



NTC STAVEBNÍ TECHNIKA spol. s r.o.

Maloskalická 120, 552 03 Česká Skalice

Czech Republic

Tel.: +420 491 452 184

E-mail: ntc@ntc.cz

fax: +420 491 401 609

www.ntc.cz

OPERATION MANUAL

VIBRATORY PLATE COMPACTORS

line „CLASSIC“, „PRACTIC“



(issued 10/2002)

TRANSLATION OF THE ORIGINAL OPERATION MANUAL (2006/42/EC)

ES PROHLÁŠENÍ O SHODĚ**EC Declaration of conformity**

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):	NTC STAVEBNÍ TECHNIKA spol. s r.o.
Sídlo firmy (legal address):	V Aleji 654, Nové Město nad Metují 549 01
Sídlo provozovny: (company headquarters)	Maloskalická 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 JEDNOSMĚRNÁ
Typ (type):	VD 450/22
Výrobní číslo (serial number)	
Popis (description):	Vibrační desky jsou určeny pro zhutňování všech druhů zemin včetně navazujících půdních úseků, pro zhutňování a pro zhutňování příkopů a ploch, jakož i pro zhutňování asfaltových vozovek. Při použití s plastovou podložkou je možné vibrační desku používat rovněž pro zahutnění zámkové dlažby. Pohon vibrační desky je zajištěn čtyřdobým jednoválcovým motorem HONDA (jmenovitý výkon: 3,6 kW). <i>The forward vibratory plates are designed for compaction of soils or asphalt layers, when used with an optional plastic pad it can be used also for compaction of concrete pavement. The machine is driven with four-stroke single-cylinder engine HONDA (rated power 3,6 kW).</i>
Všechna příslušná ustanovení, která výrobek splňuje (The product meets all relevant provisions)	Strojní zařízení – směrnice 2006/42/ES; NV 176/2008 Sb. <i>Machinery Directive 2006/42/EC</i> Emise hluku – směrnice 2000/14/ES; NV 9/2002 Sb. <i>Noise Emission 2000/14/EC</i> Elektromagnetická kompatibilita – směrnice 2004/108/ES; NV 616/2006 Sb. <i>Electromagnetic Compatibility Directive 2004/108/EEC</i>
Harmonizované technické normy: (The harmonized technical standards)	ČSN EN ISO 12100-1,2, ČSN EN ISO 14121-1, ČSN EN 500-4+A1, ČSN EN 474-1+A1, ČSN EN 60204-1 ed.2
Osoby zúčastněné na posouzení shody (Bodies engaged in the conformity assessment)	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, 16344 Praha 6-Řepy, ČR <i>The Government Testing Laboratory of Agricultural, Food Industry and Forestry Machines, joint-stock-company</i>
Použitý postup na posouzení shody: (To the conformity assessment applied procedure)	Na základě směrnice 2000/14/ES příloha VI; NV 9/2002 Sb., příloha 5 <i>Pursuant to the Directive for Noise Emission 2000/14/EC Annex VI</i> Na základě směrnice 2006/42/ES příloha IX; NV 176/2008 Sb., příloha 9 <i>Pursuant to the Machinery Directive 2006/42/EC Annex IX</i>
Naměřená hladina akustického výkonu: (Measured sound power level)	$L_{WA} = 98 \text{ dB}$
Garantovaná hladina akustického výkonu: (Guaranteed sound power level)	$L_{WA} = 101 \text{ dB}$

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, 01.01.2010

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

Jméno (Name):
 Ing. Petr Ratsam

Funkce (Grade):
 jednatel společnosti (Company Executive)

Podpis (signature)

Congratulations! You have purchased a non-reversible vibratory plate compactor. You receive high-quality and powerful compaction machine, intended for professional use under the heaviest 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 keeping the operation manual.



1. SAFETY INSTRUCTIONS

1.1. General Instructions

1. Requirements for qualification of the operator:

- The vibratory plate must be operated by trained, reliable operators, of age above 18. The operator must read and understand the safety instructions, the regulations valid for the respective jobsite and valid technological procedure. This should be proved by getting operator's signature.

The operator is obliged to use suitable working dress, safety gloves and firm boots with hard tip. Do not wear loose or torn clothes, chains or jewelry which could be caught by moving parts of the machine.

- The operator is obliged to use safety goggles and ear protection.
2. The vibratory plate may be used only for compaction jobs in accordance with this operation manual.

