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# OPERATION MANUAL

## ASPHALT AND CONCRETE CUTTERS



ORIGINAL OPERATION MANUAL (2006/42/EC)

**Model: VZ4**

## EC Declaration of Conformity

*We declare that the trough below mentioned specifications defined equipment complies with requirements of below cited Directives*

<b>Manufacturer:</b>	ADAMAS NEDERLAND
<b>Company domicile:</b>	Tel: +31 (0)174 511 333
<b>Office premises:</b>	Industrieterrein 'Coldenhove'
<b>Identification number:</b>	Aartsdijkweg 19 NL-2676 LE Maasdijk
<b>Person in charge of assembling and storing technical documentation</b>	
<b>Model:</b>	VZ4
<b>Type:</b>	FLOORSAW
<b>Serial number:</b>	
<b>Description:</b>	Asphalt and concrete cutters are designed for cutting of joints in asphalt or concrete surfaces, i.e. at repairs of roads, industrial areas, etc. The machine is driven with four-stroke single-cylinder engine HONDA (net power 3,6 to 8,2 kW).
<b>The product meets all relevant provisions</b>	Machinery Directive 2006/42/EC Noise Emission 2000/14/EC Electromagnetic Compatibility Directive 2004/108/EC
<b>The harmonized technical standards and technical standards</b>	EN ISO 12100-1,2, EN ISO 14121-1, EN 500-1+A1, EN 500-4+A1, EN 474-1+A1, EN 60204-1 ed.2, EN ISO 14982:1998
<b>Measured sound power level</b>	<b>LWA = 90, 101, 93, 104, 94 dB</b>
<b>Guaranteed sound power level</b>	<b>LWA = 104, 110, 109, 111 dB</b>

*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.*

**Place and date of issue:**  
Česká Skalice,  
01.01.2010

*Signed by the person entitled to deal in the name of producer:*

**Name:**  
Ing. Petr Ratsam

**Grade**  
Company Executive

**Signature**

Congratulations! You have purchased an asphalt and concrete cutter NTC. You receive high-quality and powerful 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.

This machine was manufactured by ADAMAS NEDERLAND



Address: Tel: +31 (0)174 511 333  
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ADAMAS NEDERLAND is a light construction equipment manufacturer with a long-term experience. NTC machines are exported to many European countries, among others to Spain, Netherlands, Italy, Hungary, Romania and Russia.

NTC has certified quality control system according to ISO 9001.

All manufactured models undergo testing, measuring and consideration of safety risks; all machines conform to safety standards and bear the CE mark.

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Revision	Content	Date
2	Added models VZ4	08/2003
3	The total change and update	05/2005
4	Updated by Directive 2006/42/EC	01/2010

## 1. SAFETY INSTRUCTIONS

### 1.1. General instructions for operation of light construction equipment

#### 1.1.1. Requirements for qualification of the operator

1. The machine 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 the operator's signature.
2. 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 that could be caught by moving parts of the machine. The operator is obliged to use safety goggles and ear protection.
3. The machine may be used for intended purpose only, in accordance with this operation manual.

#### 1.1.2. Contractor's obligations

The contractor is understood to be a physical or legal person that carries out construction works and for such purpose uses construction equipment. The contractor is responsible for operational safety.

The contractor is obliged to:

- designate the operator and arrange his training
- ensure safe working conditions
- inspect attendance of the safety regulations

- inspect that the operator works with the machine in accordance with the Operation Manual
- ensure regular inspections, maintenance and repairs of the machine
- store the Operation Manual so that it is readily available
- arrange suitable, safe and adequate storing of the machine when not in use

The contractor is also responsible for proper attendance of lawful regulations of work safety and regulations valid for each respective jobsite.

#### 1.1.3. Operator's obligations

The operator is to be designated by the contractor, while keeping conditions of the article 1.1.1.

