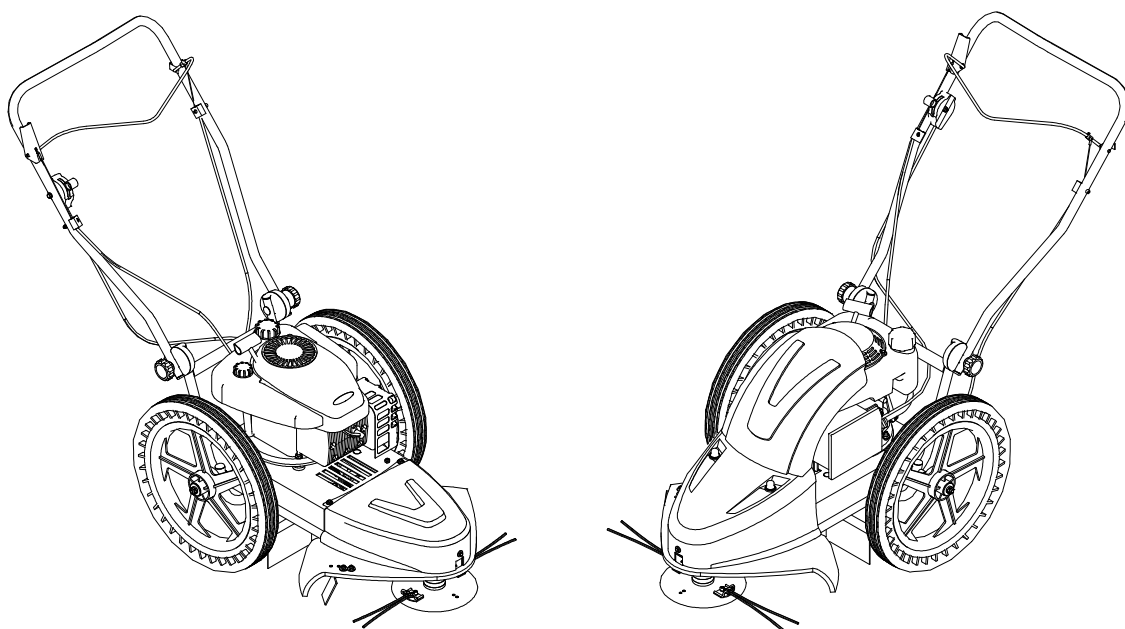


VARI®

String mower

TRIMMER 50 TRIMMER 60



Instructions for use

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1 Basic information

⚠ **Ask your dealer to provide unpackaging of the machine and briefing.**

Fill in the following table with data on your machine. The data are important for ordering spare parts.

It is advisable to have a copy of this page with all data on the machine purchase for the case of loss or theft of the original record.

Type	TRIMMER-50	TRIMMER-60
Engine type	TECUMSEH CENTURA 55 LX T	HONDA GCV-160
Machine serial number		
Engine serial number		
Date of delivery (sale)		
Supplier		
Address		
Telephone/Fax		

Notes:

The product's design meets requirements of the **Act No. 22/1997 Gaz.** and complies with all relating legislation, decrees, regulations, directives and norms.

Manufacturer **reserves the right** of technical modifications and machine innovations which do not impact .

2 Introduction

Dear customer,

Thank you for trust that you have shown by purchasing our product. You have become owner of one machine from a wide range of machines and attachments made by VARI, a.s. as a system of gardening, farming, small agricultural and communal technology.

Please read the Instructions for use carefully. If you follow them properly, you will get our products performing a reliable work for years.

2.1 Warning

User **is obliged** to get acquainted with the Instructions for use and to follow all instructions for machine operation so that the user's and other persons' health and property do not suffer any harm.

Safety instructions contained in this manual do not describe all situations or conditions possibly occurring in practical use. Safety factors such as common sense, diligence and scrupulousness are not included; it is assumed, however, that all persons authorized for machine operation or maintenance do possess the intelligence.

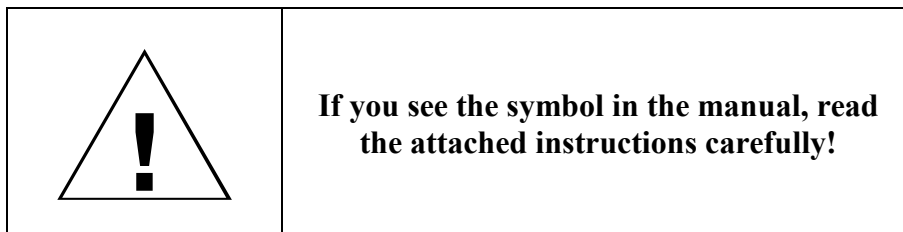
The machine can be operated only by persons in good mental and physical condition. For the professional use of the machine the machine owner is obliged to ensure a work safety training and provide instructions on machine control for operators and to keep records on these trainings and briefings.

Should some instructions in the manual be intelligible, you are encouraged to **contact your dealer** or directly the manufacturer of the machine. The contact address and telephone/fax connection are to be found at the end of the manual.

Instructions for use supplied with the machine are an integral part of the machine. They have to be available at any time, placed at an accessible place with no risk of their damage. In the case that the machine is sold to another person, the Instructions for use must be given to the new machine owner. If the above conditions are not met, the manufacturer bears no responsibility for incurred risks, accidents and injuries resulting from the machine operation.

The manufacturer bears no responsibility for damages caused by unauthorized and incorrect use of the machine and for damages caused by any machine modifications not authorized by the manufacturer.

To prevent injuries of operators and other people occurring in the vicinity of the machine, it is absolutely crucial to follow safety regulations marked in the Instructions for use with the following warning safety symbol:



