OPERATION MANUAL

Reversible vibratory plate

VDR52, 52H, VDR63, 63H

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ORIGINAL OPERATION MANUAL (2006/42/EC)

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(11/2011)

ES/EU PROHLÁŠENÍ O SHODĚ *(original)*

EC/EU Declaration of Conformity (original)

Prohlašujeme, že zařízení definované níže uvedenými údaji je ve shodě s požadavky níže uvedených NV a směrnic
We declare that the trough below mentioned specifications defined equipment complies with requirements of below cited Directives

Výrobce *(manufacturer):* **Sídlo firmy** *(company domicile):*	**NTC STAVEBNÍ TECHNIKA spol. s r.o.** **Jiřinková 120, Česká Skalice 552 03**
IČ *(identification number):*	**63221152**
Osoba pověřená sestavením a uchováváním technické dokumentace: *(Person in charge of assembling and storing technical documentation)*	**NTC STAVEBNÍ TECHNIKA spol. s r.o.**
Název *(model):*	**VIBRAČNÍ DESKA REVERZNÍ / REVERSIBLE VIBRATORY PLATE**
Typ *(type):*	**VDR52, 52H, 63, 63H**
Výrobní číslo *(serial number)*	
Popis *(description):*	Vibrační deska reverzní je určena pro zhutňování všech druhů zemi, pro zhutňování příkopů a ploch, jakož i pro zhutňování asfaltových povrchů. Všechny typy vibračních desek řady VDR jsou osazeny usměrněným vibrátorem. Plynulým přesouváním vzájemné polohy nevývažků se dosahuje změny výslednice odstředivé síly, což umožňuje plynulou změnu pojezdu vpřed i vzad nebo zastavení na místě. Pohon vibrační desky reverzní je zajištěn čtyřdobým jednoválcovým motorem HONDA (čistý výkon: od 6,0 do 8,2 kW) nebo dieselovým motorem HATZ (čistý výkon 5,0 – 7,9 kW). *Reversible vibratory plate is suitable for compaction of all sorts of soil, for compaction in trenches and on areas as well as for compaction of asphalt surfaces. All models of the VDR line are equipped with directed vibrator. The vector of the resulting force changes its direction by idenfinite change of the position of the eccentric weights, which enables to smoothly control travel speed forward or reverse or even to stop at spot. The machine is driven with four-stroke single-cylinder engine HONDA (net power 6,0 – 8,2 kW)and diesel engine HATZ (net power 5,0 – 7,9 kW).*
Všechna příslušná ustanovení, která výrobek splňuje *(The product meets all relevent provisions)*	Strojní zařízení – směrnice 2006/42/ES; NV č.176/2008 Sb. *Machinery Directive 2006/42/EC* Emise hluku – směrnice 2000/14/ES; NV č.9/2002 Sb. *Noise Emission 2000/14/EC* Elektromagnetická kompatibilita – směrnice 2014/30/EU; NV č.117/2016 Sb. *Electromagnetic Compatibility Directive 2014/30/EU*
Harmonizované technické normy a technické normy: *(The harmonized technical standards and technical standards)*	**ČSN EN ISO 12100, ČSN EN 500-1+A1, ČSN EN 500-4, ČSN EN 474-1+A1, ČSN EN 60204-1 ed.2, EN ISO 14982:2009**
Osoby zúčastněné na posouzení shody *(Persons involved in the assessment of conformity)*	**Autorizovaná osoba č. 255** *(authorized Body No. 255)* **Notifikovaná osoba č. 1016** *(the European Notified Body No. 1016)* Státní zkušebna zemědělských, potravinářských a lesnických strojů, a.s., Třanovského 622/11, 16304 Praha 6-Řepy, ČR *The Government Testing Laboratory of Agricultural, Food Industry and Forestry Machines, Joint-stock-company*
Použitý postup na posouzení shody: *(To the conformity assessment applied procedure)*	**Na základě směrnice 2000/14/ES příloha VI; NV č.9/2002 Sb., příloha č.5** *Pursuant to the Directive for Noise Emission 2000/14/EC Annex VI* **Na základě směrnice 2006/42/ES příloha VIII; NV č.176/2008 Sb., příloha č.8** *Pursuant to the Machinery Directive 2006/42/EC Annex VIII*
Naměřená hladina akustického výkonu: *(Measured sound power level)*	L_{WA} = **106; 108 dB**
Garantovaná hladina akustického výkonu: *(Guaranteed sound power level)*	L_{WA} = **107, 106, 108 dB**

Poznámka: Veškeré předpisy byly použity ve znění jejich změn a doplňků platných v době vydání tohoto prohlášení bez jejich citování.
Note: All regulations were applied in wording of later amendments and modifications valid at the time of this declaration issue without any citation of them.

Místo a datum vydání:
Place and date of issue:
Česká Skalice, 01.01.2012

Osoba zmocněná k podpisu za výrobce:
Signed by the person entitled do deal in the name of producer:

Jméno (Name):	Funkce (Position)	Podpis *(signature)*
Ing. Petr Ratsam	jednatel společnosti *(Company Executive)*	

Congratulations! You have purchased a reversible vibratory plate compactor of the VDR line. You receive high-quality and powerful compaction machine of an innovative design, intended for professional use under the toughest conditions.
Read carefully this operation manual before starting the machine and always keep the instruction - this way you will secure safe operation, high working output and long durability of the machine.
The manufacturer bears no responsibility for damages arising from not adhering to the operation manual.

CONTENT:

Revision No.	Content	Date
1	Updating, VDR52H	10.05.2012

1. SAFETY INSTRUCTIONS

1.1. General Safety Instruction for Operating Light Construction Equipment

1.1.1. Requirements for Operator's Qualification

In general, no licence is required for operating light construction equipment. The person authorized to operate the construction equipment should meet the conditions listed below.

1. Persons employed as operators of the machine should:
   - be of age of 18 or older;
   - be physically and mentally competent;
   - be trained for the work and prove their abilities to the employer;
   - can be expected to fulfil reliably the committed tasks;
   - get employer´s authorization to operate the machine.
2. The operator should read and understand the Operation Manual before starting the work and then adhere to the instructions included within.
3. The operator should be aware of safety instruction valid for operation of the machine and these instructions must be observed when working with the machine. Knowledge of the safety instructions should be provable, i.e. the employer should obtain the operator's signature to confirm he read and understood the instructions.

1.1.2. Obligations of the Contractor

The contractor is understood to be a physical or corporate entity that is providing construction works and uses the construction machine for such purposes. The contractor guarantees safe operation of the machine.

The contractor is obliged mainly:

- to designate an operator of the machine and to make sure he is trained for the work;
- to provide to the operator conditions for safe operation of the machine;
- to control maintaining of the safety instructions;
- to control that the operator is using the machine in accordance with the Operation Manual;
- to ensure regular inspections, maintenance and repairs of the machine;
- to make sure that the Operation Manual is placed in such a place, where it would be available to the operator in a case of need;
- to provide suitable, safe and adequately secured storage place for the machine whenever not in use;

Further, the contractor is obliged to ensure maintaining of lawful requirements for operational safety as well as regulations valid for the respective jobsite.

1.1.3. Obligations of the Operator

The operator is to be designated by the contractor, while the conditions of point 1.1.1. have to be met.

The operator is required mainly:

- to read and understand the Operation Manual including the safety instructions before commencing the work;
- to observe all stipulations of the Operation Manual;
- to acquaint himself with the jobsite including safety instruction valid for the respective jobsite; these must be adhered to while working;
- pay full attention to operation of the machine while working;
- to ensure that all regular inspections, maintenance and repairs of the machine are carried out in accordance with the Operation Manual;
- to require from his employer to ensure conditions for maintaining the safety instructions, carrying out of regular inspections, maintenance and repairs of the machine;

- to prevent damage, theft or unauthorized use of the machine by storing it to safe and well secured place after work.