1.2. Hygienical Data

	VD 350/16	VD 450/18	VD 450/20	VD 450/22
Noise level	92 dB(A)	89 dB(A)	89 dB(A)	89 dB(A)
Acoustic output	101 dB(A)	101 dB(A)	101 dB(A)	101 dB(A)
Acceleration transferred to hands	10,2 m/s ²	16,2 m/s ²	12,3 m/s ²	9,6 m/s ²

	VD 301/11	VD 351/14	VD 451/18	VD 501/20
Noise level	88 dB(A)	92 dB(A)	89 dB(A)	92 dB(A)
Acoustic output	101 dB(A)	105 dB(A)	103 dB(A)	103 dB(A)
Acceleration transferred to hands	9,8 m/s ²	10,2 m/s ²	12,3 m/s ²	16,2 m/s ²

	VD 301/11	VD 450/18 VD 450/20 VD 450/22	VD 451/18	VD 350/16 VD 351/14 VD 450/18	VD 501/20
1. Because of the noise level, the operator is obliged to use ear protection effective for the noise level:	88 dB(A)	89 dB(A)	89 dB(A)	92 dB(A)	92 dB(A)
2. Work with the machine must be interrupted regularly, the breaks should last at least:	10 min.	10 min.	10 min.	10 min.	10 min.
3. Total time of work with the machine should not exceed:	30 minutes per working shift.	20 minutes per working shift.	20 minutes per working shift.	10 minutes per working shift.	10 minutes per working shift.

4. The technological procedures should be arranged accordingly.
5. The operator should not be exposed to excessive noise or vibrations during the breaks.
6. Should the machine be used to longer time than specified in point 2 above, the local hygienical authority should be consulted.
7. Within residential areas, the machine can be used only from 6 a.m. to 6 p.m.

1.3. Inspection

1. Do not remove any safety devices (covers etc.) from the machine.
2. Check all controls and safety devices prior to starting.
3. If any failures which affect operational safety are found during the work, the operator must stop the machine immediately.

1.4. Operation

Before starting:

1. Check the machine thoroughly, repair all failures before starting the engine. If the failures cannot be repaired at the jobsite, do not operate the machine.
2. Check the fuel system for leaking. Dripping fuel poses fire hazard.

Starting and operation:

3. When starting the engine, take stable position and held the grip firmly.
4. The controls must be in good order.
5. The operator must not leave from his position when the engine is running.
6. Stop the engine before interrupting the work. When parking the machine, secure it from falling.
7. Stop the engine before refueling. Avoid contact between fuel and hot parts of the engine. Let the engine to cool down first.
8. Keep the fuel tank tightly closed. Close the fuel tap when not in operation. Drain the fuel before transporting the machine for longer distances.

DANGER! Leaking fuel tank and distribution may cause explosion. Replace these parts immediately if damaged.

Jobsite:

9. No bystanders are allowed within the operational range of the machine. Especially children should be kept in safe distance.
10. No don operate the machine in areas with explosion danger.
11. If operated in closed spaces (halls, tunnels, deep digs), there should be ensured sufficient ventilation.
12. High care should be paid at the edges of digs, heaps or slopes in order to avoid falling down.
13. Held and guide the machine with high care in order to avoid hands injury caused with contact with an obstacle.
14. Do not smoke, do not use naked flame. Do not work close to flammables or in explosion danger areas.
15. Avoid touching hot parts. The exhaust silencer and other parts of the engine are very hot during operation and touching them can cause serious burns.

1.5. Maintenance and Service

1. Do not remove any covers or other safety devices. In case this must be done because of service, install all the parts back before starting.
2. Use genuine spare parts only. do not carry out any modifications without prior written approval of the manufacturer.
3. Stop the engine before servicing the machine.

1.6. Transport and Storage

1. When loading and transporting the machine fasten the machine properly on the carrier.
2. The vibratory plate is to be transported in upright position (with engine upwards). This position is also suitable for storing.
3. Prior to long-term storage: Conserve the machine, cover it and store it at safe, dry and ventilated place.

1.7. Testing

It is recommended to test the machine by authorized service at least once a year or more often if used under heavy conditions.

If necessary, carry out repairs of all possible failures.