3 Operation safety

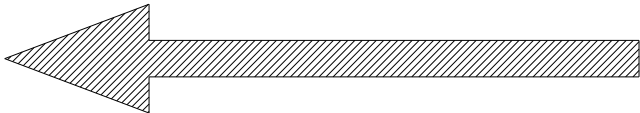
3.1 Safety regulations

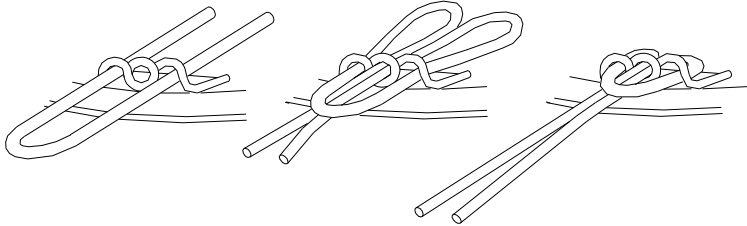


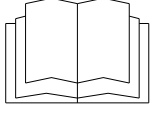
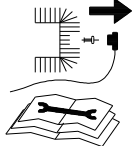
- ⚠ This international symbol indicates important messages concerning safety. When you see the symbol, be aware of a possible injury to yourself or to other persons and read attached instructions carefully.
- ⚠ The machine operator must be over **18 years of age**. **He (she) is obliged** to get familiar with the instructions for use of the machine and is supposed to be informed of general principles of work safety.
- ⚠ Prior to carrying out any activities in the near vicinity of the machine, switch the engine off and wait until the string head stops moving! Before leaving the machine alone, switch off the engine!
- ⚠ Don't stop the running out string head by pushing it to the ground (e.g. lifting the rear machine part by pulling on the handlebars).
- ⚠ When the string head runs out, hold the handlebars firm so that the machine could not move to the side due to the friction of support disk on the surface!
- ⚠ Never let the engine running at maximum speed or idling for a long time with the string head drive clutch and travel wheel drive clutch being switched off! Components of the machine drive (V-belt, belt pulley, clutch pulley, etc.) might be damaged!
- ⚠ **Prior to each employment of the machine**, check its parts (working mechanism or its casing in particular) for possible damage or loosening. Possible **defects** must be **rectified immediately**. Repairs are to be made only with the original spare parts.
- ⚠ Before using the machine, the stand must be cleared of solid bodies such as stones, wires, loose construction debris, etc., which could be flinging up or which might damage the machine. If these cannot be removed, don't work the places to prevent impacts on the working tool and its premature wear or destruction.
- ⚠ The machine is equipped with a rotating working tool. Maximum circumferential speed is **136 m.sec⁻¹**. Therefore, see to it that other persons move at a safe distance from the machine when it is in operation with regard to a possibility of working tool segments (string), mown grass or small solid objects occurring in the stand (stones, tree and shrub residues) flying to sides!
- ⚠ When the machine is in operation, all other persons (children in particular) and animals have to be outside the machine's working space. The machine operator can continue working only after they have been shown out to a **safe** distance.
- ⚠ Machine operators should wear tight-fitting garments, sturdy shoes and working gloves!

- ⚠ Protect your eyes and face by using approved working aids! Regarding the fact that the permitted noise levels are to be exceeded (see table of expositions at the end of the chapter), it is necessary to use ear protectors to CSN EN 352-1. To protect eyes and face use means of personal protection to CSN EN 1731. Ask your dealer to provide the aids.
- ⚠ Observe a safe distance given by the handrail grip.
- ⚠ Don't start the engine in enclosed spaces! Be very careful when handling the machine since the exhaust silencer remains hot after the engine has been switched off; make sure there are no leakages and spills on engine parts when refuelling. If they happen to occur, dry out the stained parts or wait until the petrol evaporates.
- ⚠ Removal of any protective equipment and machine casings is forbidden.
- ⚠ Safe slope accessibility of the machine is 10°. Maximum inclination of engine at work is 20° for a longer time and 30° for a shorter time (up to 1 minute).
- ⚠ All kinds of machine repair, adjustment, lubrication and cleaning are to be made with the machine switched off and the spark plug cable disconnected.

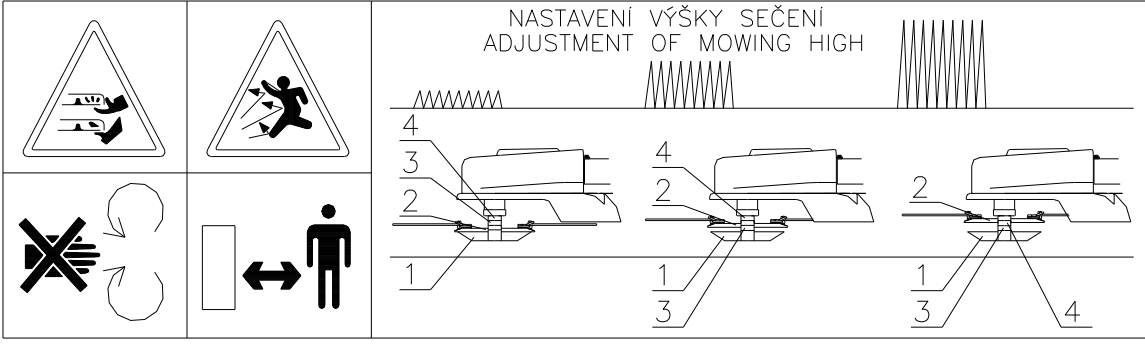
3.2 Safety pictographs

The user is obliged to keep pictographs on the machine legible and to provide for their replacement in the case of their damage. There are following labels with safety pictographs on the machine:

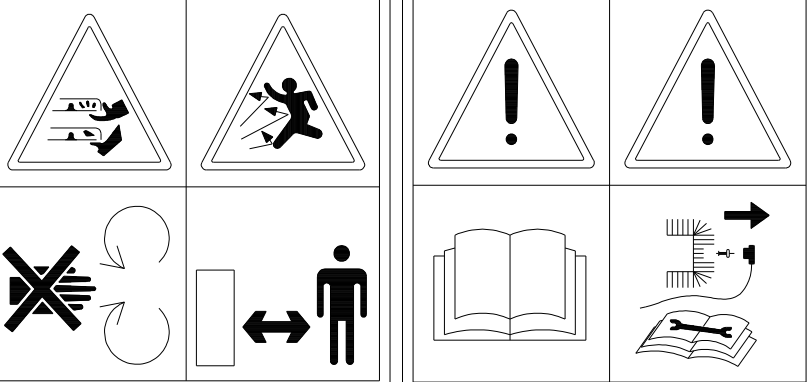
Direction of working tool rotation		
Location : Front part of machine casing		

Fitting on the string		
<p>NASAZENI STRUNY APPLICATION OF STRING</p> 		
		
		
Location : Left side of the machine frame	1	2
<p>1-Instructions for use to be thoroughly studied prior to machine use. 2-During the machine maintenance, the conductor should be disconnected from the spark plug</p>		


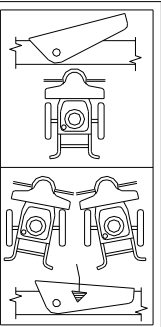
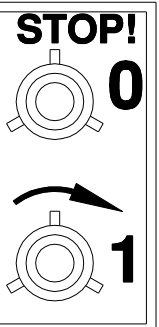
String head assembly options

		
1	2	Location : Right side of the machine frame
<p>1- Putting one's hands or feet into the working tool space is prohibited-danger of limb injury.</p> <p>2- Keep a safe distance from the machine –danger of injury by flying material fragments.</p>		

Self-sticker for signalling danger and warning

				Location : Rear part of the machine
1	2	3	4	
<p>1- Putting one's hands or feet into the working tool space is prohibited-danger of limb injury.</p> <p>2- Keep a safe distance from the machine –danger of injury flying material fragments.</p> <p>3- Instructions for use to be thoroughly studied prior to machine use.</p> <p>4- During the machine maintenance, the conductor should be disconnected from the sparkplug</p>				

Self-stickers for signalling health protection and controls

			1-Protection of eyes and hearing.
			Location : Left rear part of the plate for engine.
			2-Positions of lever for turning the axle to sides.
			Location : Right part of the grip near the lever for axle arrestment.
1	2	3	3-Switching of the working tool clutch.
			Location : Left part of the grip near the operating horizontal bar.