1.1.4. Operation of the Machine

When working with the machine, the operator is obliged to observe the following instructions:

1. Before commencing the work to inspect the machine, namely all protective devices (such as covers) and controls. Check also the fuel system and engine oil for leakage. In a case of a failure, the machine must not be further used until the failure is repaired.
2. When working with the machine, use the prescribed personal protective aids (i.e. safety helmet, ear protection, goggles, gloves, protective boots, etc.). Working clothes should be closefitting; never use loose or torn clothes.
3. Before commencing the work, check if the machine can be safely started up without endangering the operator or other persons.
4. Never start the engine is closed spaces, unless sufficient and effective ventilation is provided.
5. When working with the machine, pay full attention to operation of the machine to avoid endangering of the operator or other persons and to prevent collision with firm obstacles or other machines or vehicles.
6. When working, listen for unusual sounds and watch for smoke, which could be signs of a failure. In case of any signs of failure, stop the machine immediately and have it repaired.
7. Refuelling is to be done at stopped engine. Prevent the fuel to come into contact with hot parts of the engine. Wipe spilled-out fuel immediately. Do not fill fuel up to the edge.
8. Make sure the fuel cap is tight. Whenever the machine is not working, the fuel tap should be closed. Drain fuel from the tank before transporting the machine to prolonged distances.

ATTENTION! Untight (broken) fuel tank or fuel hoses may cause explosion and therefore should be replaced immediately.

9. Operation of the machine is prohibited in areas, in which there is a risk of explosion of flammable gasses or dusts!
10. When operating the machine is closed spaces (tunnels, galleries, deep trenches, etc.), it is necessary to secure supply of fresh air to the operator (see the respective regulations for construction works).
11. After finishing the work stop the engine, place the machine to a safe place and secure it against theft or unauthorized use. Place the machine is such a way that it cannot fall down, roll over or make up an obstacle for other machinery and vehicles.

1.1.5. Inspections, Maintenance and Repairs

1. Inspect regularly technical condition of the machine with special respect to perfect function of safety devices and controls. In case of a failure ensure it is repaired.
2. Servicing works on the machine may be done only by a qualified person authorized by the contractor, or a worker of service organization.
3. Servicing works on the machine can be done only on such a workplace, where cleanness and safety are ensured. If possible, servicing works should be done in an adequately equipped workshop.
   Should the servicing works be done right at the jobsite, secure the working place to prevent collision with other machinery or vehicles. Servicing works must never be done at such a place, where safety can be endangered by external influence, i.e. by land slide, fall of objects, by operation of other machinery and vehicles, etc.
4. Servicing works should be done when the engine is off. If the engine has to be started for certain activities, pay high attention to safety.
5. Use only genuine spare parts for repairing the machine. Only such parts were tested by the manufacturer and they guarantee safe operation of the machine.
6. Changes and modifications at the machine may be done only with prior express consent of the manufacturer!
7. The tipping cover should be opened only when the machine is level!

1.1.6. Loading and Transporting

1. The machine may be loaded and transported only using a device of adequate payload (weight of the machine can be found in chapter Basic Technical Parameters).
2. When loading the machine by a crane, regulations for crane operation must be observed. Such activity may be done by a qualified person only, with valid crane licence and/or binder's licence.
3. Attach the binding means to the specified point at the machine frame.
4. In case of manual handling, cooperation of more people is necessary so that maximal weight of burden which can be lifted by a man is not exceeded.
5. When transporting the machine, it must be adequately secured against tipping over, falling down or shifting along the loading area. Fit the bending means to the marked points.
6. The machine should be transported with the control bar lifted up and secured.

THECONTROL BAR (SEE CHAPTER 2.1. BASIC PARTS OF THE REVERSIBLE PLATE) IS INTENDED FOR CONTROLLING THE MACHINE ONLY, WHEN VIBRATION IS WORKING (MAXIMAL/OPERATIONAL ENGINE SPEED IS SET UP). NEVER LIFT, TURN AROUND, FIX OR TOW THE VIBRATORY PLATE AT THE CONTROL BAR, AS THAT WOULD LEAD TO DAMAGE TO THE RUBBER MOUNTS!
IN CASE OF DAMAGE DUE TO MACHINES FROM THIS COMPANY IS NOT RESPONSIBLE FOR DAMAGES!

1.2. Forbidden Activities

When working with the machine, it is forbidden mainly:

- to use the machine for other than intended activities;
- to control the machine other way than described in the Operation Manual;
- to work with the machine when drunk or intoxicated or under influence of medicals with negative influence on ability to control a machine;
- to work with the machine, if its operation would cause danger to persons, property or road operation;
- to start and/or work with the machine, if there are other persons within its dangerous reach;
- to start and/or work with the machine, if any of the protective devices (i.e. a cover) is dismantled or damaged;
- to work with the machine wherever is an external danger (machine caving-in, land slide, machine rolling over, leakage of dangerous agents, danger of explosion, fire risk, risk of electric shock, etc.);
- to work with the machine wherever is a danger of damaging underground objects (i.e. by excessive vibrations) and damage to the underground engineering networks;
- to work with the machine within the protective zone of electric power lines and transformer stations;
- to travel with the machine over electric cables, unless these are adequately protected against mechanical damage;
- to work with the machine under reduced visibility and in the night, unless the working area and the whole jobsite is adequately illuminated;
- to abandon the operator's place while the machine is running and to abandon unsecured machine without making precautions against it unauthorized use;
- to disable safety, protective and/or protection devices or to modify their parameters;
- to use a machine from which oil, fuel or other fluids are leaking;
- to start the engine by other way than described in the operation manual;
- to clean the machine when the machine is running;
- to smoke or use naked flame when checking the fuel level or refuelling, when lubricating the machine or when checking the battery;

1.3. Hygienical Principles

Oil derivates (fuel, lubricants) are harmful agents. Anyone who gets into contact with such agents is obliged to protect himself and follow general principles of health protection as well as to follow instructions valid for each specific agent.
Pay special care to:

- skin protection against direct contact with oil derivates;
- wash hands properly after finishing the work and apply suitable hand cream.

Store the fuels, lubricants, cleansing and conservation agents, as well as other dangerous agents in original containers, properly sealed. Never allow storing in unmarked bottles or containers or even in beverage bottles. Store such agents in safe place, out of reach of children.
In case that the agent gets into touch with skin or eyes, or when it is eaten or inhaled, apply the first aid and get immediately medical aid.

1.4. Environmental Principles

Fuel, lubricants and other operational fluids are harmful to environment. This category also includes part of the machine that get into contact with operational fluids, such as filter and hydraulic hoses.
After use these belong to dangerous waste.
Pay high attention to avoid leakage of the fluids and their escape into soil or water (including the sewage).
Store the fluids in such manner, that the fluids gets caught in case of accidental leakage.
If these agents still escape, arrange their safe collection and liquidation (spread with an absorbent and commit to a specialized company).
Used operational fluids are to be disposed off in accordance with the respective regulations.

1.5. Liquidation of the Machine after Termination of its Service Life

After the machine exceeds its service life, the contractor is obliged to arrange its proper liquidation in accordance with the respective lawful regulations and with regards to environmental protection.
Oil fills have to be removed from the engine and from the vibration mechanism, and the used filters have to be dismantled.
In accordance with the law of waste disposal, the owner of the machine to be disposed off is obliged to:

- commit the metal parts only to persons authorized to liquidate, collect and buy-out this type of waste;
- used engine oil and used hydraulic oil can be committed only to persons authorized to handle waste oils.

Company NTC does not bear any responsibility for user’s health or environmental damages caused by failure to keep the above mentioned hygienical and environmental principles.

1.6. Safety Instructions for Work with Compaction Machines

Vibratory plates, vibratory tampers and vibratory rollers belong among compaction machines. When operating such machines, the following safety instructions have to be observed:

1. Prior to starting the work, find out bearing capacity of the terrain, locations of underground spaces and paths of underground civil lines, in order to avoid sinking of the machine or damage to the underground object.
2. When working close to a building, always consider whether the building cannot be damaged from transition of vibrations.
3. When working in trenches, make sure that the sides cannot slide down and bury the operator.
4. When working on edge of slopes, always work only in sufficient distance from the edge, to prevent soil slide and/or rolling over or fall of the machine.
5. Never work with the machine in such inclination, where is a risk of machine rolling over or where lost of adhesion and uncontrolled sliding of machine may occur.

