesel fuel that meet the minimum requirements of the following specifications are suitable:

- Europe: **EN 590** or
- UK: **BS 2869 A1 / A2** or
- USA: **ASTM D 975- 1D / 2D**

Winter fuel

When outside temperatures drop below 0°C, use winter fuel or mix in petroleum in advance:

Lowest ambient temperature at start [°C]	Percentage of petroleum [%]for	
	Summer fuel	Winter fuel
0 to -10	20	-
-10 to -15	30	-
-15 to -20	50	20
-20 to -30	-	50



5.7 Checking and refilling the engine oil

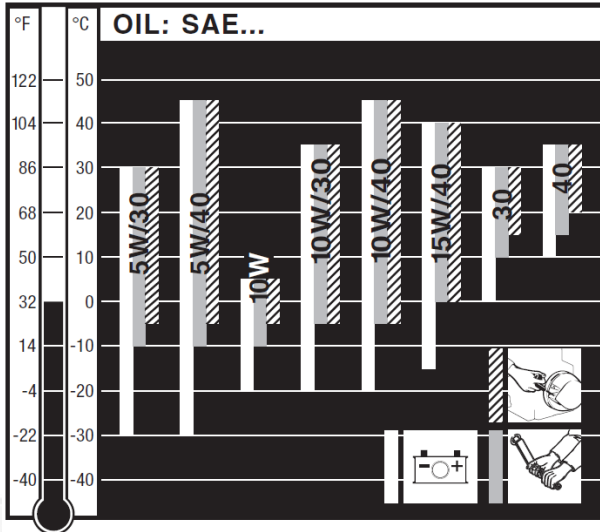
Oil quality

All brand name oils that satisfy at least the following specification are suitable:

- **ACEA – B3 / E4** or better
- **API – CF / CH-4** or better

If engine oils of a low quality standard are used, the oil change interval must be reduced from 250 to 150 or from 500 to 250 operating hours depending on the engine specification.

Oil viscosity



Choose the recommended viscosity based on the type of start (recoil, crankhandle or electric) and on the engine temperature at which the engine will be operated.

CAUTION

Engine damage from unsuitable engine oil.

Unsuitable engine oil considerably reduces engine service life.
Only use engine oil that fulfils the specifications stipulated above.



CAUTION



Caution
Hot surface

Danger of burns.

There is a danger of burns when working on a hot engine.



Wear safety gloves.



CAUTION



Danger of injury.

Prolonged contact with engine oil can lead to irritation of the skin.



Wear safety gloves.

If there is contact with the skin, thoroughly wash the affected areas of the skin with soap and water.



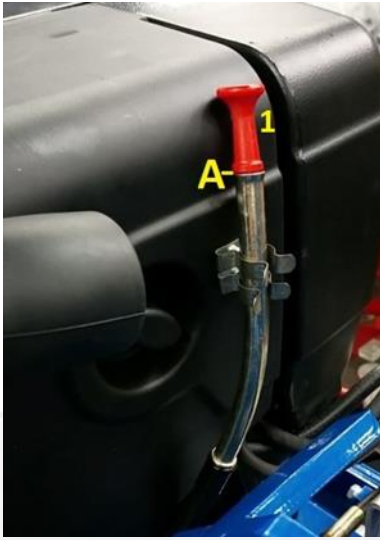
CAUTION

Danger of later engine damage.

- Operating the engine with an oil level below the **min.** mark or above the **max.** mark can lead to engine damage.
- When checking the oil level, the engine must be horizontal and have been switched off for a few minutes.

Valid for GHY version from serial number: 25697B (11-2018).