3.3 Maximum values of noise and vibrations.

Maximum values of noise and vibrations as measured by AO-206 SZZPLS Praha				
Test report	No. 15 141 of 12 October 1999		No. 15 145 of 27 October 1999	
	No. 15 142 of 13 October 1999		No. 15 146 of 2 November 1999	
Product	TRIMMER 50		TRIMMER 60	
Acoustic output of the machine	L_{WA} [dB]	108.5	L_{WA} [dB]	112
Acoustic pressure level	$L_{pAeq,T}$ [dB]	93.5	$L_{pAeq,T}$ [dB]	97.0
Weighted effective value of transmissions transmitted onto operator's hands (vector sum of rectilinear vibrations on ind. axes-Testing method to CSN EN 1033)	a [m.sec ⁻²]	6.3	a [m.sec ⁻²]	8.1
Acoustic output of the machine	L_{WA} [dB]	108.5	L_{WA} [dB]	112
Min. exposition break	x [min]	10	x [min]	10
Max. operator's exposition per shift	y [min]	90	y [min]	60

Exception issued by the Main hygienist of the Czech Republic for the machine use.
(Valid only for the territory of the Czech Republic)

Regarding the fact that the maximum permitted values of noise and vibrations at the operator's working place are exceeded, the product cannot be in a long-term use.

- 1) Work with the machine must be regularly interrupted with breaks of at least "x" minutes (see values in the table) and the total time of this work must not exceed "y" minutes (see values in the table) per worker and shift. Work procedures must be modified so that the breaks leading to the interruption of exposition are logical.
- 2) At the time of these breaks which are required for health protection reasons, the operator must not be exposed to accessive noise and vibrations.
- 3) In the case of professional work (or in the case that the maximum exposition time is exceeded), a proposal must be submitted to the appropriate competent authority for classification of this work as hazardous in terms of noise and vibrations.

4 Use, technical specification and technical description of the machine

4.1 Use of the machine

The string mower is designed for cutting grass stands which cannot be mown by another type of cutting machine due to a risk of machine damage by solid objects occurring in the stand, or for final trimming of grass surfaces where other machines cannot be used. The string head can be replaced with a saw blade or with other types of cutting saw disks used in attached brush cutters. Another recommended attachment is a guide wheel.

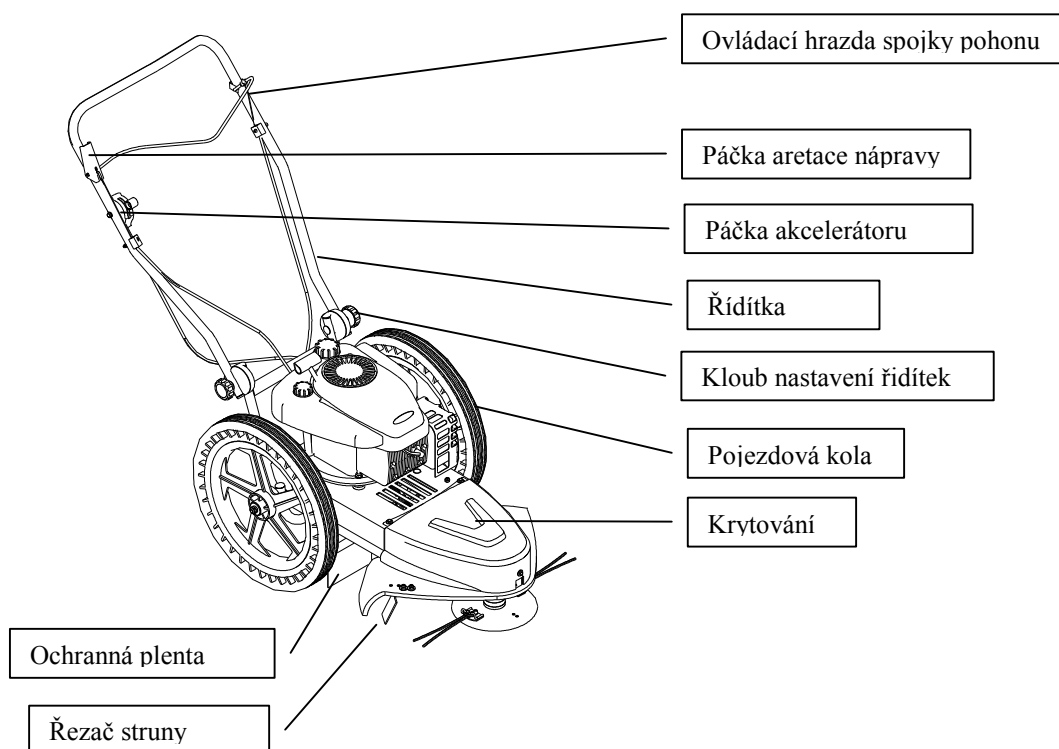
⚠ **Engagement width has to be always accommodated to the density of the mown stand !**

4.2 Technical specifications

Technical specification of the machine	TRIMMER 50		TRIMMER 60	
Length	mm	1251	mm	1251
Width	mm	572	mm	612
Height	mm	1032	mm	1032
Weight	kg	35	kg	36.5
Max. engagement width	cm	50	cm	58
Working tool rotations	min ⁻¹	4337	min ⁻¹	3855
Max. circumferential speed (of string)	m.sec ⁻¹	136	m.sec ⁻¹	121
String material	-	plastic	-	plastic
Advised string diameter	mm	4.0	mm	4.0
Possible string cross-section shapes	-		-	
Max. diameter of saw blade	inch/mm	12/305	inch/m m	12/305
Max. diameter of mowing disk	cm	35	cm	35
Diameter of central hole in the disk	mm	25.4	mm	25.4
Thickness of blades	mm	2.5 – 4	mm	2.5 – 4
Travel wheel tyre	type	solid rubber	type	solid rubber
Engine	TECUMSEH CENTURA 55LX T		HONDA GCV 160	
Cylinder volume	cm ³	195	cm ³	160
Max. output at RPM	kW/min ⁻¹	4/3600	kW/min ⁻¹	4.1/3600
Max torque at RPM	N.m/min ⁻¹	8.4/2500	N.m/min ⁻¹	11.4/2500
Max. adjusted engine speed	min ⁻¹	3600	min ⁻¹	3200
Tank volume	litres	1.4	litres	1.1
Petrol (leadless)	oct.no.	91-95	oct.no.	91-95
Oil filling	litres	0.6	litres	0.55
Oil	SAE	30 15W-40	SAE	15W-40
Spark plug	CHAMPION N BRISK	RJ17LM JR17	NKG BRISK	BPR6ES LR15YC