The operator is namely obliged to:

- prior to starting, he should read and understand the Operation Manual including the safety instructions
- attend all instructions of the Operation Manual
- learn about the jobsite and the locally valid safety regulations; these must be kept during the work
- pay full attention to operation of the machine

- arrange that regular inspections, maintenance and repairs of the machine are carried out as according to the Operation Manual
- require from the contractor proper conditions for keeping safety instructions, regular inspections, maintenance and repairs
- avoid damage, misuse or unauthorized use to the machine, namely by proper storing the machine to a secured place

#### 1.1.4. Operation of the machine

##### 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.
9. No bystanders are allowed within the operational range of the machine. Especially children should be kept in safe distance.
10. Do not operate the machine in areas with explosion danger.
11. If operated in closed spaces (halls, tunnels), there should be ensured sufficient ventilation.
12. 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.

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

**Jobsite:****1.1.5. 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.

**1.1.6. Transport and Storage**

1. When loading and transporting the machine fasten the machine properly on the carrier.
2. The machine 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.

**1.1.7. 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.

**1.2. Prohibited activities**

Never:

- use the machine for other than intended purposes
- use the machine in other way than as described in the Operation Manual
- operate the machine drunk or intoxicated
- operated the machine if its operation could cause harm to other people
- start and operate the machine if there are other people within the dangerous area
- operate the machine if some safety device (i.e. cover) is damaged or missing
- operate the machine in areas with external risks (risk of soil flow, dangerous fumes, risk of explosion, risk of electrical shock, etc.)

- operate the machine in areas where its operation may cause damage to buildings, structures or utility lines
- operate the machine within the protective range of power lines or transformer stations
- operate the machine under poor visibility or at night, unless the jobsite is sufficiently illuminated
- leave unprotected machine

- disable or modify safety devices, protective and safety systems
- operate the machine with leaking oil, fuel or other liquids
- start the engine in other way than described in the Operation Manual
- clean a running machine
- smoke or use naked flame when refueling

### **1.3. Hygienic principles**

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

Pay special care to:

- skin care
- wash hands properly after finishing the work and apply suitable cream

Store the fuels, lubricants, paints, thinners, 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.

### **1.5. Liquidation of the machine**

After the machine exceeds its lifetime period, the contractor is obliged to arrange its proper liquidation in accordance with the respective

lawful regulations and with regards to environmental protection.

It is highly recommended to commit this task to a specialized company.

### **1.6. Safety Instructions**

Besides of general safety instruction, the following special instruction must be followed:

1. Prior to starting the work, find out where are underground spaces, utility lines, etc.
2. Never remove the blade cover when the engine is running.
3. After stopping the engine, wait till the blade gets fully halted.
4. After fitting the cutting blade, pace on the cover and secure it.

5. Be sure to remove the wrenches from the blade shaft!
6. Do not allow other people close to running machine.
7. **DANGER!**  
The cutting blade is always turning as soon as the engine is started. The revolving blade presents a risk of injury!

**1.7. Hygienic data**

	RZ 120	RZ 170	RZ 111	RZ 121	RZ 171
Declared noise emission level at the operator <b>L<sub>pAd</sub></b> [dB]	101	104	86+4	89+4	90+4
Guaranteed sound power level <b>L<sub>WA,G</sub></b> [dB]	110	111	104	109	111
Acceleration transferred to hands <b>a<sub>hvd</sub></b> [m.sec <sup>-2</sup> ]	12,5	14,5	10,0+4,0	12,3+4,9	5,9+2,4

1. In view of the guaranteed value of the sound levels on-site service, and value of vibration on hands, you must work with each type of floor saws used in accordance with applicable safety regulations personal protective equipment active in that area sound level or vibration at hand, the values listed above for the type of floor saws.
2. Working practices for working with the joint cutter shall be adjusted so that they result from technology breaks leading to the interruption of exposure.
3. During the technology breaks required in terms of health, not the worker, who at the time worked before the break with the machine in question, be exposed to excessive noise or vibration, which originated from another source.
4. Operation in or close to residential areas is restricted from 6.00 a.m. to 6.00 p.m.