1.7. Hygienical Data

Noise Level:
Declared level of acoustic pressure A at the operator's place
(It measured according to ČSN EN ISO 11201 under conditions specified by ČSN EN 500-4, enclosure B).

	VDR52	VDR52H	VDR63	VDR63H
$L_{pA,d}$ [dB]	91+1	94+2	91+4	91+4

Guaranteed level of acoustic power A
(Measurement conditions according to Directive 2000/14/EC, point 8, it measured according to ČSN EN ISO 3744:2010).

	VDR52	VDR52H	VDR63	VDR63H
$L_{WA,G}$ [dB]	107	108	106	106

Vibrations:
Declared overall level of vibration acceleration transmitted to hand and arm of the operator
(It measured according to ČSNENISO 20643 under conditions specified by ČSNEN 500-4, enclosure C).

	VDR52	VDR52H	VDR63	VDR63H
a_{hvd} [$m.s^{-2}$]	10,0+4,0	10,2+4,1	8,0+3,2	8,0+3,2

With regards to the declared value of acoustic pressure at the operator's place and value of vibrations transmitted to operator's hands, it is mandatory to use protective means effective in the respective level of acoustic pressure or vibrations transmitted to hands, whose values were set up by the contractor by categorizing the workplaces; this process is stipulated in regulation of the government No. 272/2011 Sb. as modified later.
Work prescriptions for working with the reversible plate have to be adjusted in such a way, that they include technological interruptions leading to interrupted exposition.

1.8. List of Safety Signs Used at the Machine

The mentioned types of machinery vibration plate types from VDR52 to VDR63H to comply with the current wording of Act No. 22/1997 Coll. on technical requirements for products placed stickers symbols of safety signs, symbols and informative descriptions of the appearance and design determined by the relevant technical standards CSN.
Further in the text, the individual types of stickers are shown in the same look, as they are used at the respective machine. Each sticker and symbol is accompanied with an explanatory text.

1.	Combined stocker containing safety signs according to ČSN ISO 3864 (symbol No. B.2.5, B.3.1 and NB.2.26), sign according to ČSN ISO 6405-1 (symbol No. 7.28) and informative description. Safety sign, symbol No. B.2.5 commands the operator to wear ear protection all the time when operating the machine. Sign, symbol No. 7.28 commands the operator to read the Operation Manual before attempting to start work with the machine. Safety sign, symbol No. NB.2.26 commands the operator to	

	wear protective gloves all the time when working with the machine, in order to be protected from effects of vibration. Warning safety sign, symbol No. B.3.1 (exclamation mark) warns the operator from other dangers. Information for the operator how to proceed when repairing, cleaning or adjusting the machine.	
2.	Sticker with sign No. 7.25 according to ČSN ISO 6405-1 (the symbol marks the suspension point, i.e. the point where the machine can be fastened for lifting).	
3.	Sticker with symbol No. 8.1 according to ČSN ISO 6405-1 (the sticker marks the location of bolt closing the draining hole of engine oil)	
4.	Sticker containing information about the specified fuel type.	
5.	Sticker containing instructions and information for controlling the travel control lever.	
6.	Sticker containing symbols of a turtle and a running rabbit as symbols for idle speed and maximal (i.e. operational) engine speed, according to ČSN ISO 6405-1.	
7.	Sticker containing the value of noise emissions, as found out by tests carried out in accordance with conditions of NV No. 9/2002 Sb. – may differ for each machine type.	

1.9. Handling with Packing Material

NTC STAVEBNÍ TECHNIKA spol. s r.o. is registered with the *EKO-KOM a.s.* company.
There is an „Agreement of Complex Services“ made with the *EKO-KOM a.s.* company, either by *NTC STAVEBNÍ TECHNIKA spol. s r.o.* or by suppliers of packing material.

1.10. Special conditions of operation

1.10.1. Operation at low ambient temperature

Compaction at temperature below freezing is highly dependent on water content in the soil to be compacted. Under such conditions, soil becomes harder and more difficult to compact. It is possible to compact dry materials or rapidly compact fresh soil, before it gets frozen.

1.10.2. Operation at high altitudes

With increasing altitude, engine power decreases due to changed oxygen content. Within certain extent, it is possible to improve the engine power by installing different main nozzle and by adjusting the carburetor (gasoline engines) or by adjusting the injection system (diesel engines). Should the machine be operated in high altitudes (above 1500 m above sea level), contact the engine manufacturer to carry out the adjustments.

In case that you intent to operate the machine in high altitudes in the time of purchase, consult the manufacturer.

1.10.3. Operation in Dusty Environment

In case that the machine is operated in extremely dusty environment, it is recommended to shorten the service intervals for cleaning or replacement of the air filter.
Clean the machine from dust regularly.

2. TECHNICAL DESCRIPTION

Reversible vibrator plates are designated for compaction of all sorts of soil, for compaction of trenches and surfaces as well as - in the last resort - for compaction of asphalt surfaces.

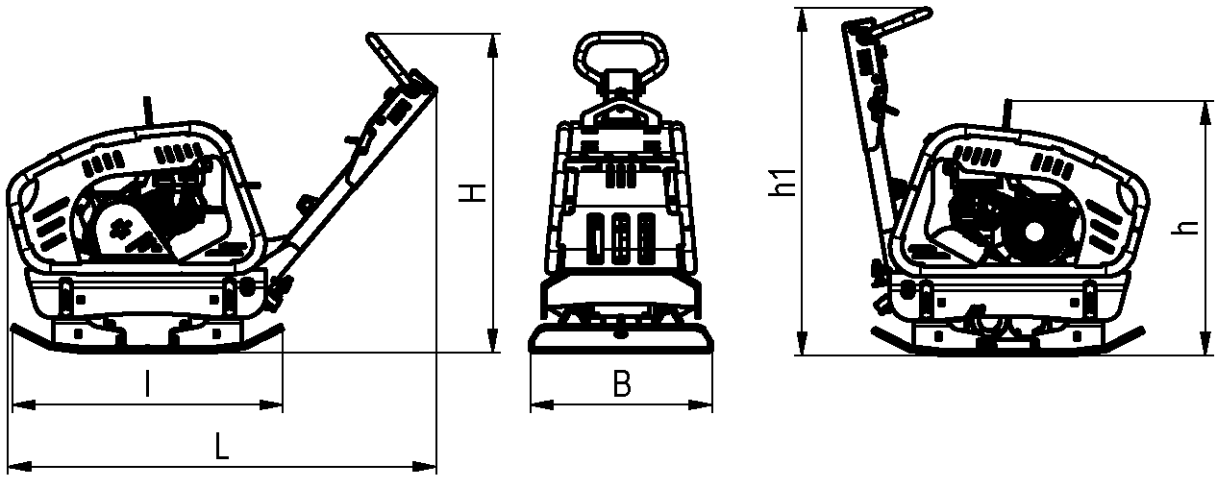
Centrifugal force of the vibrator has been optimized depending on the machine weight and size of the ground plate; therefore, high compaction effect has been reached.

Vibratory plates of the VDR line are fitted with directed vibrator. By fluently shifting mutual position of the eccentric flyweights, the resultant force is changing its direction and thus the plate speed can be fluently controlled forwards, backwards or the plate may vibrate at a spot. The working part is the ground plate, on which the vibrator is mounted. The engine base plate is resiliently mounted to the ground plate.

The vibratory plate is driven by four-stroke single-cylinder engine. The most frequently used engine are gasoline engines HONDA and diesel engines HATZ. The engine is coupled to the vibrator by a drive belt. Centrifugal clutch mounted on the engine shaft disconnects power transmission at idle speed of the engine.

The operator is controlling the plate by a resiliently mounted and tilting control bar, where travel control lever and throttle lever are located. In the case of electronically controlled engine is replaced by the switch lever of gas idling and working speed.