Non-reversible vibratory plate compactors - line „CLASSIC“**Non-reversible vibratory plate compactors - line „PRACTIC“**

2. TECHNICAL DESCRIPTION

Non-reversible vibratory plate compactors are intended for compaction of soil, asphalt and pavements.

These vibratory plates have optimized centrifugal force and compaction area and thus reach optimal compaction effect.

The vibratory effect is ensured by non-directed eccentric which creates circular vibration.

The main working part - the base plate - is a structure made of welded steel. The vibrator is bolted or welded to the base plate. The engine plate is mounted to the base plate through the rubber mounts.

The vibratory plate is driven by a four-stroke single-cylinder air cooled engine. The most common ones are gasoline engines HONDA or

ROBIN and diesel engines HATZ. The engine is connected with the vibrator by a drive belt, with a centrifugal clutch which disengages the drive at idle speed.

The control handle of the „CLASSIC“ line is mounted on rubber mounts which eliminate vibration transfer to operator hands. There is a throttle control lever for higher comfort and the control bar is collapsible, which minimizes transport dimensions of the machine.

The „LIGHT“ line has simple control handle, the throttle lever is directly on the engine.

The manufacturer offers the following options: transport wheels, soft pad for compaction of pavement and sprinkling set (not available for the „LIGHT“ line).

Basic technical data:

		VD 350/16	VD 450/20	VD 450/22	VD 450/18
Weight	(kg)	110	120	150	110
Frequency	(Hz)	81	81	81	81
Centrifugal force	(kN)	16	20	22	18
Max. speed	(m/min)	25	25	25	25
Max. gradability	(%)	40	40	40	35
Width of base plate	(mm)	350	450	450	450
Length of base plate	(mm)	550	550	550	550
ENGINE		HONDA	HONDA	HONDA	HONDA
Fuel		gasoline	gasoline	gasoline	gasoline
Model		GX 120	GX 160	GX 160	GX 160
Power	(kW)	2,6	3,6	3,6	3,6
Speed	(RPM)	3600	3600	3600	3600
Fuel consumption	(l/hr)	0,9	1,1	1,2	1,2

		VD 301/11	VD351/14	VD451/18	VD501/20
Weight	(kg)	60	85	105	120
Frequency	(Hz)	92	81	81	81
Centrifugal force	(kN)	11	14	18	20
Max. speed	(m/min)	30	25	25	24
Max. gradability	(%)	40	40	40	40
Width of base plate	(mm)	300	350	450	500
Length of base plate	(mm)	520	550	550	550
ENGINE		HONDA	HONDA	HONDA	HONDA
Fuel		gasoline	gasoline	gasoline	gasoline
Model		GX 100K2	GX 120K1	GX 160K1	GX 160K1
Power	(kW)	2,1	2,6	3,6	3,6
Speed	(RPM)	3600	3600	3600	3600
Fuel consumption	(l/hr)	0,7	0,9	1,2	1,2

Actual output of the engine installed in the machine can be different with regard to various factors, such as operation speed of the engine, operation conditions, maintenance and other factors.

Engine operation speed is not identical with engine rated speed and this is set according to technical parameters of the machine.

Lubricants:

- engine oil	SUNOCO 15W-40	as per engine
		HONDA c/a 0,6 l
		ROBIN c/a 0,6 l
		HATZ 1B20 c/a 0,8 l
- oil in the vibrator	SUNOCO 15W-40	capacity 0,20 l

Alternatively it is possible to use other quality brand oils, viscosity class SAE 15W/40, output class API SG/CF 4, API SG/CE.

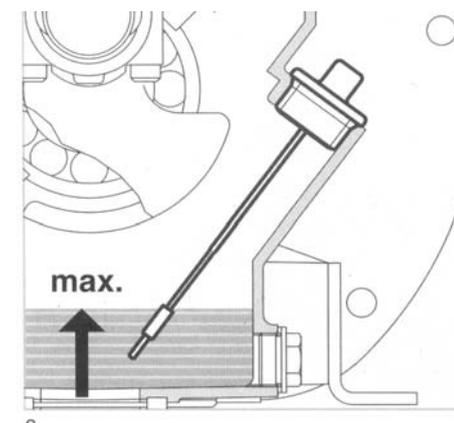
3. PRIOR TO STARTING

3.1. Inspection of engine oil level

Use the recommended oil only.
 The viscosity class should be selected with regards to usual ambient temperature at the respective location.
 Wipe the filler and the dipstick with a clean cloth. Place the dipstick in the hose without screwing it in. If the oil level is below the mark, top up oil to the upper mark.