4.3 Technical description of the machine

The base of the machine is a rigid frame on which a combustion engine is placed. The machine is equipped with covers against flying cut material. A screen of plastic canvas placed between the wheels prevents flying chips. Tubular handlebars have an ergonomic shape and their height is adjustable. They are equipped with a control horizontal bar of string head drive clutch, lever for axle tilt arrestment and accelerator lever. The string head is driven through a V-belt. The drive is switched on by the tension pulley via the control horizontal bar. Working tool is a string head with two strings, whose design makes it possible to adjust the cutting height by realigning distance rings. The strings are fastened by passing them through the string holder and tightening. Other working attachments that can be used in place of the string head are saw blade and mowing disks (with 3-4 teeth), which are to be installed on the machine through the friction overrunning clutch onto the steel hub. The mower axle can be tipped to sides (left, right) which facilitates final trimming near fences and walls. Arrestment of side d which a gear-box is tipping is controlled by a lever located on the handlebars. The wheels have plastic felloes with heavy-duty solid rubber tyres.



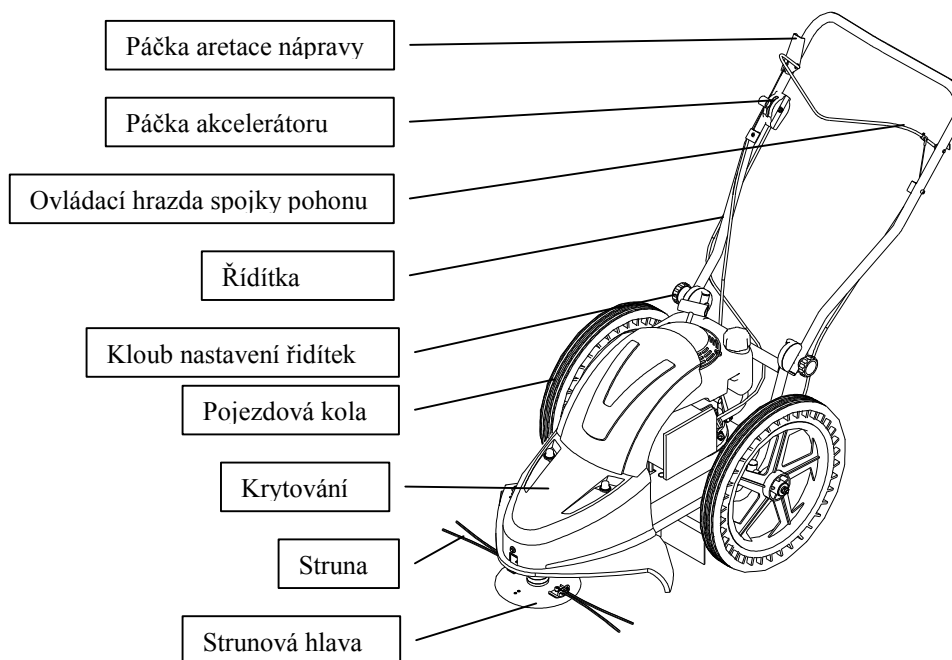


Figure 1

5 Instructions for use

5.1 Machine assembly

Ask your dealer to provide unpackaging of the machine and briefing.

Grip points:

- Front: - Front edge of the lower casing;
- Rear: - Handlebar grips or machine frame cross-bar when the handlebars are folded.

If you assemble the machine yourself, follow the below instructions:

- Take the machine out from the box.
- Loosen the plastic rosebits of handlebars joints and turn the handlebars so that the handrails point to the rear of the machine. Adjust the height of the handrail grip so that it can be easily reached. tighten the rosebits.
- Fasten the Bowdens to handlebars by means of plastic tightening tapes.
- Make the engine ready for operation according to the manual for its use.

⚠ The machine is delivered without operational engine fillings!

5.2 Putting into operation

Read the instruction for engine use thoroughly! You can prevent a possible damage to the engine.

- Fill the engine with the prescribed types and volumes of oil and petrol.

2. Instructions for making the motor ready for starting and instructions for proper engine start see the operating manual for engine use.
3. Let the new or cold engine running for about 1 min with the accelerator lever in the **MAX** position.

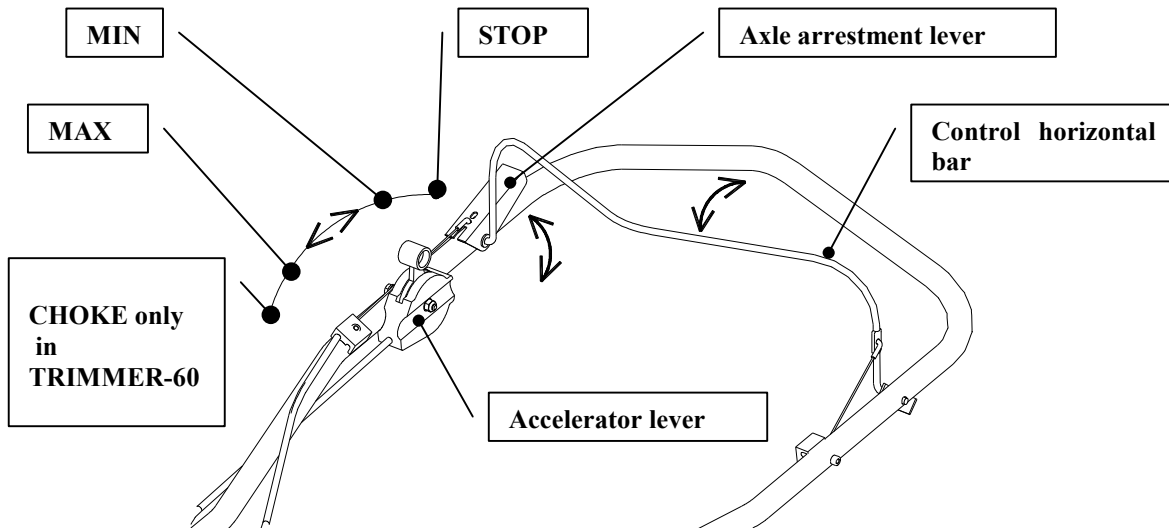


Figure 2

5.3 Starting the mowing tool

1. Start the engine (if it is cold, let it running for about 1 min to warm up). At doing this, follow the instructions presented in the operating manual for engine use.
2. Set-up maximum engine rotations by means of accelerator lever.
3. Grasp the handlebars with your left hand and pull the control horizontal bar to the handlebars with your right hand until the string head starts turning. Hold the horizontal bar near the grip at working.