2.1. Basic Technical Parameters



Model	Dimensions [mm]					
	B	H	h	h1	L	l
VDR 52/52E	600	1055	840	1150	1420	895
VDR 52H/52HE	600	1055	875	1150	1420	895
VDR 63/63E	750	1040	850	1130	1500	900
VDR 63H/63HE	750	1040	910	1130	1500	900

Type		VDR52		VDR63	
Model		VDR52 (E)	VDR52H (E)	VDR63 (E)	VDR63H (E)
Weight	[kg]	330 (345)	350 (360)	430 (440)	440 (460)
Frequency	[Hz]	75	75	70	70
Centrifugal Force	[kN]	52	52	63	63
Maximum Speed Forwards/Backwards*	[m/min]	22	22	20	20
Maximum Climbing Ability	[%]	30	30	30	30
Vibratory Plate Width	[mm]	600	600	750	750
Vibratory Plate Lenght	[mm]	895	895	900	900
Engine	[-]	HONDA	HATZ	HONDA	HATZ
Model	[-]	GX270	1B30	GX390	1B50
Fuel	[-]	petrol	diesel	petrol	diesel
Net power/3600 RPM**	[kW]	6,3	5,0	8,7	7,9
Starting	[-]	manual (electronic)	manual (electronic)	manual (electronic)	manual (electronic)

* specified speed is valid for optimal conditions – difference of the fwd/rew speed up to ±15%

** Engine performance is reported according to SAE J1349 - Honda engines and ISO 3046-1 - Hatz engines.

Actual power of the engine mounted on a specific machine may differ due to various factors, as i.e. operational speed, operational conditions, maintenance and other variables.

Operational speed of the engine is NOT the same as rated speed of the engine; they are preset to suit technological parameters of the machine.

2.2. Lubricants

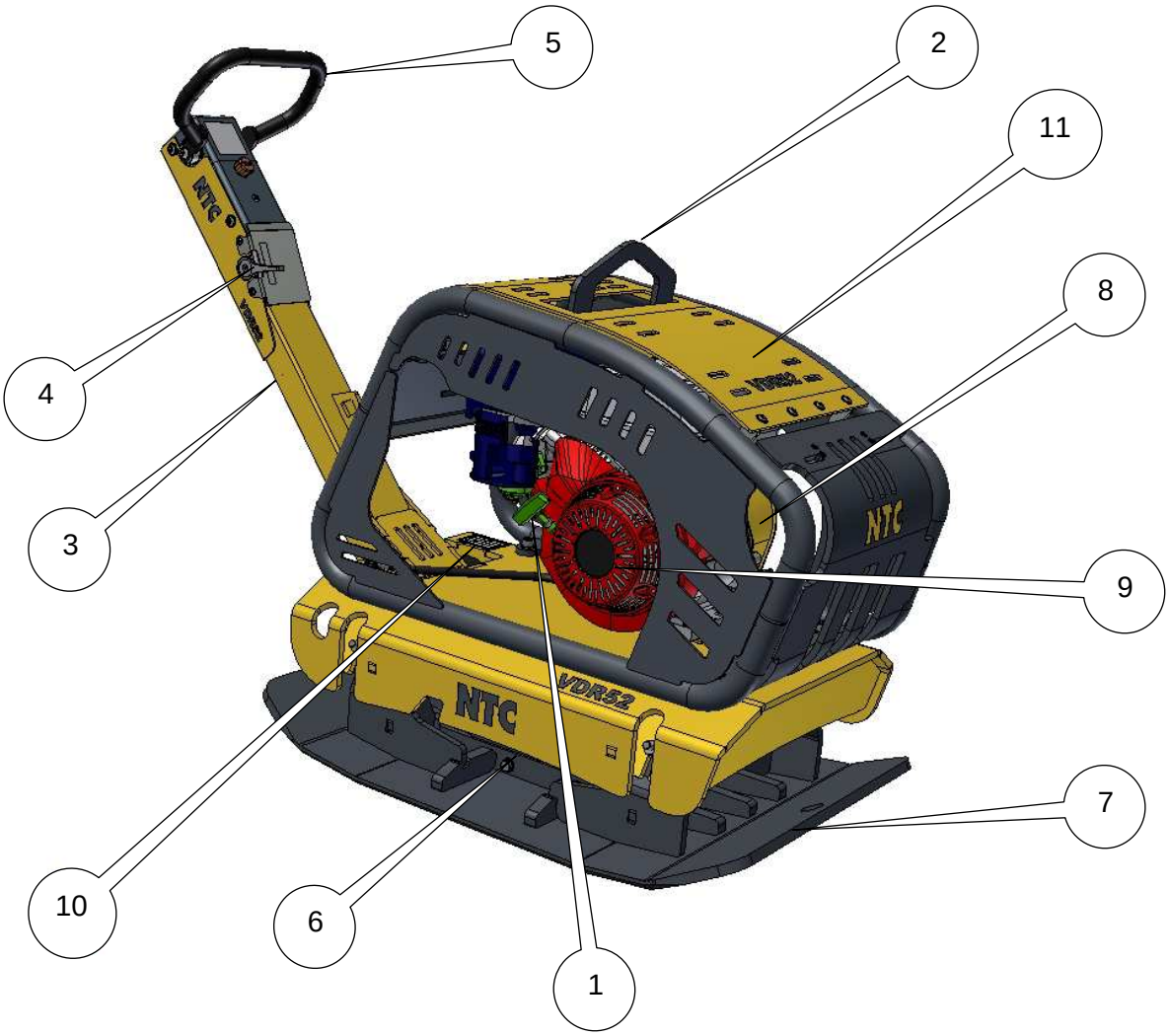
- engine oil 15W-40 capacity - HONDA GX – 1,1l
  capacity - HATZ 1B30 - 0,9 l
  capacity - HATZ 1B50 - 1,5 l
- oil in the vibrator 15W-40
  VDR52 and 52H, 63 and 63H capacity: 0,5 l
- hydraulic oil OH-HV 68
  VDR52 and 52H, 63 and 63H capacity: 0,28 l

We recommend using premium engine oils of viscosity class SAE 15W-40 and output classification (i.e. API SJ/CF 4, API SG/CE) in accordance with recommendations of the producer of HONDA engines.

For HATZ engines, it is recommended to use oils of performance classification API – CD / CE / CF/ CF-4 / CG-4.

For vibrators use brand-name oils of viscosity class SAE 15W-40 and performance classification API SJ/CF.

2.3. Basic Parts of Reversible Vibratory Plate



Basic parts of reversible vibratory plate:
1. Recoil grip, 2. Suspension point, 3. Control bar, 4. Throttle lever, 5. Travel control lever, 6. Vibrator (under the engine base plate, on the ground plate), 7. Ground plate, 8. V-belt cover (from the other side of the engine), 9. Engine, 10. Type plate, 11. Tipping-off cover