Checking oil level/adding oil



1	Dipstick
2	Oil plug

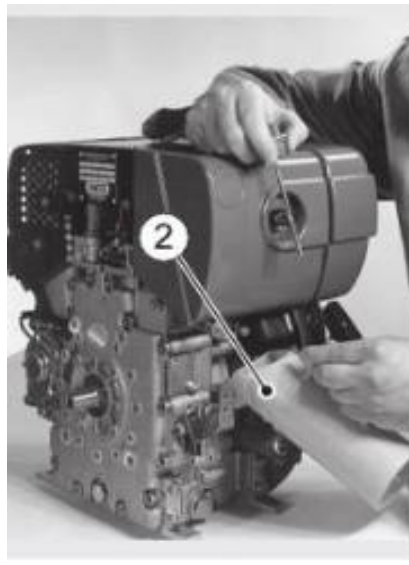
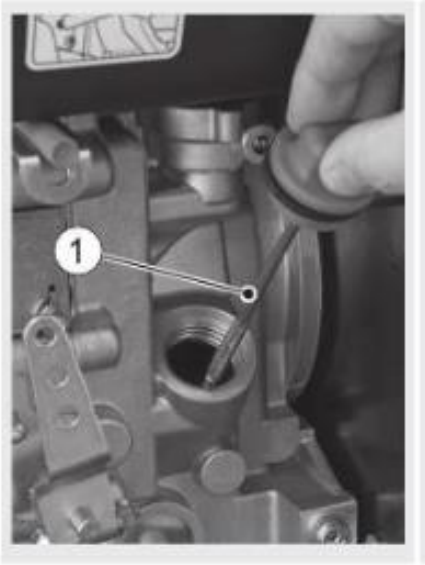
Procedure.

- 1 Switch off the engine and wait several minutes for the engine oil to collect in the crankcase. engine must but level.
- 2 Remove contamination on the engine in the area of the dipstick.
- 3 Pull out the dipstick (1) and clean it.
- 4 Reinsert the dipstick (1) all the way to pos. A.
- 5 Pull out the dipstick again and check the oil level.
- 6 If the oil level is close to the min. mark, add engine oil to the engine.
- 7 Remove contamination on the engine in the area of the Oil plug (2).
- 8 Remove Oil plug (2)
- 9 add engine oil to the max. mark.
- 10 Close Oil plug (2)
- 11 For the specification and viscosity, see chapter **5.7 Checking and refilling the engine oil.**
- 12 Reinsert the dipstick(1) all the way to pos. A.



Valid for GHY versions up to serial number: 25697B (11-2018).

Checking oil level/adding oil



1	Dipstick
2	Oil refilling container

Procedure.

- 1 Switch off the engine and wait several minutes for the engine oil to collect in the crankcase. engine must but level.
- 2 Remove contamination on the engine in the area of the dipstick.
- 3 Pull out the dipstick (1) and clean it.
- 4 Reinsert the dipstick and screw it tight.
- 5 Pull out the dipstick again and check the oil level.
- 6 If the oil level is close to the min. mark, add engine oil to the max. mark.
- 7 Reinsert the dipstick and screw it tight.
- 8 For the specification and viscosity, see chapter **5.7 Checking and refilling the engine oil.**



6. Maintenance

Please read the OWNER'S MANUAL of the diesel engine for the proper maintenance schedules.

Pay attention to Chapter 3 "**Safety**" during maintenance and repair works.

Failures due to inadequate or incorrect maintenance may generate very **high repair costs** and long standstill periods of the machine. **Regular** maintenance therefore is imperative.

Operational safety and service life of the machine depends, among other things, on proper maintenance.

The following table shows recommendations about time, inspection and maintenance for the normal use of the machine.

Operating hours/ time period	Inspection points, maintenance instructions
12 h after repairing	Check all accessible screw connections for tight seat.
Daily and prior to starting work	Check that all safety devices working adequate. Check whether there is any foreign matter in the scarifying drum. Clean the scarifying drum specially in case of moist surfaces. Check the scarifying drum, lateral axles, tools and housing for wear. Check the tension of the belt, stretch again if necessary. Check the electric connections for sediments of dirt or foreign bodies. Check the electric motors for dirt and other contaminants. Check all safety devices working adequate. Check the function of the residual current operated device. Check the hose connections for tightness and fixed seat. Make sure that the dust bin is emptied. Check the oil level in the hydraulic reservoir.
Every month	Grease the bearing.
Annually	Full overhaul and cleaning of the complete machine.

The time indications are based on uninterrupted operation. When the indicated number of working hours is not achieved during the corresponding period, the period can be extended. However a full overhaul must be carried out at least once a year.