The start of the string head can be accompanied with rattle or whistle due to a partial slippage of the V-belt during the switching. The phenomenon usually disappears after the belt has run in.

⚠ The aerodynamic noise (whizz) resulting from a high circumferential speed of the string is characteristic of the string mowers. The phenomenon cannot be rectified and does not signal any defect or failure!

Note: In a new or cold engine, engine stalling may occur at the several first string head drive starts. The phenomenon disappears after the engine has warmed up.

5.4 Machine travel

The machine is not equipped with the travel and it must be therefore pushed into the engagement.

5.5 Machine stop

- The string head drive will switch off when the horizontal bar on the handlebars is released.
 - The engine will switch off when the lever is moved into the **STOP** position.
- ⚠ **Prior to performing any activities in the near vicinity of the machine, switch off the engine and wait until the string head stops! Always switch the engine off before leaving the machine.**
- ⚠ **Don't stop the running out string head by pressing it against the ground (e.g. lifting the rear machine part by pulling on the handlebars).**
- ⚠ **When the string head runs out, hold the handlebars firm so that the machine could not move to the side due to the friction of support disk on the surface!**
- ⚠ **Never let the engine running at maximum speed or idling with the string head drive gear clutch switched off for a long time! Machine drive components (V-belt, belt pulley, clutch pulley, etc.) might get damaged!**
- ⚠ **In the case of any critical situation, release your hold on the handlebars immediately. The horizontal bar will return to its zero position, the string head will come to a stop (while the engine is still running at adjusted rotations; this is why it is to be switched off by pushing the accelerator lever into the STOP position as soon as possible!)**

5.6 Working with the machine

5.6.1 Mowing grass stands

- ⚠ **Prior to the machine use, the stand must be cleared of solid bodies such as stones, wires, loose construction debris, etc., which could be flung or might otherwise damage the machine. Should these be impossible to remove, pass the places by in order to prevent impacts on the working tool and its premature wear or destruction.**
- ⚠ **Mowing engagement width has to be at all times accommodated to the stand density!**

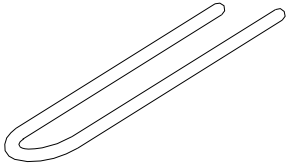
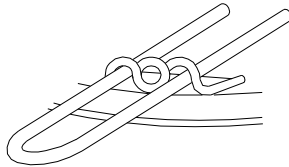
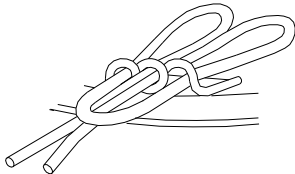
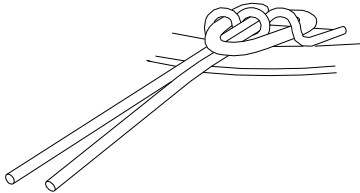
Adjust the engine speed at maximum, let the string head run on maximum rotations and then drive the machine against the stand to be cut. The mown stand will be thrown onto the right side of the machine (as viewed by the operator). Should the stand be low and not too dense or lodged, you can proceed by pushing the machine continually and slowly forward.

In the case that the grass stand is high, dense or lodged, the styl of work will be different. Drive the machine into the stand, stop it, and cut the stand out by moving the machine from side to side in oscillations of about 60° (as if mowing with a scythe).

Caution! When cutting, the string head should be at all times slightly above the ground (2-5 cm). If this rule is not observed, the machine will be forced to sides due to the contact of the rotating string head with the ground. The phenomenon can be rectified by

adding a guide wheel. Leading the string head low above the ground provides for a good balance of the machine.

5.6.2 String installation procedure

<p>1) Cut a string length of max. 45 cm (TRIMMER 50) or 50 cm (TRIMMER 60) from the coil and freely bend the string to have two half-lengths.</p>  <p>Figure 3</p>	<p>2) Pass the string ends through the outer eyes of the holder</p>  <p>Figure 4</p>
<p>3) Pass the loose ends through the middle eye of the holder and below the loop.</p>  <p>Figure 5</p>	<p>4) Tighten firm by pulling out.</p>  <p>Figure 6</p>

⚠ After having installed a new string, always make sure that the string does not overlap the cutter by more than 1 cm. If so, cut it by scissors or by knife. The string will shorten to its precise length after the string head has started rotating.

⚠ Use only the string size and type recommended by the manufacturer of the machine.

⚠ Always replace both the strings. Poor balance of the string head may result in a machine damage.

Caution! When mowing in the stand with a lot of solid objects, near walls, fences or curb stones, a string breakage occurs more frequently, resulting in the reduction of machine engagement width or in the complete string loss. It is advised that the operator has a sufficient amount of spare strings on him.

⚠ When working with the TRIMMER-50 machine, don't increase the machine engagement width above 50 cm. The engine may be damaged due to overloading.

- ⚠ When working with the TRIMMER-60 machine, don't increase the machine engagement width above 58 cm. Danger of damage to the string head protective casing.

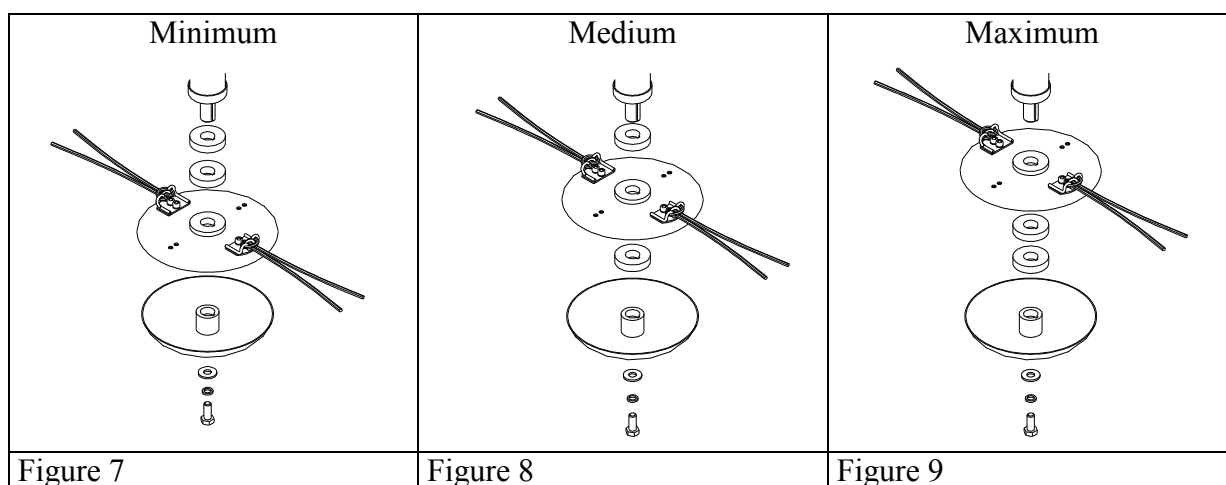
5.6.3 Adjusting the mowing height

- ⚠ The adjustment is to be made with the engine switched off and the spark plug cable disconnected.