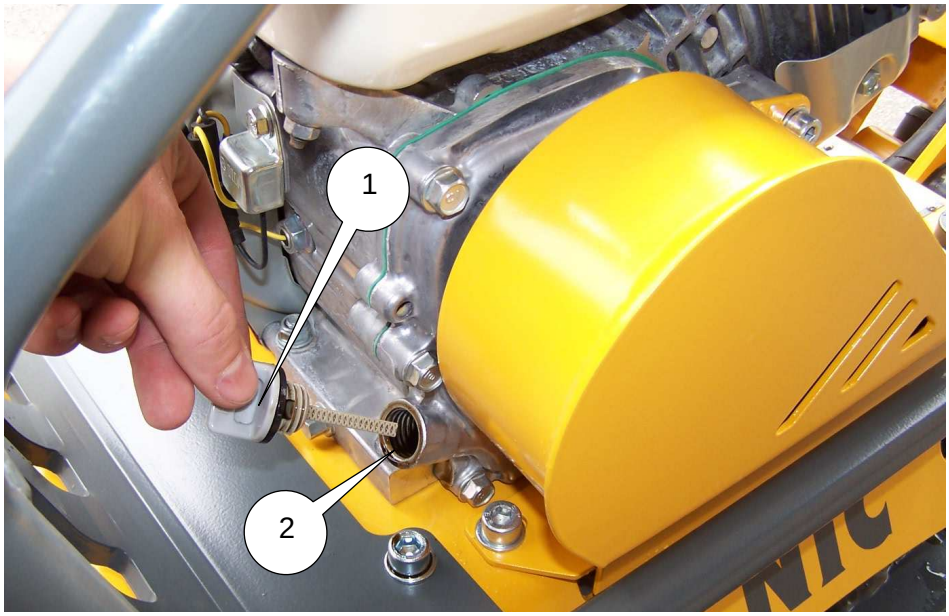
3. PRIOR TO STARTING

3.1. Inspection of Engine Oil Level

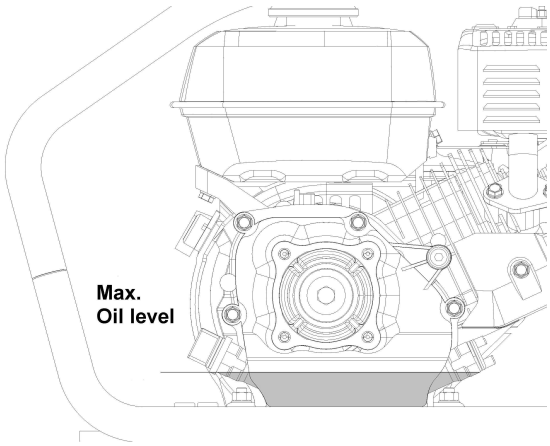
Check engine oil level daily!
Use recommended oils only. Choose oil viscosity to correspond to the ambient temperatures in the location where the machine is used.

NOTE:
Operation of the engine with low oil level may lead to serious damage to the engine.

Inspection of oil level for engines HONDA GX is to be done as follows:
Place the machine at a level surface and lift the tilting-off cover.
Clean the plug (1) and unscrew it from the filler (2) at the engine.

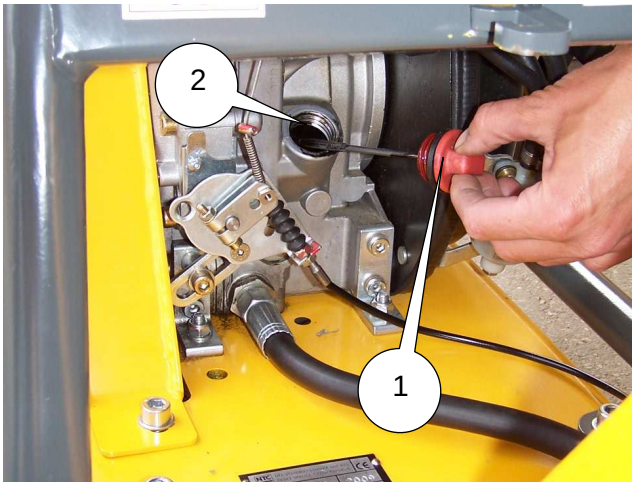


At correct oil level, oil is reaching just to the edge of the filler and slightly is pouring out.
If the oil level is lower then the edge of the filler, top up oil.



If oil leakage is found, stop the machine immediately and call service, or contact the manufacturer.

Checking the oil level in HATZ 1B30 and 1B50 engines should be carried out as follows:
Place the machine into a horizontal position.
Clean the plug (1) and unscrew it from the filler (2) on the engine.



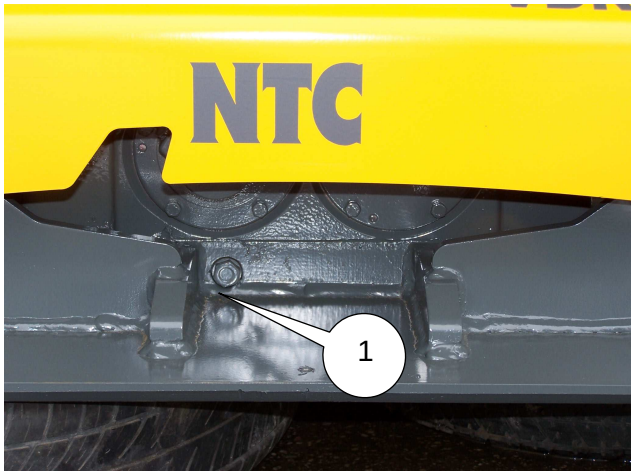
Clean the filler cap with the dipstick with a clean cloth.
Screw the dipstick into the filler and unscrew it again. The oil level should be between the “MIN” and “MAX” marks at the disptick.

Should the oil level be below the “MIN” mark, add recommended oil into the engine, up to the upper mark “MAX”.

In case that any oil leakage is found, stop the machine immediately and call service or contact the manufacturer.

3.2. Inspection of Oil Level in Vibrator

Inspection of oil level in the vibrator is to be done once a year, within regular service inspection. We recommend having this operation done by unauthorized service.
Place the machine on a level surface.
Unscrew the plug (1) to check the oil level in the vibrator. If correct, oil is slightly pouring out of the hole. Refit the plug.

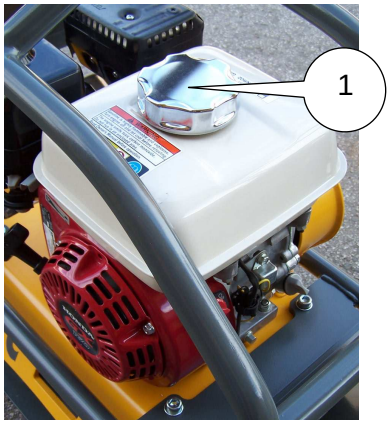


In case of low oil level, contact service organization.
Any repairs of vibrator within the warranty period by be carried out exclusively by authorized service technician or the manufacturer; otherwise the manufacturer will not honour any possible warranty claim.

NOTE!
Low or high oil level may lead to serious damage to the bearings in the vibrator.

3.3. Checking Fuel Level

Place the machine on a level surface and lift the tipping-off cover.
For gasoline engines, use gasoline with octane number 90 or more. We recommend unleaded gasoline NATURAL 95.
In case of low fuel level, unscrew the fuel tank plug (1).



Top the fuel up to the edge of the filter. Refit the plug (1).
Never use gasoline mix with oil or dirty gasoline. Prevent to dust, dirt or water entering into the fuel tank.

2. In diesel engines, use Diesel oil according to the following standards:
   - CEN EN 590 or possibly DIN/EN 590
   - DIN 51 601
   - BS 2869: A1 and A2
   - ASTM D 975-88: 1-D and 2-D
   - VV-F-800C: DF-A, DF-1 and DF-2
   - NATO code F-54 and F-75

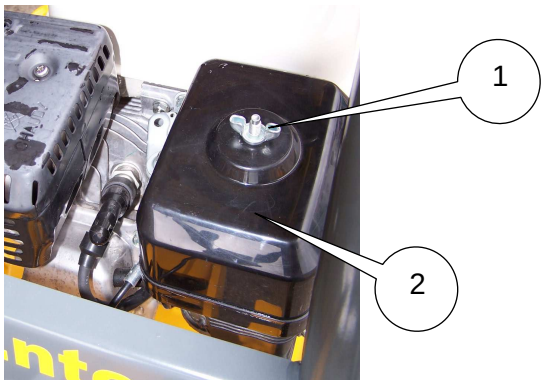
At the temperatures below 0°C (32°F) use the winter kinds of Diesel oils or mixtures of the Diesel oil with special additives or possibly with kerosene to prevent paraffines from being liberated and deposited in the machine fuel system. Offer for Diesel oil at individual filling stations usually reflects the season of the year.

To add fuel, lift the lock (1) first and then release the tank cap pulling it upwards.

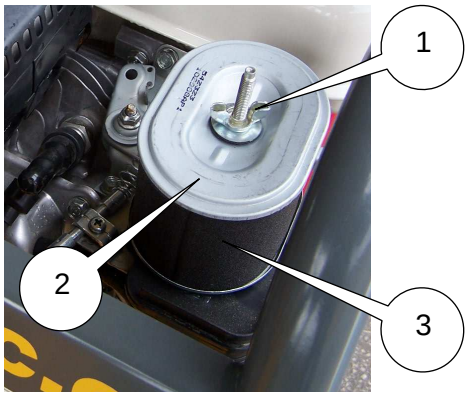
Replace the plug after refuelling.

3.4. Inspection of Air Filter

Air filter of the HONDA GX engine:
Place the machine on a level surface and lift the tipping-off cover.
Unscrew the wing nut (1) and remove the plastic cover of the air filter (2).