Due to different working conditions it can't be foreseen how frequently inspections for wear check's, inspection, maintenance and repair works ought to be carried out. Prepare a suitable inspection schedule considering your own working conditions and experience.

Pay attention to unusual noises or strong vibrations. Check for the cause of every big change. Call a technician if you have doubts about the cause or when a repair without a technician seems not possible without damages. Only use genuine Blastrac spare parts.

Our specialists will be happy to assist you with more advice.

Prior to any repair works on the machine and its drives, secure the machine against unintentional switching on. Put the machine to its safety off position.

The machine is in a safe condition when it cannot generate any hazard.

Follow additional operating and maintenance instructions of original equipment manufacturer if included during your service and maintenance work.

Further is advised:

Store the cleaned and dry machine in a dry and humid free room. Protect the electrical motors from moisture, heat, dust and shocks.

All repair work must to be done by qualified Blastrac personnel, this to guarantee a safe and reliable machine.

Any guarantee on the machine is expired when:

- Non original Blastrac parts have been used
- Repair work is not done by qualified Blastrac personnel
- Changes, add on's or conversions are undertaken without written permission of Blastrac BV



Screws, bolts etc. that have been removed must be replaced with those of the same quality, strength, material and design.

Do not weld, flame cut or perform grinding works on or near the machine. Danger of fire or explosion exists! Provide adequate ventilation when working in a confined space. Secure the maintenance area if necessary.

6.1 Maintenance of the bearings

On the left hand side, there is an open bearing. This bearing should be greased to keep the dust out of the bearing.

With normal daily use the bearing should be greased once a month.

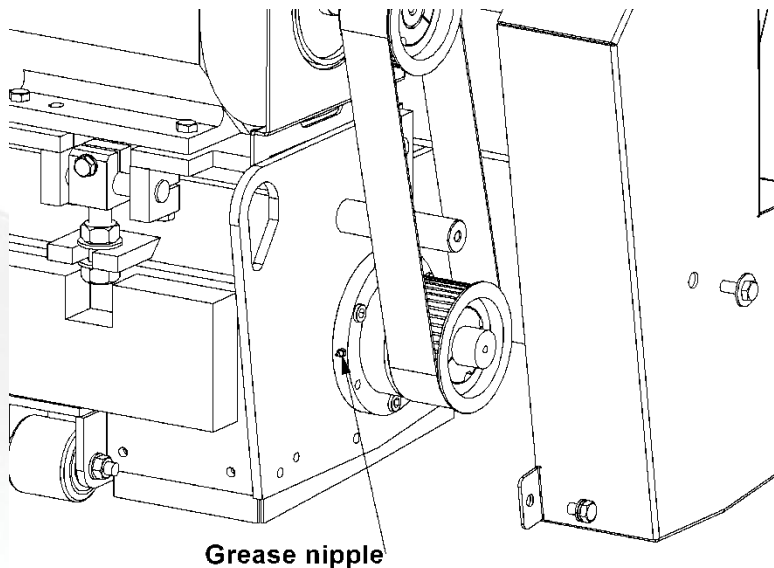
The quantity of grease should be 5-10 gram. This is equal to 2-6 pumps of grease.

Be careful, too much grease is not good for the bearing!

Use the grease which is recommended by Blastrac, this is E08729 – bearing grease.

This grease is specially made for this kind of application.

Using other grease will damage the bearing.



6.2 The scarifying drum

The scarifying drum is a very important component of your scarifier, so you should pay special attention while maintaining and repairing.

The main shaft has to be cleaned and lubricated when you replace the scarifying drum, so that any rust or sediment can't complicate your work when you change the drum the next time.

If the scarifier drum should be disassembled in order to rearrange it in a different way or to replace wear parts, it is absolute necessary to observe the quantity and quality of flails / cutters and spacers as described in the assembly plans shown in the service manual. Also, pay attention that the bores on the cover plate for the lateral axle are not worn out and all screws are tightened. In order to obtain a uniform and perfect scarifying pattern on the surface, you need to adjust the correct scarifying working depth, check the correct assembly of the scarifying drum as well as the appropriate selection of tools for the surface to be treated.