**2. TECHNICAL DESCRIPTION**

The asphalt and concrete cutters RZ are intended for cutting of asphalt and concrete floors or road layers when repairing roads, industrial areas, etc.

The machine is based on a rigid frame with fixed spindle; the cutting disc is lowered to the cut together with the whole frame. Lowering and rising of the cutting disc is controlled by means of a arrested handle that enables fine regulation of cutting depth.

The machine is intended for wet cutting and therefore it is equipped with a sprinkling system. Water for sprinkling can be brought

either from machines-mounted water tank of from external source.

The machines can be used also for dry cutting, assuming a suitable cutting disc is used. This method however causes high generation of dust and thus breathing protection would be required. The machine is driven by a single-cylinder, four-stroke gasoline engine HONDA.

Travel is manual; the operator pushes the machines by height-adjustable handle.

Floor saws RZ are equipped with a reference depth scale.



**2.1. Basic Technical Data:**

		<b>RZ 120</b>	<b>RZ 170</b>
Cutting depth	(mm)	120	170
Cutting disc fastening		at right	at right
Max. disc dia	(mm)	350 (400)	450
Travel		manual	manual
Cutting depth adjust.		mechanical, adjustable	
Fastening hole dia	(mm)	25,4	25,4
Spindle speed	(RPM)	3400	2800
Water tank capacity	(ltr)	15	15
Water supply		aqua clutch	aqua clutch
Weight (waterless)	(kg)	95	106
Dimensions L x W x H	(mm)	1020x530x1040	1020x530x1040
Engine		HONDA GX270	HONDA GX390
Max. power	(kW)	6,3	8,7
Max. speed	(RPM)	3600	3600
Oil sensor		yes	yes
Fuel consumption	(ltr/hr)	1,5	2,2

<b>"ultralight"</b>		<b>RZ 111</b>	<b>RZ 121</b>	<b>RZ 171</b>
Cutting depth	(mm)	110	120	170
Cutting disc fastening		at right	at right	at right
Max. disc dia	(mm)	300	350	450
Travel		manual	manual	manual
Cutting depth adjust.		mechanical, adjustable		
Fastening hole dia	(mm)	25,4	25,4	25,4
Spindle speed	(RPM)	3600	3400	2800
Water tank capacity	(ltr)	15	15	15
Water supply		aqua clutch	aqua clutch	aqua clutch
Weight	(kg)	55	72	78
Dimensions L x W x H	(mm)	780x410x850	920x460x950	920x465x950
Engine		HONDA GX160	HONDA GX270	HONDA GX390
Max. power	(kW)	3,6	6,3	8,7
Max. speed	(RPM)	3600	3600	3600
Oil sensor		yes	yes	yes
Fuel consumption	(ltr/hr)	0,9	1,5	2,2

**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.**

**2.2. Lubricants**

For use in both engine and the vibrator use high-quality engine oils of the following specifications: 15W-40 API SJ/CF

- engine oil	HONDA GX160	approx. 0,6 ltr
	HONDA GX270	approx. 1,1 ltr
	HONDA GX390	approx. 1,1 ltr

### 2.3. Identification

For communication with the manufacturer (i.e. for warranty claims, service requests, spare parts ordering) always report exact model and serial number of your machine.

These data are stamped on the machine decal.

Fig. Machine decal

<b>NTC</b> NTC STAVEBNÍ TECHNIKA spol. s r.o. MALOŠKALICKÁ 120 ČESKÁ SKALICE, CZECH REPUBLIC		CE
K-ŽEV-STROJ/NAME <b>CONCRETE CUTTER</b>		
TYP-STROJE/TYPE		ROK-VÝROBY/YEAR OF CONST.
ČÍSLO-STROJE/SERIAL No	PROVOZNI HMOTNOST/OPERATING WEIGHT	
	kg	
MOTYK/ENGINE POWER	MAX. HMOTNOST/MAXIMUM WEIGHT	
kW	kg	

### 2.4. Engine Identification

In case of problems related to the engine report also engine type and serial number. This number is stamped on the engine block (HONDA) If you have doubts, contact the manufacturer.