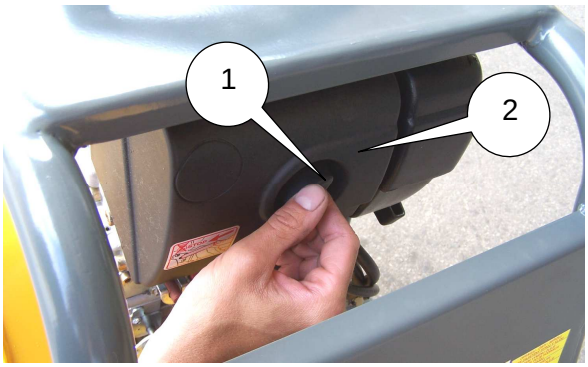


Unscrew the wing nut (1) and remove the filter element (2).
Remove the foam collar (3).

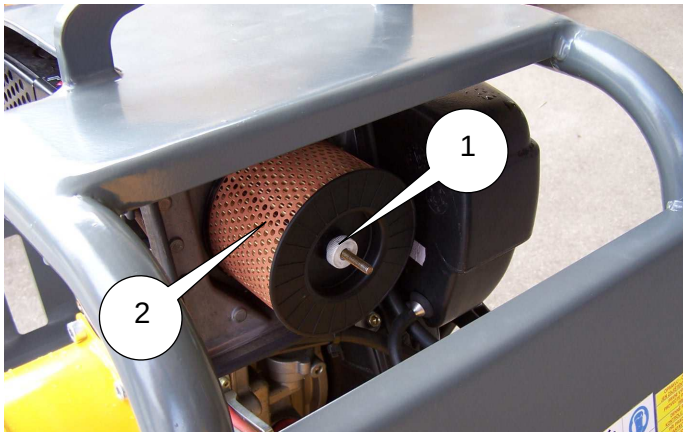


Check the paper filter element to make sure that it is clean and intact.
Clean the paper filter element carefully with compressed air, from inside only. Replace if too dirty.
Wash the foam collar in soap water, **never in a solvent**! Replace if damaged.
Refit all components carefully.
Never start or operate the engine with air filter removed. Dust and dirt sucked through the carburettor into the engine would cause its rapid wearing.

Air filter for HATZ 1B30 and 1B50 engines:
Place the machine into a horizontal position and lift the hinged cover.
Unscrew the plastic wing nut (1) and remove the plastic air filter cover (2).



Unscrew the nut (1) and remove the paper filter element (2).

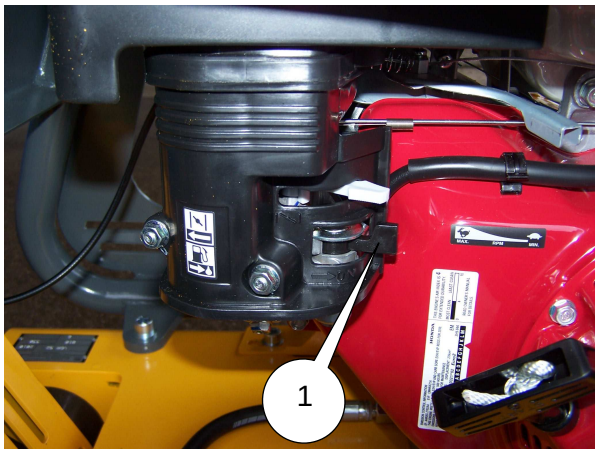


Check the paper element of the air filter to ensure it is clean and in good condition.
Clean the air filter element carefully in direction from inside to outside, using pressured air.
In case of serious impurity replace the air filter element. Re-install all removed parts carefully.
Never operate the engine without the filter or with a damaged one. Dirt and dust entering the engine would cause its rapid damage.

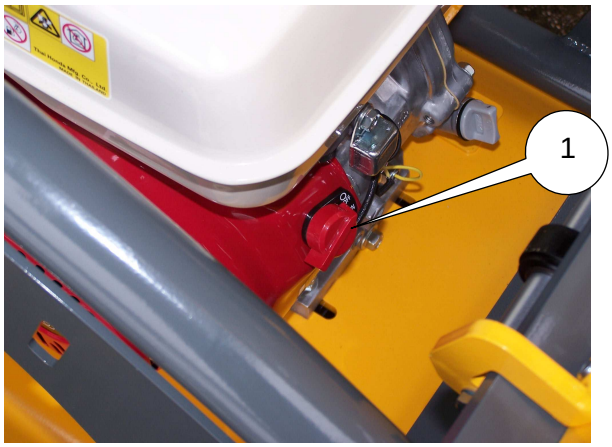
4. STARTING OF THE MACHINE

4.1. Gasoline Engines HONDA GX

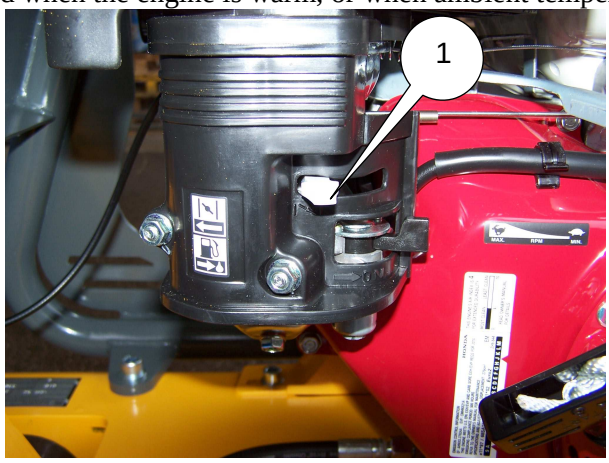
1. Shift the fuel tap (1) into the open position (“ON”).



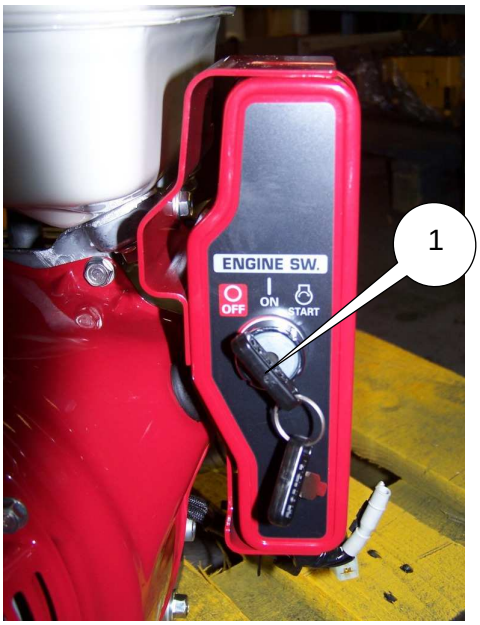
2. Switch on the engine ignition (1) (position “ON”).



3. Shift the choke lever (1) into the position “ON”.
   Choke is not to be used when the engine is warm, or when ambient temperature is high.



4. If the machine is equipped with electric start, follow points 1 and 3, then turn the key in the ignition (1) to "START" position. After starting the engine with the key back to "ON" and for running the engine remains in this position.

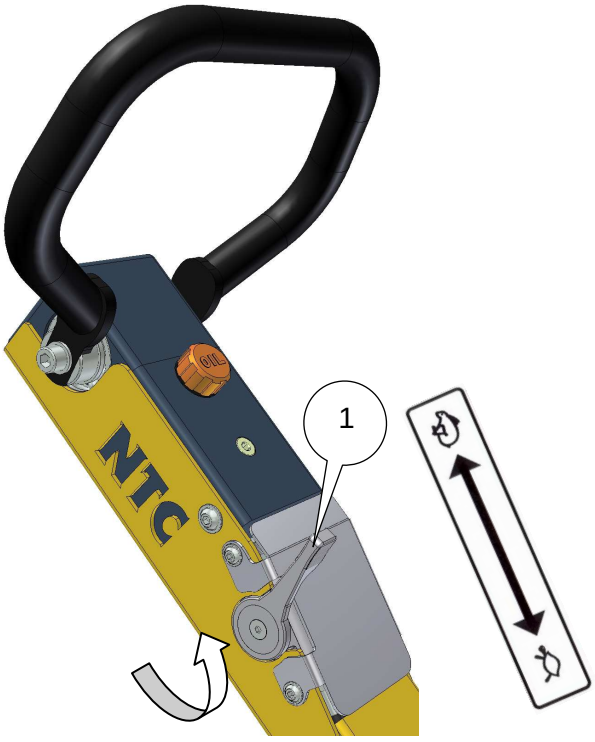


Always observe instructions and principles described in the operation manual for the HONDA engine.