The machine is equipped with a string head which enables adjustment of 3 mowing heights. The mowing height adjusted by the manufacturer is the lowest one.

Mowing height adjustment procedure:

1. Put the machine onto a firm base so that you have a good access to it. Secure the machine against spontaneous movement.
2. Loosen and unscrew the bolt with fillers (barrel spanner No. 16 supplied with the machine) fastening the string head assembly to the shaft.
3. Dismount the lower support disk, disk with strings and distance rings.
4. Reassemble the string head to the required mowing height according to figures 7, 8 and 9.
5. Screw the bolt back and tighten it properly (tightening moment is 15 N.m)



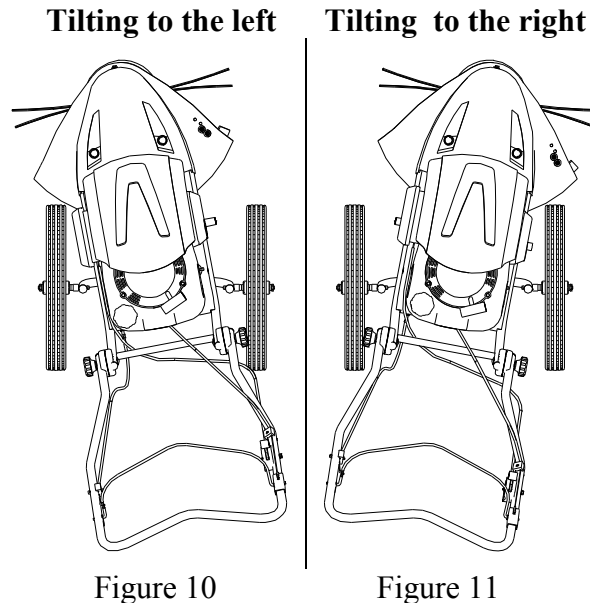
5.6.4 Tilting of the machine

Machine tilting to sides (out of machine axis) is used for final trimming near curb stones, fences or walls (edges in general), i.e. at places impossible to reach with a common grass mower.

Tilting is to be made as follows:

1. Press the axle arrestment lever (see Fig. 1) down with the thumb of your right hand until the arrestment pin is released.
2. Tilt the machine mildly backwards and turn it by means of handlebars to the desired side (left or right). The machine axis is a turning point at this moment.

3. Release the axle arrestment lever and in the case that the arrestment pin does not fall in, swing the machine slightly until the pin falls in. Return the machine into its working position.



5.6.5 Problems at cutting

- If the engine is markedly losing speed (engine is choking), the engagement width and the travel speed should be accommodated to the density and height of the grass stand.
- If the mown stand width does not correspond to the nominal engagement, check the strings for intactness or replace them with new ones.
- If the string head rotations do not reach nominal values without load (engine is choking), remove the grass wound up onto the string head hub. If the engine is still choking, check its condition and make sure that the string head can freely turn.

5.7 Advised accessories

A **Guide wheel (Order.No. 3878)** is advised to improve the leading of the string head above the terrain. A set of **Disk holder (Order.No. 3881)** is recommended for greater applicability of the machine to join the mowing disks or saw blades. The specification of disks see chapter **Technical specifications**.

5.7.1 Guide wheel

The guide wheel serves for a better guidance of the machine at cutting flat surfaces with low stand heights and without hidden solid objects. It is to be inserted into the holder in the front part of the machine and secured with the bolt.

5.7.2 Mowing disks and saw blades

5.7.2.1 Assembling the disks

- ⚠ **Be careful when exchanging the working tools. The cutting edges are sharp. Protect your hands with the working gloves.**
 - ⚠ **The exchange should always be made with the engine switched off and the spark plug cable disconnected.**
1. Loosen and unscrew the bolt holding the string head and dismount the string head including the distance rings.
 2. Insert the steel hub, friction washer, mowing disk or saw blade and fillers according to Figure 12.
 3. Tighten the bolt with the barrel spanner No. 16. Tightening moment is 15 N.m.

When loosening and tightening the bolt, put on the round iron (ZNAČKA!) 6 mm or the imbus wrench No. 6 through the holder on the hub and tube on the machine frame so that the disk does not turn over.

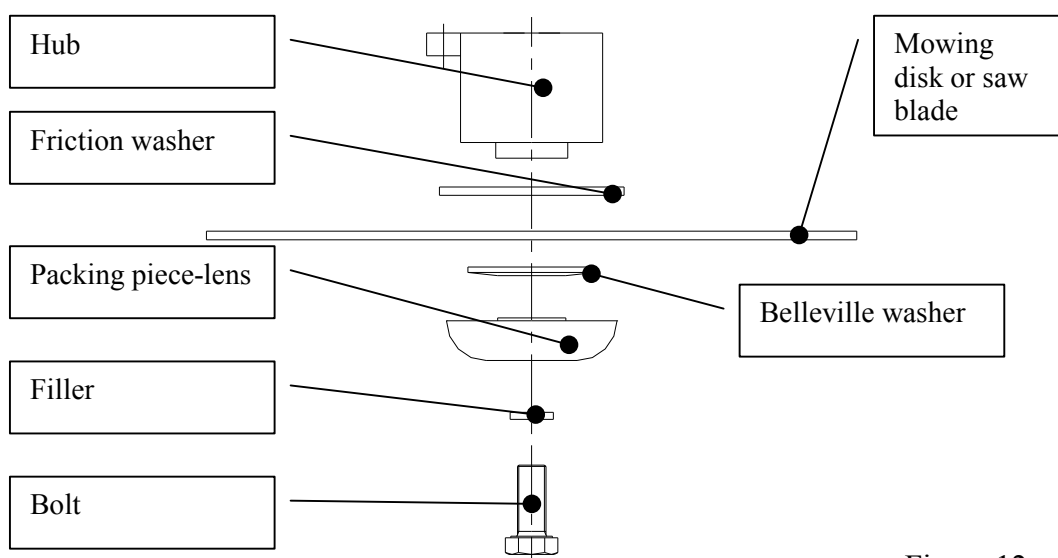


Figure 12

5.7.2.2 Working with the saw blade

The saw blade is meant for undercutting the self-seeded trees and shrubs up to a diameter of max. 5 cm.