Fig. Location of the S/N on engine HONDA



## 3. PRIOR TO STARTING

- Check whether the engine leaking (leaks) oil. In case of defect, contact an authorized service center or manufacturer.
- Bolted connections for loop control of depth of cut and the matrix arm guidance (SS 120, 170) are glued. Screws at the pulleys, the drive chassis are tight and prescribed the query moment. We therefore recommend against any potential activity associated with permitting and tightening of joints, and contact information to an authorized service center or manufacturer.

### 3.1. Check - Oil Level

It is highly recommended to check regularly the engine oil level even at machines equipped with the oil sensor.

In case of a machine without the oil sensor, daily check is a must.

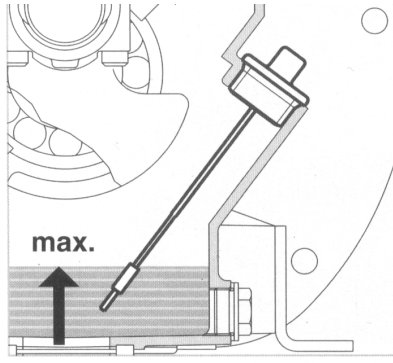
Clean the filling hole before checking or adding oil. Wipe dry the dipstick and immerse it in the oil without screwing it in.

If necessary, add specified sort of oil up to the upper mark.

#### NOTE :

Operation with insufficient oil level may cause serious damage to the engine.

**Check the engine oil level daily!**



### 3.2. Visual Inspection of the Machine

Check regularly the machine for:

- missing parts
- released bolts and screws
- oil or fuel leakage

- free motion of the cutting disc spindle

Pay special attention to safety devices (covers) and controls.

### 3.3. Adding Fuel

#### 1. Gasoline engines:

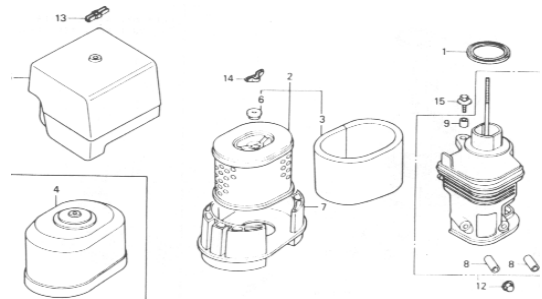
Use unleaded or leaded gasoline for motor vehicles, with octane number 91 or more. Top up fuel as necessary.

Never use dirty fuel or mixture with oil. Avoid water and dust from entering the fuel tank.

### 3.4. Check - Air Filter

Check the air filter for cleanness on a daily basis. Clean or replace the filter if dirty. Never run the machine with air filter missing or damaged. Dust and dirt which get into the engine would cause rapid wear.

**Fig. Air filter - HONDA**



### 3.5 Tipping machine

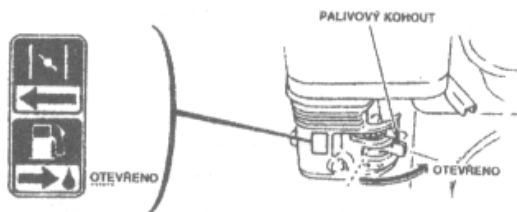
Tipping machine when the machine tipped over may break of oil into the carburetor, or the plunger. Therefore, we recommend to inform the authorized service center, or the manufacturer about how to proceed.