If the scarifying drum is not uniformly assembled the machine will become unbalanced and excessive wear, will arise. Blastrac will not feel responsible for any faulty parts, that are damaged caused by inappropriate assembly.

Always check the belt tension after mounting a drum.



6.3 Belt drive

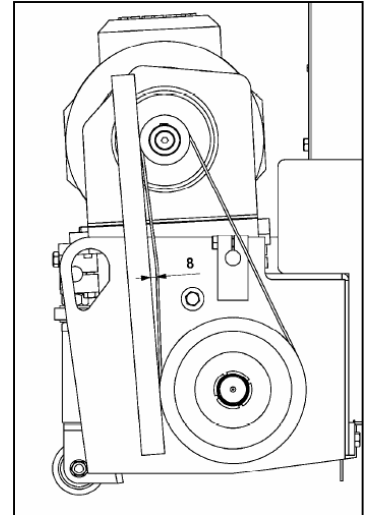
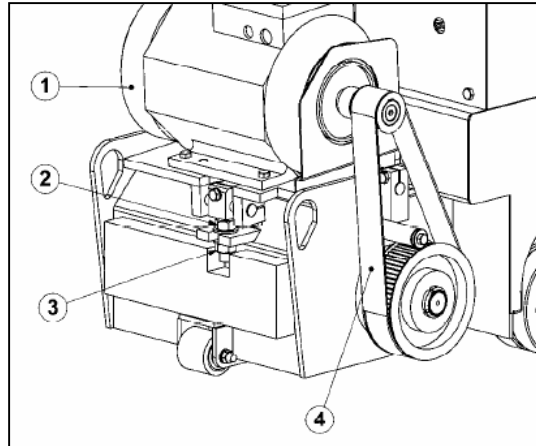
The correct belt tension is of utmost importance in order to obtain a perfect power transmission and to reach the usual working life of the belt. Too low or too high tension can cause a premature breakdown of the belt. Excessive belt tension results in damaged bearings at drives or scariying drums.

If you change the height of the motor plate, the tension of the belt can be adjusted.

Unscrew the counter nut (2) and turn the adjusting nut (3) to change the height of the motor plate and thus the belt tension. Check the tension by pressing on the belt, it has the correct tension if you can press it in for approximately 8 mm. Fix the setting with the counter nut.

Always check the belt tension after mounting a drum.

1	Motor
2	Counter nut
3	Adjusting nut
4	Belt





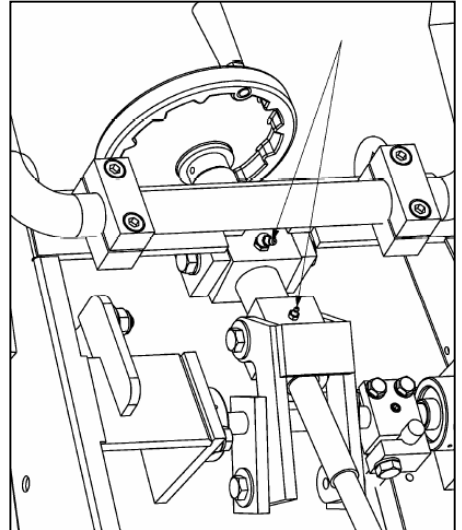
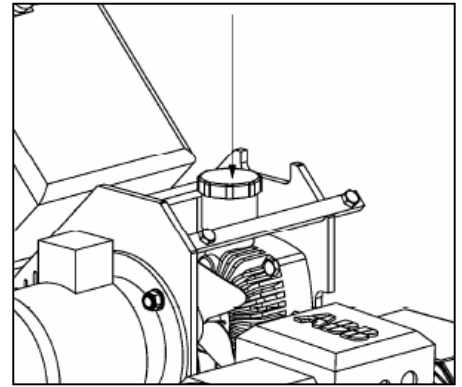
6.4 Lubrication

The observance of our lubrication instructions will protect against premature maintenance and repair work on the machine.

Dirt and foreign bodies could considerably reduce the working life of the bearings or other moving parts of the machine. Therefore the lubrication points must be cleaned thoroughly before lubricating.

Lubrication and all required work has to be done while the machine is disconnected from the power supply, and in its safety off position.