ATTENTION :
 Operation with insufficient oil level will cause serious damage to the engine.

Oil level is to be checked daily.

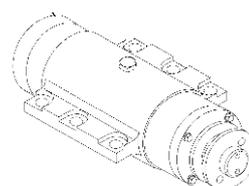


3.2. Inspection of oil level in the vibrator

The vibratory exciter is filled with approx. 0,2 l of oil. Oil level check is to be done as follows:
 Put the machine on a level area. Unscrew the inspection / drain bolt at the vibrator. At correct level, oil slightly leaks out.
 If you find a leakage from the vibrator, stop operation immediately and contact the service.

The vibrator may be repaired only by an authorized service technician. The manufacturer will not honor warranty claims in case of unauthorized repair of the vibrator.

ATTENTION:
 Low or too high oil level may cause damage to the bearings of the vibrator.



3.3. Inspection of fuel level

- For gasoline engines, use leaded or unleaded gasoline with octane number 90 or higher. If necessary, top up fuel, up to the edge of the sieve. Never use dirty gasoline or mixture with oil. Prevent dust, dirt or water from entering into the tank.
- For diesel engines, use diesel fuel as per the following standards:

- CEN EN 590, DIN/EN 590
- DIN 51 601
- BS 2869: A1 a A2
- ASTM D 975-88: 1-D a 2-D
- VV-F-800C: DF-A, DF-1 a DF-2
- NATO code F-54 a F-75

At temperatures below freezing, use winter-grade diesel fuel or special additives, in order to prevent dissipation of paraffins in the fuel system.

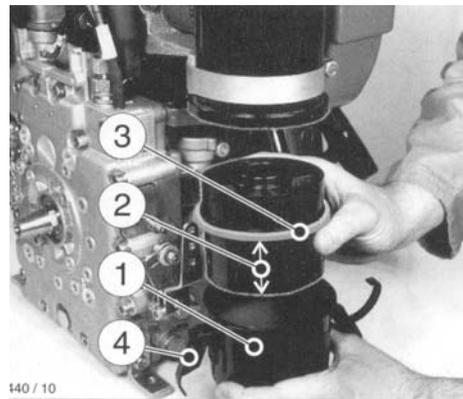
3.4. Inspection of air filter

Check the air filter on a daily basis. Clean or replace the filter element as necessary. Never operate the engine without the filter or with a damaged one. Dirt and dust entering the engine would cause its rapid damage.

Fig. 1 Air filter - HONDA engines



Fig. 2 Air filter - HATZ engines



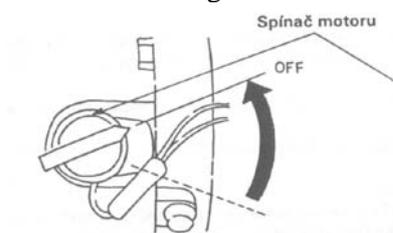
4. STARTING

4.1. Gasoline engines HONDA and ROBIN

1. Turn the fuel tap into the „ON“ position



2. Turn on the ignition switch.



3. Place the choke lever in the engaged position. Do not engage the choke at warm engine.
4. Set up the throttle lever into the idle position.
5. Pull up the starter grip till some resistance is felt, then pull vehemently. Do not release the grip, but return it slowly to the original position.
6. Let the engine to warm up, then disengage the choke.
7. Let the engine to warm up for 3-5 minutes before full load is applied.
8. Set up the throttle lever to the „full throttle“ position. At about 1700 RPM, the centrifugal clutch gets engaged and the vibrator begins to work.

4.2. Diesel engines HATZ

1. Set up the throttle control lever into the idle position ("0").
2. Pull up the starter grip till some resistance is felt, then pull vehemently. Do not release the grip, but return it slowly to the original position.
3. Let the engine to warm up for 3-5 minutes before full load is applied.
4. Set up the throttle lever to the „full throttle“ position. At about 1700 RPM, the centrifugal clutch gets engaged and the vibrator begins to work.

5. TURNING OFF

5.1. Gasoline engines HONDA and ROBIN

1. Set up the throttle control lever into the idle position. The centrifugal clutch gets disengaged and vibration will stop.
2. Turn the ignition switch into the "OFF" position.
3. Close the fuel tap.