## 4. OPERATION

### 4.1. Starting

#### 4.1.1. Gasoline Engines HONDA

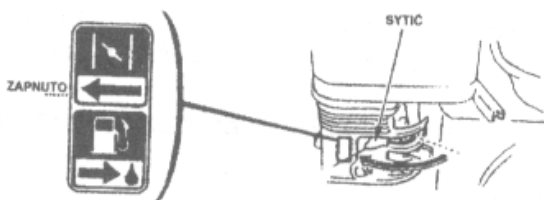
1. Turn the fuel tap into the ON position.



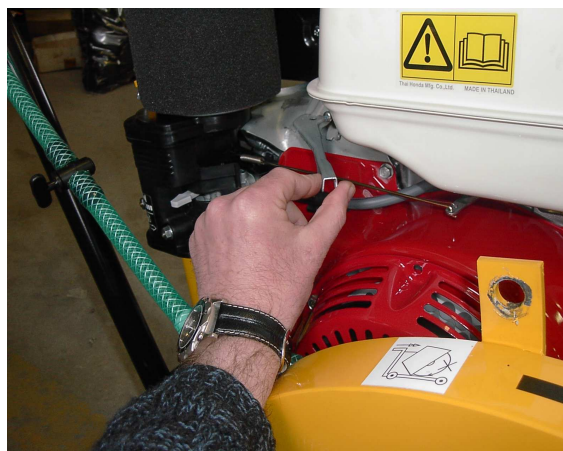
2. Turn on the electric switch of ignition.



3. Engage the choke („CHOKE“). Do not use it at warm engine or at high ambient temperature.



4. Adjust the throttle control lever to idle.



5. Pull out the starter grip slowly till some resistance is felt, then pull vehemently. Do not release the grip, but return it slowly into the original position.
6. Let the engine to warm up, then disengage the choke.
7. Let the engine to run at idle for a while before loading.
8. For cutting, shift the throttle control lever to fully open position.

### **DANGER!**

The spindle and the cutting disc begins to rotate immediately. Be sure that the revolving disc would not cause any danger for the bystanders. Have the disc cover closed before starting.

### 4.2. Operation

#### 4.2.1. Selection of the Cutting

##### Disc

For safe and efficient operation, right selection of the cutting disc is highly important. Choose a high-quality diamond cutting disc and appropriate type depending on the material to be cut (asphalt, concrete).

Cutting discs of most suppliers are divided in quality categories (standard/profi etc.),

sometimes also according to length and height of the diamond segments, spacing, etc. Cutting disc diameter is to be selected according to the type of the machine; if possible, choose always the maximal allowed diameter (RZ 120 350 mm, RZ 170 450 mm). The spindle speed is adjusted for this size to keep optimal circumferential cutting speed of the disc.

#### 4.2.2. Fastening of the Cutting Disc

1. Turn off the engine and open the disc cover.
2. Use the enclosed wrenches to hold the spindle and unscrew the fastening nut.  
NOTE: Left thread!
3. Fit the cutting disc on the spindle and secure it.
4. Close the disc cover and secure it.



Types RZ 120, RZ 170



Types RZ 111, RZ 121, RZ 171



#### 4.2.3. Cutting

1. Have the disc raised above floor. Start the engine and set full throttle.
2. Open the water tap to engage sprinkling.
3. Move the machine to the beginning of the cut.
4. Lower slowly the disc into the cut, till required cutting depth is reached.
5. Sensitively push the machine forward and follow the marked path (use the guide).
6. The machine can only cut in straight direction. In case the direction must be changed, raise the disc from the cut, take new direction and lower the disc again.

7. At the end of the cut, raise the disc, set the throttle to idle.

**NOTE! The cutting disc should be sprinkled all the time. Follow the water level in the tank and timely add water as necessary. Dry cutting may cause fast damage to the disc.** For optimal service life of the cutting disc, the operator should work carefully and sensitively. Do not force the machine! Nevertheless, lifetime of the disc may vary depending on the material to be cut and other factors.