5. Set up the throttle lever (1) into the “idle speed” position.

NOTE!!! Throttle lever (1) is to be set up only in two positions - “Idle speed” or “Full speed”. Never set the throttle lever into intermediate positions, as that may lead to serious damage of the centrifugal clutch.

6. Pull the grip of the recoil starter slightly until resistance is felt, then pull vehemently. The engine would start up. Do not release the recoil rope, hold it and return it slowly into the original position.
7. Let the engine to warm up, and then return the choke lever back into the “OFF” position.
8. Let the engine to idle for a while to allow it to warm up before it is loaded.
9. Shift the throttle lever (1) into the “Full speed” position. At about 1700 RPM, the clutch engages automatically and the machine begins to vibrate.



10. The travel control lever will automatically shift forward and the machine begins to travel forward.
11. Shift the travel control lever backwards for reversing.

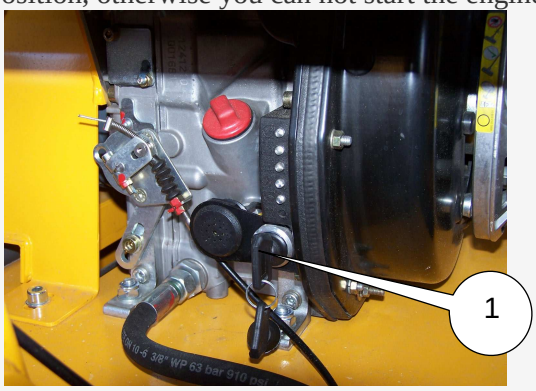
Forward travel **Reversing**

4.2. Diesel engines HATZ 1B30 and 1B50

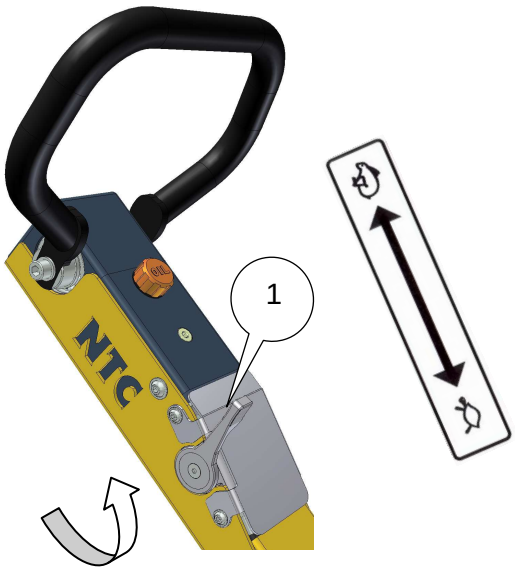
1. Set throttle to "idle".
2. Starter cord slowly pull the handle stops and slowly release it back when you move it while holding hands. Then pull the starter cord handle until you feel resistance, then grip the handle firmly with both hands and pull sharply. The engine starts.

   Starter cord handle drop sharply back. In retrospect, moving her hands to hold. (The procedure is graphically illustrated starting the engine HATZ.)

   If the machine is equipped electric start turn the key in the ignition (1), as shown, after the engine starts release the ignition key. You can also start it manually (eg low battery). It is always necessary to turn the ignition key to start position, otherwise you can not start the engine.



3. Leave the motor full load while running at idle speed, to keep warm.
4. Move throttle lever (1) to "full throttle". At about 1700 RPM centrifugal clutch automatically switches and the machine begins to vibrate.



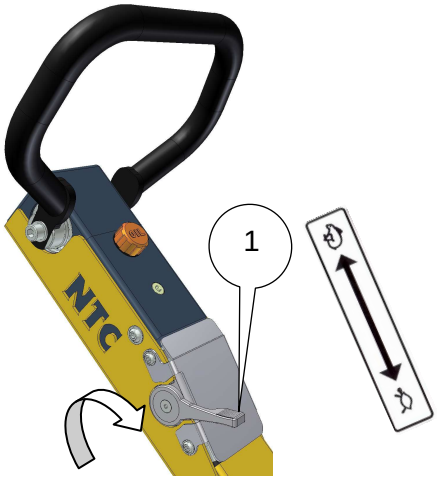
5. Reverse lever is tilted forward and automatically starts the machine forward.
6. To change the direction of travel backwards, flip reverse control lever back.

Forward travel **Reversing**

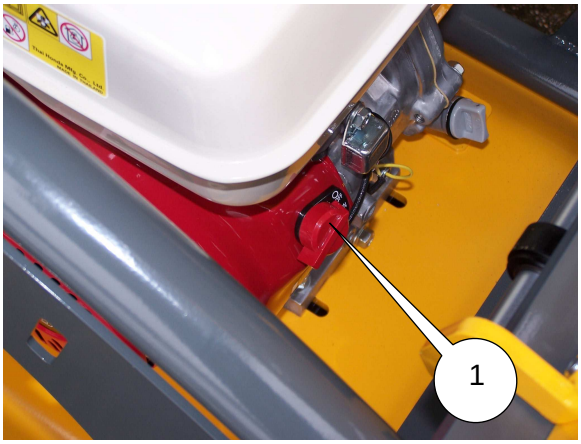
5. SHUTTING DOWN

5.1. Gasoline Engines HONDA GX

1. Shift the throttle lever (1) into the “idle speed” position. The centrifugal clutch will disengage and the machine stops vibrating.



2. Switch over the engine ignition (1) into the “OFF” position.

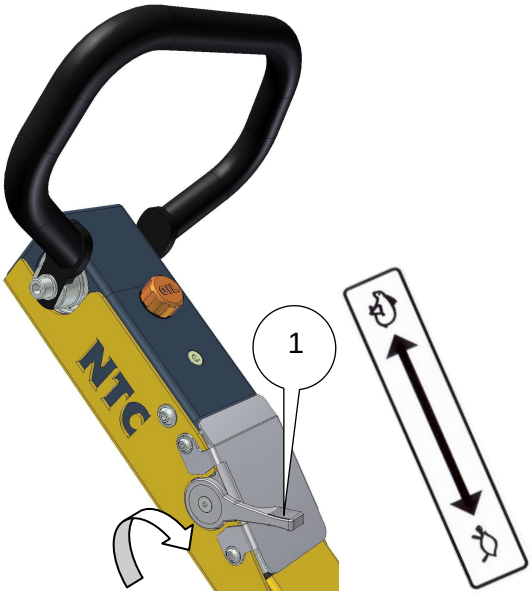


3. Shift the fuel valve (1) into the “OFF” position.

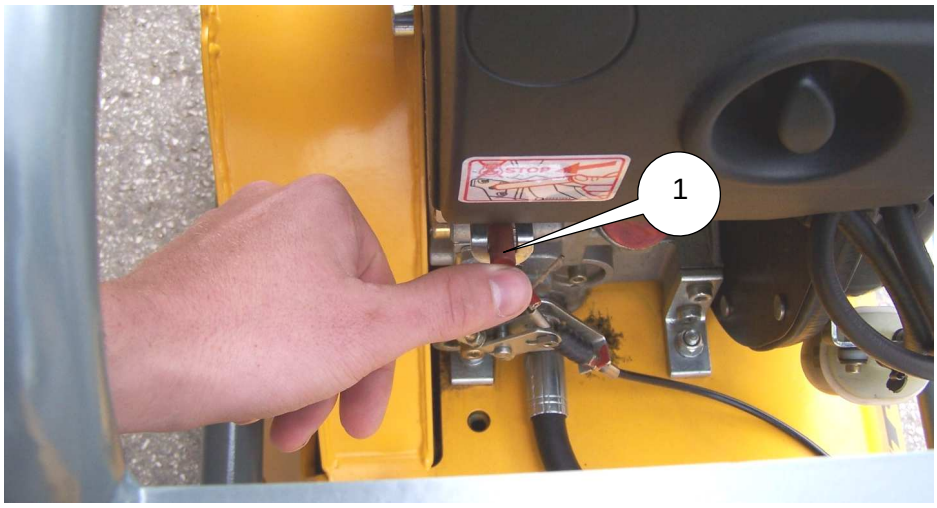
4. If the machine is equipped electric start, follow points 1 and 3 Then turn the key in the ignition (1) to "OFF"