5.2. Diesel engines HATZ

1. Set up the throttle control lever into the idle position. The centrifugal clutch gets disengaged and vibration will stop.
2. To stop the engine, shift the throttle control lever into the backmost position.

6. MAINTENANCE

1. For engine maintenance, check the separate operation manual.
2. Tensioning of the drive belt:
Loose four bolts that fasten the engine to the base plate. Tension the drive belt by means of the tensioning screw. Re-tighten the bolts.
3. Exchange of oil in the vibrator:
 - warm-up the vibrator to operational temperature
 - turn off the engine, unscrew the drain plug (marked with an arrow)
 - incline the machine to drain off oil completely (c/a 0,2 l)
 - screw on the drain plug and add new oil up to the mark at the oil dipstick. Do not fill too much oil.
4. Inspection of bolted connections:
It is recommended to check regularly the bolted connections. In case of dismantling the vibrator, tighten the fastening bolts with torque-limiting wrench to 75 Nm.
5. Adjustment of the centrifugal clutch
In case of repair or replacement of the centrifugal clutch, check the engaging revolutions with a speedometer. If the engaging speed is over 1950 RPM, adjust the clutch with the adjusting screw.
6. Adjustment of the engine speed
In case of repair or replacement of the engine, adjust the engine speed as follows:
Remove the belt cover and measure revolutions of the vibrator pulley. Adjust the engine to the following values:

VD 300/11	5520 min⁻¹
other models	4860 min⁻¹

NEVER ADJUST HIGHER ENGINE SPEED!

(Exceeding of the prescribed speed may lead to serious damage to the engine and/or the vibrator due to excessive vibrations.)

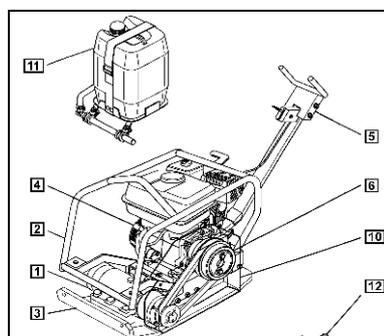
The manufacturer will not honor any warranty claim arising from such reason!

DURING WARRANTY PERIOD, THIS ADJUSTMENT MUST BE CARRIED OUT BY AUTHORIZED SERVICE!

Basic groups of the vibratory plate compactors:

(for detailed specification of spare parts check the spare parts catalogue)

Note: All models of the „PRACTIC“ line do not have the protective cage. These models cannot accommodate the sprinkling (except of the VD 301/11).



7. MAINTENANCE SCHEDULE

This maintenance schedule contains only the most important operations. Besides of these operations, carry out maintenance and repairs of the machine as necessary depending on the respective conditions of operation. Check also the engine operation manual.

WARNING:

Turn off the engine before any maintenance or repair activity.

Use genuine spare parts only. Use of non-original spare parts may lead to damage to the machine. The manufacturer will not honor any warranty claim arising from such reason.

Item	Operation	Initial inspection	After 1st month or 20 hrs.	Every 3 months or 50 hrs.	Every 6 months or 100 hrs.
Engine oil	Inspection of oil level	<input checked="" type="checkbox"/>	DAILY		
	Exchange		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Air filter	Inspection	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> (1)	
	Cleaning				
Spark plug (gasoline engines)	Inspection - cleaning				<input checked="" type="checkbox"/>
Injection system (diesel engines)	Inspection - cleaning	Every 12 months or 300 hrs. (2)			
Filter bowl	Cleaning				<input checked="" type="checkbox"/>
Fuel hose	Inspection - Exchange	Every two years			
Valve clearance	Inspection - adjustment	Every 12 months or 300 hrs. (2)			
Fuel tank and sieve	Cleaning	Every 12 months or 300 hrs. (2)			
Vibrator	Inspection of oil level	<input checked="" type="checkbox"/> (3)		<input checked="" type="checkbox"/> (3)	
	Exchange				250 (3,4)
Drive belt	Tensioning			<input checked="" type="checkbox"/>	
Rubber mounts	Inspection				150
Handle assembly	Lubrication				<input checked="" type="checkbox"/>

1. To be carried more often when operating in dusty environment!
2. It is recommended to be carried out by skilled technician.
3. Use the dipstick for oil level inspection (supplied with every machine as an accessory).
4. The drain hole is marked with an arrow.