#### 4.2.4. Cutting Depth Scale

Cutters RZ 120 and RZ 170 have the cutting depth scale. Use the scale as follows:

1. Lower the disc just to touch the ground. In this position, adjust the "zero" using the wing nuts below the scale.

2. Alternatively you can just remember the value on the scale and then add or subtract required cutting depth as necessary. Cutters RZ 111, RZ 121 and RZ 171 do not have the scale. The cutting depth is to be set up as follows: Turn the handle by 1 revolution = disc rising/lowering by 15 mm.

**4.3. Engine Turning-Off**

1. Shift the throttle control lever to idle position.
2. Let the engine to idle for a while to cool down.
3. Turn the ignition switch to "OFF".
4. Close the fuel tap

**4.4. Handling, Transport, Storing** When handling the machine keep safety regulation shown in this manual and well as

general safety rules valid for operation of lifting or hoisting equipment.

**4.4.1. Manual Handling**

For manual lifting, cooperation of mode people is required. Hold the machine by frame or the base plate. Never lift the machine by engine.

**4.4.2. Handling by Crane**

Use a crane of sufficient payload (see Technical Data). Observe the regulations valid for operation of cranes. Only qualified personnel may carry out this work.

Fasten the lifting cable to the marked point at the machine.

**4.4.3. Handling by Forklift**

Should be the machine extensively handled by a forklift (as when sending it by a parcel service), it is recommended to palletize it. For one

machine use "small" palette (0,8x0,6m), for two machines standard EUR pallet (1,2x0,8m).

**4.4.4. Transport**

Secure the machine against rolling over, falling down or sliding on the carrier. Fasten the binding means to suitable points at the frame.

**NOTE:**

The machine must be kept in upright position.

**4.4.5. Storing**

Store the machine on a safe place, secured from theft and misuse. We recommend an indoor dry place, without excessive concentration of chemical agents and dust.

Prior to long-term storing clean the machine, repair the paint and apply suitable preservation agents. Mark visibly that the machine has been conserved.

**4.5. Special Conditions of Operation****4.5.1. Work at Low Temperatures**

The cutter is able to work even at low temperatures. Let the engine to warm up sufficiently before commencing the work.

In case that the machine is difficult to start, let it warm up at room temperature first.

**4.5.2. Work at High Altitudes**

With rising altitude the engine power decreases due to changed air/fuel ratio. The engine power can be partially improved by changing of the main nozzle and different adjustment of the carburetor (gasoline engines) or different adjustment by the injector (diesel engines).

In case that the engine should work long-term above 1500 m above seal level, we recommend to contact a nearest authorized service for the respective engine.  
In case that you plan this kind of operation already when purchasing a new machine, notify the manufacturer.

**4.5.3. Work in Dusty Environment**

In case of dusty environment shorten the cleaning/replacement intervals of the air filter to half. Clean the machine from dust regularly.

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**5. MAINTENANCE**

The basic activities of maintenance, which are described in this Manual can be carried out by the designated operator.

Repairs and adjustments beyond the extent of this Manual should be committed to an authorized service.

**Bolted connections to the loop control of depth of cut and the matrix arm of instruction (at SS 120, 170) are glued. Screw with a pulley, the drive chassis are tight and prescribed the query moment .. We therefore recommend against any potential activity associated with permitting and tightening of joints, and contact information to an authorized service center or manufacturer.**

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**5.1. Maintenance of the Engine**

- see enclosed Engine Operation Manual

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**5.2. Tensioning of the Drive Belts**

check regularly tensioning of the drive belts that drive the cutting disc. Deflection of the belts under finger pressure should be about 2 cm. To tension the belts, proceed as follows:

- loosen 4 bolts which fasten the engine to the base plate

- turn the tensioning screw to tension the belts
- re-tighten the fastening bolts

When replacing the belts, use all belts of the same type and dimension.

**NOTE! Do not over-tension the belts!**

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**5.3. Inspection of Bolted Connections**

It is recommended to inspect the bolted connections daily before work.