- Check the oil level in the hydraulic reservoir. (E00481 Hydraulic oil HV-46)
- Check the hand wheel depth adjustment for smooth running.
- Lubricate the 2 nipples under the hand wheel for depth adjustment.



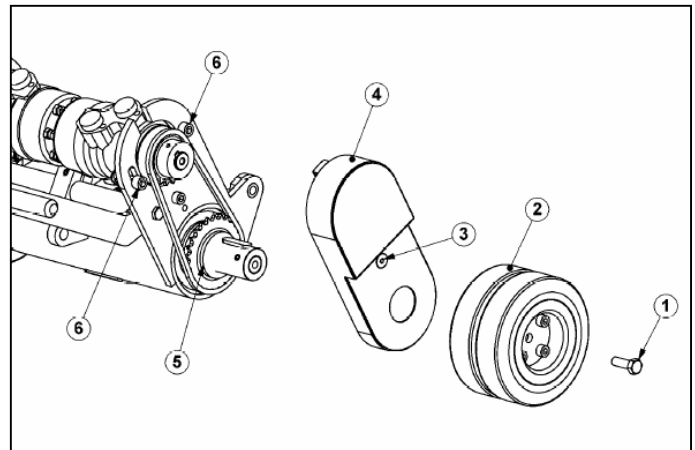
Disassemble the drive wheel (2) by loosening the bolt (1).

Remove chain guard (4) by loosening the bolt (3).

Apply oil only in this section and clean up all parts in order to remove excessive oil.

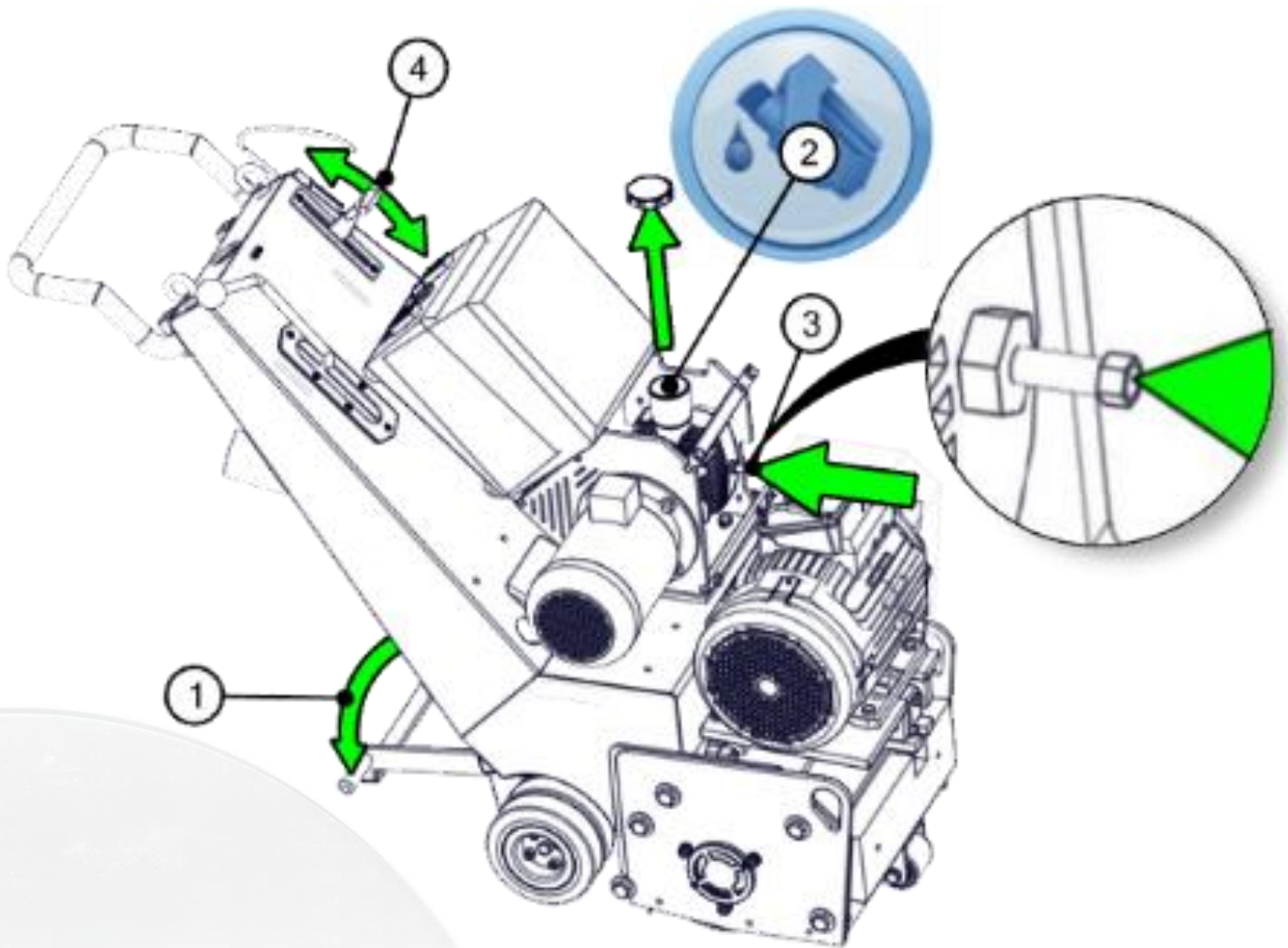
Regularly check the correct tension of the chain. Adjust the tension by loosening the bolts (6), turn hydraulic motor clockwise and tighten the bolts again.