5.2 Diesel Engines HATZ 1B30 and 1B50

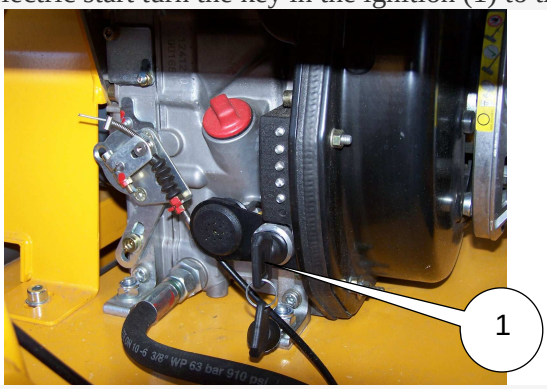
1. Put the throttle control lever into the "0" position (idle run). The centrifugal clutch declutches and the engine stops vibrating.



2. Push red button (1) for 2-3 seconds to shut-off the engine.



3. If the machine is equipped electric start turn the key in the ignition (1) to the off position.



6. MAINTENANCE

1. Lift the tipping-off cover when the machine is in horizontal position only!
2. See enclosed Engine Maintenance Manual for engine maintenance instructions.
3. Tensioning of the vibrator drive belt:
   The drive belt can be tensioned (see maintenance schedule, point 7).
4. Checking bolted connections:
   We recommend checking bolted connections before every starting of the machine.
5. Adjustment of the engine speed:
   In case of engine repair or replacement, engine speed has to be adjusted (see maintenance schedule, point 7 - Vibrator).

NEVER ADJUST ENGINE SPEED ABOVE THE SPECIFIED LIMIT!

Should engine speed be exceeded above the specified limit, damage to the machine may occur due to excessive vibrations.

The manufacturer will not honour any warranty claims coming from this reason!

WITHIN WARRANTY PERIOD, HAVE SUCH ADJUSTMENT TO BE DONE BY AUTHORIZED SERVICE ONLY!

7. MAINTENANCE SCHEDULE

This maintenance schedule contains only the most important operations. Besides of the mentioned operation, carry out maintenance and repairs according to the operational conditions of the machine, as well as those mentioned in the Operation Manual to the engine.

WARNING:
Place the machine on a lever surface, lift the tipping-off cover and shut down engine prior to any maintenance operations.
Use genuine spare parts only. Use of non-original spare parts may lead to damage to the machine. The manufacturer will not honour any warranty claim arising from such reason.

Maintenance schedule for engines HONDA GX

Item	Operation	Initial inspection	After the first month or 20 hrs of operation	Every 3 months or 50 hrs of operation	Every 6 months or 100 hrs of operation
Engine oil	Inspection - oil level	☑	DAILY		
	Replacement		☑		☑
Air filter	Inspection	☑	DAILY		
	Cleaning			☑ (1)	
Spark plug	Inspection - cleaning				☑
Fuel hose	Inspection (replacement)	Every two years (2)			
Valve clearance	Inspection - adjustment	Every year or 250 hours of operation (2)			
Fuel tank and sieve	Cleaning	Every year or 300 hours of operation (2)			
Sediment bowl	Cleaning				☑
Vibrator	Adjustment of frequency Oil replacement	Every year or 300 hours of operation (2)			
Rubber mounts	Inspection for intactness	150 hours of operation			
Hydraulic oil	Inspection for leaking	Every year or 300 hours of operation (2)			
Drive belt	Inspection of tensioning, inspection of pulleys and clutch				☑ (2)

1. **To be carried more often when operating in dusty environment!!!**
2. **These operations should be carried out by NTC service technician, or by authorized service for the given type of engine; especially when the user does not have the adequate tools and knowledge of this kind of equipment.**

Maintenance Schedule for Engines HATZ 1B30 and 1B50

Item	**Operation**	**First Inspection**	**After 25 hours of operation (new engine or engine after overhaul)**	**Every 250 hours of operation**	**Every 500 hours of operation**
Engine Oil	Oil level check	☑	DAILY		
	Renewal		☑	☑	
Air Cleaner	Check	☑	DAILY		
	Cleaning				☑ (1)
Fuel Injection system	Check - cleaning	Every year or 250 hours of operation (2)			
Filter Vessel	Exchange				☑
Fuel Hose	Check - replacement	Every two years			
Valve Clearance	Check - adjustment			☑	
Vibrator Exciter	Frequency adjustment Exchange of oil	Every year or 300 hours of operation (2)			
Rubber Springs	Check				150
Hydraulic Oil	Inspection for tightness	Every year or 300 hours of operation (2)			
V-belt	Inspection for tensioning, inspection of pulleys and clutch				☑ (2)

1) If the engine is operated in a dusty environment, the maintenance operations should be more frequent.

2) These maintenance operations should be carried out by a NTC serviceman or by an authorized service centre depending on the engine type, especially if the user does not have sufficient knowledge or tools.

8. WARRANTY TERMS

The NTC construction machines are designed and manufactured to suit to long-term operation even under the toughest operating conditions. In accordance with long-term experience we can say that the machines reliably work not only for the warranty period, but even much longer.
Should the machine still fail to work to your full satisfaction, we are ready to be anytime helpful solving the problem. In a case of a failure, proceed as follows:

1. Check, whether the failure is not caused by a failure to follow the operation manual, or exclude trivial problems such as empty fuel tank, low oil level or clogged air filter.
2. If you do not succeed to repair the problem this way, contact the manufacturer or any authorized service (see the warranty certificate).
   * company name, your name, phone and fax number
   * machine model and serial number
   * description of the failure
   * in case that the machine is in warranty, inform the service that you are reporting a warranty claim and state date of purchase
4. In case of a warranty claim, the claim must be consequently submitted in writing, preferably using the form "Warranty Protocol".
5. Every warranty claim will be immediately considered and the service technician will discuss with you the method of repairing.

The following warranty conditions are valid for all NTC products:
Unless agreed otherwise, the producer warranty its products and good for a period of 12 months from date of delivery to the end-user. Should a failure cause by improper design, material or workmanship should occur within the warranty period, the manufacturer will by its sole decision repair or replace the faulty part.
The warranty does not cover fast wearing parts, such as the drive belts, rubber mounts, filter elements, spark plugs or control cables.
The manufacturer bears no responsibility for failures arising from failure to follow the operation manual, by improper maintenance or lack of it, by unprofessional service action, by using the machine for other than intended purpose, by using unsuitable fuels, lubricants, accident or act of God. The manufacturer further bears no responsibility for damages caused by transportation or storage. The warranty conditions are also stated at the warranty certificate.

Warranty Protocol

Number: (to be filled in by NTC comm. dept.)

Failure reporting (to be filled in by user of the machine):

Model:		**Serial number:**	
Detailed description of the failure:			
Is the machine in operable condition?		YES*	NO*
Date of the failure occurrence:		**Date of reporting:**	
Date of purchase:		The machine was purchased from: NTC / dealer*	Dealer:
User: (address, phone, contact person)			
Location of machine usage: (if different from the user´s address)			

This properly filled in protocol should be sent by fax or registered letter to the above address; that will help us to resolve your warranty claim quickly.

Confirmation of rightfulness of the warranty claim (to be filled in by NTC commercial department):

Date of sale:		**Warranty void:**	YES/NO*
Is the machine in warranty at the moment of reporting?	YES/NO*	Name:	Signature:

QC signature: **Date:**

ОФИЦИАЛЬНЫЙ ДИЛЕР В УКРАИНЕ:
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