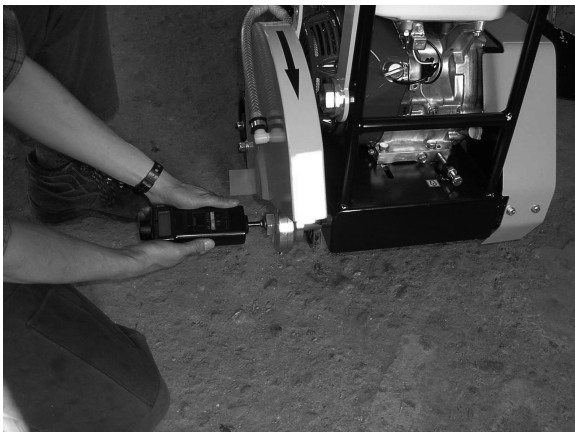
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**5.4. Adjustment of Engine Speed**

In case of engine replacement or repair it is necessary to adjust engine speed.

Speed is measured by a digital tachometer.

**Therefore, the speed setting is recommended to entrust a qualified serviceman.**



### 5.5. Assembly of pulleys

Asphalt cutters RZ 111, RZ 121 and RZ 171 (since 2003) are fitted with belt pulleys with split taper bushes. These pulleys do not have secured axial position and therefore it is necessary to pay care to proper assembly.

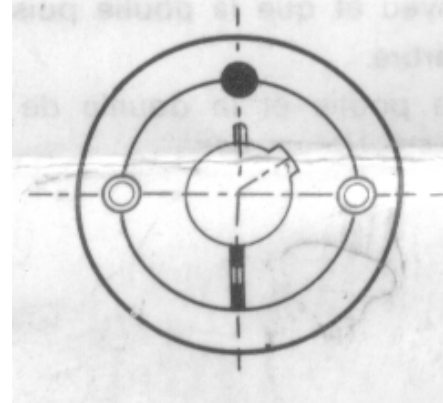
#### Assembly procedure:

- fit the pulley with the bush on the spindle shaft
- locate the pulley as far as possible towards the shoulder
- fasten the bush (see below)
- fit the pulley with the bush on the engine shaft
- use a liner to line-up the pulleys
- fasten the bush (see below)

#### Fastening of the bush:

- clean and de-grease the inner bore and taper surface of the bush and the tapered bore of the pulley
- insert the bush into the pulley and line up the holes (half-thread holes must line up with half straight holes)

- lightly oil the grub screws and screw them in, do not tighten yet
- clean and de-grease the shaft, fit pulley with taper bush on the shaft and locate in desired position
- using a hexagon socket wrench tighten the grub screws in accordance with the torques as listed below
- it is possible to knock the bush into the pulley with wooden block and a hammer



#### Types of bushes and torques:

Machine model	Engine shaft	Torque	Spindle shaft	Torque
RZ 111	bush 1210	20 Nm	bush 1210	20 Nm
RZ 121	bush 1610	20 Nm	bush 1610	20 Nm
RZ 171	bush 1108	5,6 Nm *	bush 1610	20 Nm

\* For RZ 171 engine shaft, use the key supplied with the engine.



## 6. 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		DAILY		
	Exchange				
Air filter	Inspection			(1)	
	Cleaning				
Spark plug (gasoline engines)	Inspection - cleaning				
Filter bowl	Cleaning				
Fuel hose	Inspection - Exchange	Every two years			
Valve clearance	Inspection - adjustment	Every 12 months or 250 hrs. (2)			
Fuel tank and sieve	Cleaning	Every 12 months or 300 hrs. (2)			
Drive belt	Tensioning				

- 1. To be carried more often when operating in dusty environment!!!**
- 2. Such maintenance should be performed by service technicians NTC, respectively. authorized service according to engine type, especially if the user does not have the proper tools and knowledge about these devices.**