Apply oil behind felt seal (5) when it is hard to move the machine around in free-wheel position.





6.5 Venting hydraulic pump E03996_1



1. Push the treddle (#1) down into drive-mode
2. Fill the reservoir (#2) to oil level cold mark with E00481 Hydraulic oil.
3. Keep the "dump valve shaft" (#3) pushed in.
The easiest way is to use a piece of wood approximately 1 meter long.
4. Drive the machine forwards and backwards (#4) while keeping "dump valve shaft" (#3) pushed in.
Note: It could take up to 15 minutes before all air-bubbles are out of the system.
5. Fill reservoir (#2) to proper fluid level.
(Level indicator is shown on the reservoir)



6.6 Diesel engine maintenance

The maintenance points described in this manual are only some highlights taken from the Hatz manual.

Read the OWNER'S MANUAL of the Hatz diesel engine for the proper maintenance schedules.

New engines

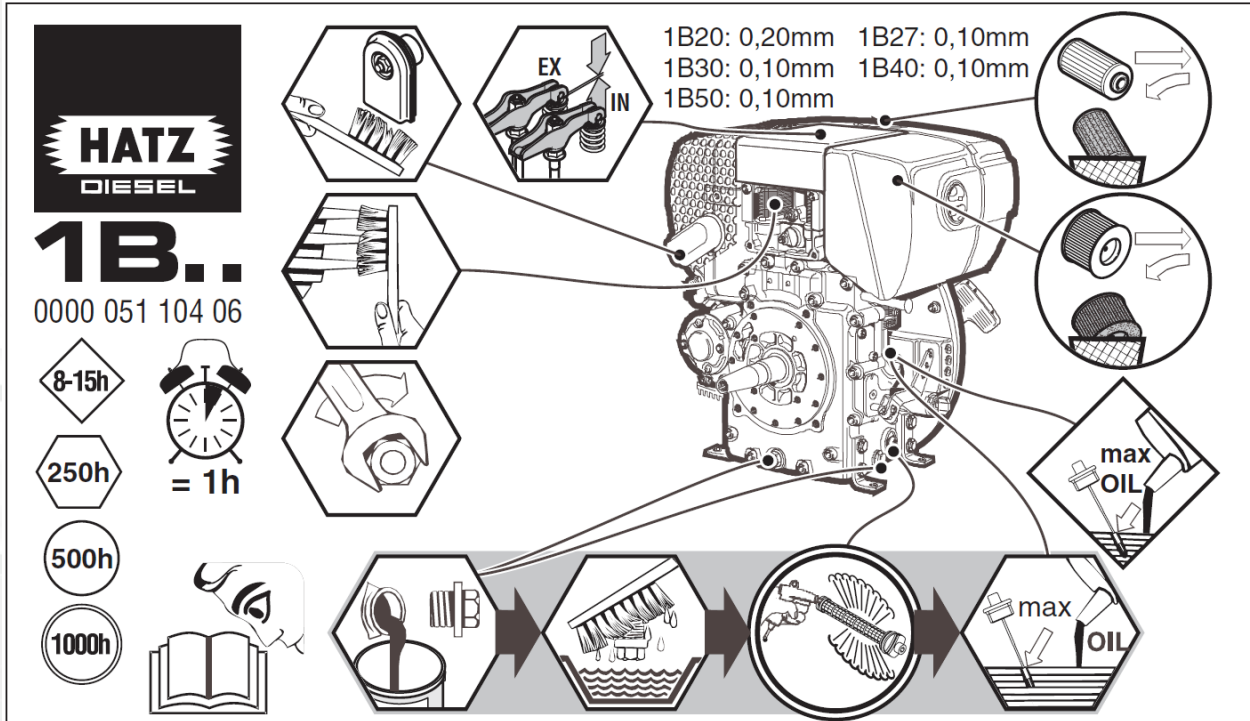
In new and generally overhauled engines, after **25 operating hours**:

- Change the engine oil
- Check the tappet clearance and adjust if necessary
- Check the screw connections (do not retighten the screws for attaching the cylinder head)

In case of a low number of operating hours, change the engine oil no later than every 12 months, regardless of the actual number of operating hours. The interval at which maintenance work should be performed on the fuel filter depends on the cleanliness of the fuel in use and may need to be shortened to 250 operating hours.

The maintenance plan shown below is supplied with the engine.

- It should be mounted on the engine or machine in a clearly visible location.
- The maintenance intervals specified on the maintenance plan must be adhered to (Consult the Hatz manual).









Maintenance plan

The maintenance step/check described on this page, contains only some highlights taken from the Hatz manual.

Read the OWNER'S MANUAL of the Hatz diesel engine for the proper maintenance plan.

Consult the Hatz diesel engine's manual before performing maintenance

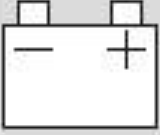


Symbol	Maintenance interval	Maintenance step/check
	Every 8–15 operating hours or every day before starting	Check the oil level.
		Check the intake area of the combustion air.
		Check the cooling air area.
	Every 250 operating hours	Change the engine oil
		Check and set the tappet clearance
		Clean the cooling air area.
		Check the screw connections.
		Clean the screen insert in the exhaust pipe.
	Every 500 operating hours	Change the fuel filter.
		Maintain the dry air filter.
	Every 1000 operating hours	Change the oil filter



7. Troubleshooting

Fault	Possible cause	Remedy
Excessive vibration or/and Unusual noises	Imbalance due to worn or broken tools. Defective bearing. Wrong tension of the belt. Defective motor. The scarifying setting is too deep.	Replace all worn or broken parts. Check the bearing on the axle drive shaft and replace if necessary. Check the tension of the belt, replace the belt if necessary. Replace the motor. Reduce the scarifying depth.
Reduced or no scarifying performance	Tools have reached the maximum permissible wear. Inappropriate tools for the application. In case of internal combustion engine, follow the information of the manufacturer.	Replace the worn parts. Replace the tools with appropriate tools for the surface to be treated.
Motor does not switch on	Missed phase. Wrong phase. Defective Component. Dead man's switch is not activated.	Check the mains power supply and try to switch on again. Adjust phase. Find fault and replace defective component. Follow the enclosed information of the manufacturer (Diesel-motor). Put the key of the dead man's switch in.
Motor protection switch triggers while running	Motor protections switch triggered because of overload . Motor has a defect.	Reduce the scarifying depth. Check the motor.
Drive unit does not respond	Treadle is put down too fast. Oil-level is too low. Wrong turning direction of the motor.	Put treadle in downwards position slowly and move the machine forwards at the same time. Check the oil-level and refill if necessary. Check the turning direction.