- Set-up maximum speed and switch on the working tool drive see chapter **Starting the mowing tool**.
- Drive the saw blade slowly into the stem and cut the tree off while pushing on the machine and balancing the saw blade side reaction. (Fig. 13)

- ⚠ **Protect your eyes and face by using approved working aids! It is necessary to use ear protectors to CSN EN 352-1. To protect eyes and face use the means of personal protection to CSN EN 1731.**

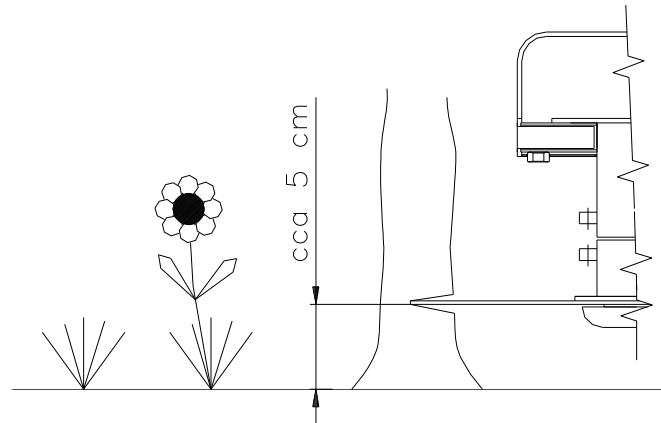


Figure 13

⚠ Be careful at cutting out the trees and shrubs since they can fall onto the machine operator.

⚠ If the blade gets “seized“, release your hold on the clutch control horizontal bar without a delay and pull the machine out from the engagement. Switch the engine off and check fastening of the blade and its intactness.

It is not advised to use the saw blade and the guide wheel at the same time.

5.7.2.3 Working with the mowing disk

The style of work is different from the cutting with the string head. Drive the machine into the grass stand, stop it and mow the stand by swinging the machine from side to side at about 60° (as if cutting with a scythe).

6 Maintenance, care and storage

To ensure a long-term satisfaction with our product, it must be given proper care and maintenance. Regular maintenance of the machine will prevent its early wear ensuring at the same time a correct functioning of all its parts.

Follow all instructions for intervals of machine maintenance and adjustment. It is advised that you keep records on the number of machine working hours and on the conditions in which the machine was working (for service purposes). Similarly as the current maintenance, the after-season maintenance should be entrusted to one of our authorized service workshops.

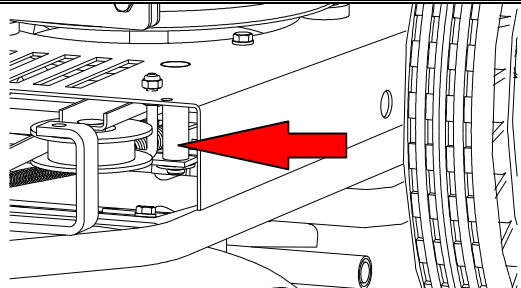
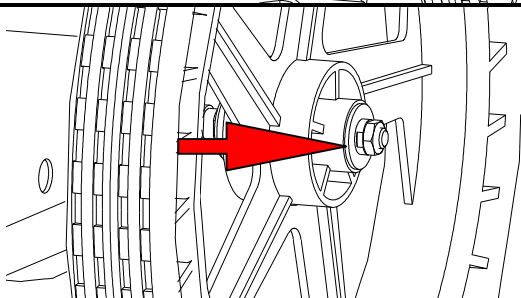
6.1 Lubrication

6.1.1 Engine oil replacement

⚠ When replacing oils, follow the basic hygienic principles, regulations and laws on environment protection.

The information on the oil replacement can be found in the operating manual for engine use. To drain oil either tilt the machine onto the side with the pour-in neck with oil gauge or dismount the engine from the machine.

6.1.2 Lubrication points

Machine lubrication	during the season	After the season	here
Tightening pulley arm pin (after disassembly of upper casing)	min 2x	Yes	
Bearings of travel wheels	as required	Yes	
String head drive gear clutch litz wire	min 2x	Yes	-

6.1.3 Lubrication and assembly of wheels

- Underlay the machine so that the wheels can freely turn. The machine must be secured against spontaneous movement.
- Dismount the nut and the outer cone by using the spanner No. 15. Remove the wheel from the axis.
- Press the bearings out of the hub in the plastic rim. Wash them from dirt and old grease.
- Fill the bearings inside with a new grease (e.g. for water pumps) and press them back into the hub in the plastic rim of the wheel. Grease the inner and outer cones as well.
- Put the wheel back and screw the outer cone. Screw the nut and tighten the cone against the nut so that the wheel can freely turn but does not show any greater side clearance.

6.1.4 Maintenance of tension pulley litz wire

In order to guarantee a low operating force on the operating horizontal bar controlling the drive of the string head, it is advisable to lubricate the litz wire in the Bowden at least 2x during the season with an oil available in atomiser (e.g. SILKAL, MD Spray, WD40).

6.2 Tightening of bolted connections

Check the tightening of bolted connections. Prior to each use of the machine, check the bolt fastening the string head to the shaft for tightness; check the tightness of bolts fastening the string holder to the string head.

6.3 Replacement of V-belt and adjustment of tension pulley

The V-belt should be replaced according to its wear (cracked sides, torn belt, sides worn out down to belt carrier fibres, belt pulled out of shape) or after about 100 hours of operation at the maximum. In this machine, the belt stretched to maximum is considered a belt in which the distance between the internal belt surfaces is lesser than 7 mm (Fig. 15 bottom) with the pressed horizontal bar of string head drive clutch.

The replacement procedure is as follows:

- a) Drain petrol from the engine tank. Dismount the accelerator lever (2x spanner No. 8) from the handlebars. **Bowden cable should never be dismantled from the control on the engine!**
- b) Unscrew three safety nuts (spanner No. 13) on the engine flange and pull the engine out from the machine frame upwards. Never use force to pull the engine from the frame!

⚠ Never put the engine on the side. Oil might get into the exhaust or into the air cleaner. The best engine seating is with the lower flange dwelling on two lintels which are at least 7 cm high.

- c) Dismount the upper casing (spanner No. 8, spanner No. 13). Dismount the bolt in front of the driven belt pulley (spanner No. 10). Take the old V-belt off and replace it with a new one. V-belt marking is GATES A52 BareBack.. It is also possible to use an equivalent V-belt made by other manufacturers at a size of A13x1320 Li (Li=internal belt length). However, the belt must be made without rubber on belt sides! Only this belt model will guarantee that the string head drive start will be continuous at engaging the clutch.