	<p>Charge control indicator stays on, or lights up.</p>	<p>Fault in the alternator or alternator charging circuit. The battery is no longer charged. Eliminate the fault immediately. Consult the Hatz engine manual.</p>
	<p>Oil pressure display indicator stays on, or lights up.</p>	<p>Switch off the engine immediately! Danger of engine damage. Check the oil level. Contact Hatz service if the oil level is correct.</p>
	<p>Engine temperature display indicator stays on, or lights up.</p>	<p>Switch off the engine immediately! Danger of engine damage. Engine temperature is impermissibly high. Consult the Hatz engine manual.</p>





8. Technical data

	BMP-335EHY 3x400V	BMP-335EHY 3x230V	BMP-335GHY
Power consumption	12.1 kW	12.1/13.8 kW	7.5kW
Electrical connection	3x400V / 50Hz	3x230V 50/60Hz	-
Working width	335 mm	335 mm	335 mm
Rotation speed drum	1000 min ⁻¹	900/1060 min ⁻¹	1000 min ⁻¹
Length	1400 mm	1400 mm	1400 mm
Width	605 mm	605 mm	605 mm
Height	1075 mm	1075 mm	1075 mm
Weight	405 kg (excl. drum)	405 kg (excl. drum)	370 kg (excl. drum)
Noise emission level (Under load) Uncertainty	96 dB(A) 5 dB(A)	96 dB(A) 5 dB(A)	96 dB(A) 5 dB(A)
Sound power level (Under load) Uncertainty	115 dB(A) 5 dB(A)	115 dB(A) 5 dB(A)	115 dB(A) 5 dB(A)
Vibration level (Hand-arm) Uncertainty	A _{hv} 6,9 m/s ² K 2,3 m/s ²	A _{hv} 6,9 m/s ² K 2,3 m/s ²	A _{hv} 6,9 m/s ² K 2,3 m/s ²
Ambient temperature	-5°C ~ 40°C	-5°C ~ 40°C	-5°C ~ 40°C
Dust hose connection	Ø75 mm	Ø75 mm	Ø75 mm

Design and specifications are subject to change without notice by Blastrac BV



IMPORTANT NOTES:

Noise and vibration measurements were taken during heavy operation on concrete. The noise and vibration levels depend on the working depth, which is in turn determined by the unevenness of the surface. The impact force of the tools onto the surface is the biggest factor in both noise and vibration levels.

The indicated values are measured on new machines. Noise and vibration levels will vary in different circumstances. Area influences like open outside or closed inside space, ambient temperature, different surfaces to be treated, daily use, different tools or accessories, poor maintenance, etc. will give different values at all time and could increase the exposure level over the total working period.

The declared vibration and noise emission levels represent the main applications of the machine. The values may be measurements from a representative sample of technically comparable machinery. The values may be used for a preliminary assessment of exposure.

A precise estimation of the level of exposure to vibration and noise should also take in account the times when the machine is switched off or even running, but not actually in use. This may significantly decrease the exposure level over the total working period.

Identify additional safety measures to protect the operator from the effects of vibration and noise such as: proper and regular maintenance of the machine and the accessories, keeping the hands warm, provision of proper ear protection and organization of work patterns for example by using rotation schedules. The use of anti-vibration gloves could also decrease the effects of the vibrations transmitted.

Always use ear protection when working with this machine.

Because the value is above 2,5 m/s², we recommend taking measures to decrease hand-arm vibrations.

Tips for decreasing the exposure to hand- arm vibrations:

- Protect the hands with vibration dampening gloves
E12000 – Blastrac Anti-vibration gloves
- Switch off the motor when driving backwards
- Check and replace the tools regularly
- Proper maintenance of the machine
- Scheduled replacement of the shock absorbing machine parts
- Keep the hands warm
- Prepare a work schedule and plan in rest periods

Old equipment contains valuable materials which are valuable for re-processing. **The machine parts must not be thrown away in the normal household waste**, but should be disposed of at a suitable proper collection system, e. g. via your communal disposal location. This way the materials can be re-used in an environmentally responsible manner.

Despite the fact that this guide is made with care, Blastrac takes no liability for errors in the manual and the possible consequences. We are naturally very interested in your findings and additions. No part of this publication may be reproduced and / or published in print, photocopy, or other form without prior permission by Blastrac.



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