⚠ Should a different belt model be used, the machine manufacturer does not bear any liability for the correct and full functioning of the gear and for damage caused by the incorrect belt type!

- d) Put the engine back to its place, slide the belt into the groove in the belt pulley on the engine and check if the belt passes correctly around the guides. Screw the engine by using three safety nuts with flat washers. Screw the accelerator lever back onto the handlebars.
- e) Check the operation of the tightening pulley. With the horizontal bar on the handlebars being completely pressed down, the pulley must ensure a sufficient belt tension (spring on the litz wire being extended by about 10 mm as compared with the normal condition). Possible corrections are to be made by means of the adjustment bolt (see Fig.14). Use two spanners No. 10 or No. 9. With the lever switched off, the pulley must be leaning against the stop on the engine plate (Fig. 15 top) and the litz wire in the Bowden of the tension pulley can be slightly slack. In the case that the adjustment bolt is completely unscrewed and it is necessary to

tighten the V-belt, the spring on the cable can be hooked into the front hole on the tension pulley arm and to set-up the belt tension once again.

- f) Screw the bolt back in front of the driven belt pulley and mount back the upper casing.

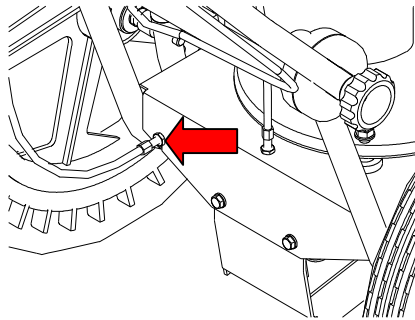


Figure 14

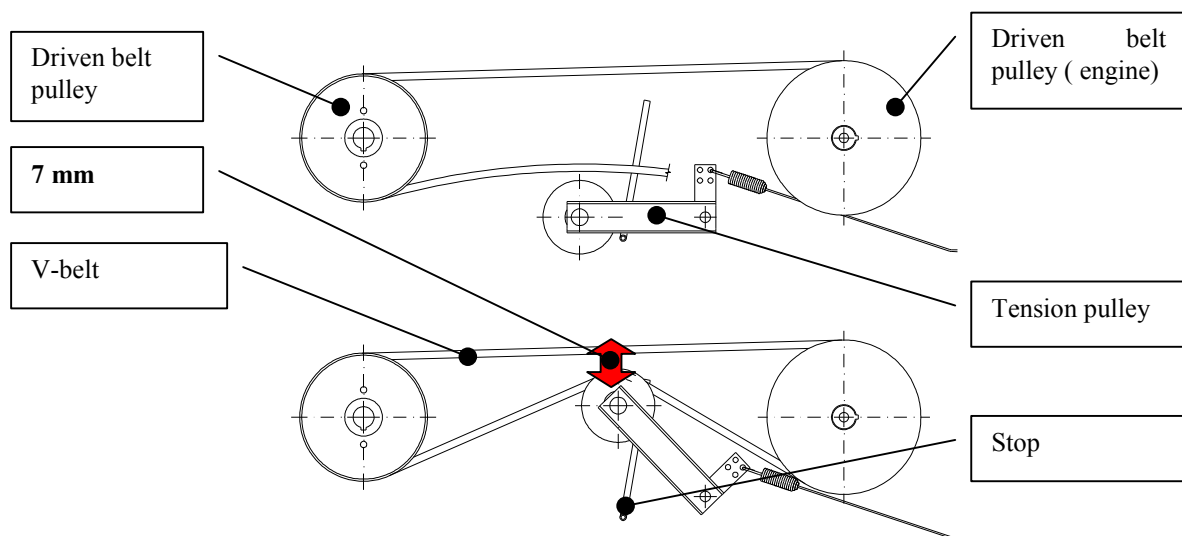


Figure 15

6.4 Diagnostics of driving problems

Problem	Cause	Remedial action
String head does not turn	Tightening pulley does not stress the belt sufficiently	Set-up tightening pulley by means of adjustment bolt (see Fig. 14)
	Litz wire fallen out from tightening pulley lever	Put the litz wire back
	V-belt fallen behind tightening pulley or down from belt pulley	Put the belt back
	V-belt torn	Replace the belt with a new one
	Excessive belt extension (see Fig. 15 bottom)	Replace the belt with a new one

6.5 Table of service operations

Operation	During the season	After the season
Engine oil check	prior to each use	**
Engine air filter check	prior to each use	check
String holder check	prior to each use ***	check
Check of intactness of upper and lower disk	prior to each use ***	check
Check of V-belt stress	as required	check
V-belt condition check	as required	check ****
Cleaning of wheel hubs and replacement of lubrication grease	-	yes
Cleaning of the machine from dirt and plant residues	always after the end of work	yes

** Oil replacement intervals see Operating manual for engine;

*** In the case of damage (even at cutting) – cracks, bending, breakage etc. – repair required immediately!

**** or replacement after about 100 hours.

6.6 Washing and cleaning of the machine

⚠ At cleaning and washing the machine, proceed to observe valid regulations and laws on the protection of water courses and other water resources against pollution or contamination with chemical substances.

⚠ Never wash the engine with a stream of water! Electric equipment might fail when starting the engine.

All dirt, debris and plant residues should be removed from the machine after the end of the season. Check the intactness of working tools (or replace them if necessary). The travel wheels should be dismounted from the axle once in a season, cleaned and the hub inside filled with a new filling of plastic lubricant.

⚠ The engine has to be switched off and the cable termination to spark plug disconnected!

6.7 Storage

Prior to a longer storage, clean the machine from all dirt, debris and plant residues. Repair the damaged places on painted machine parts. Prevent the access of unauthorized persons to the machine. Protect the machine from weather impacts but don't use the air-tight protection due to a possibly increased corrosion under it.

6.8 Liquidation of packaging and machine after service life expiration

After unpacking the machine, you are obliged to provide for the liquidation of packaging with using the secondary raw-materials according to Waste Law No.

185/2001 Gaz. (and its possible further amendments) and with respect to the decrees of local town or municipal authorities.

The following procedure is recommended for machine liquidation after the end of its service life:

- * Dismount all parts from the machine that still can be used.
- * Dismount the plastic machine parts and the parts of non-ferrous metals. The stripped machine remainder and the dismantled parts are to be liquidated according to Waste Law No. 185/2001 Gaz. (and its possible further amendments) and with respect to the decrees of local town or municipal authorities.

7 Instructions for ordering spare parts

The following data are to be used for easier identification when ordering the spare parts:

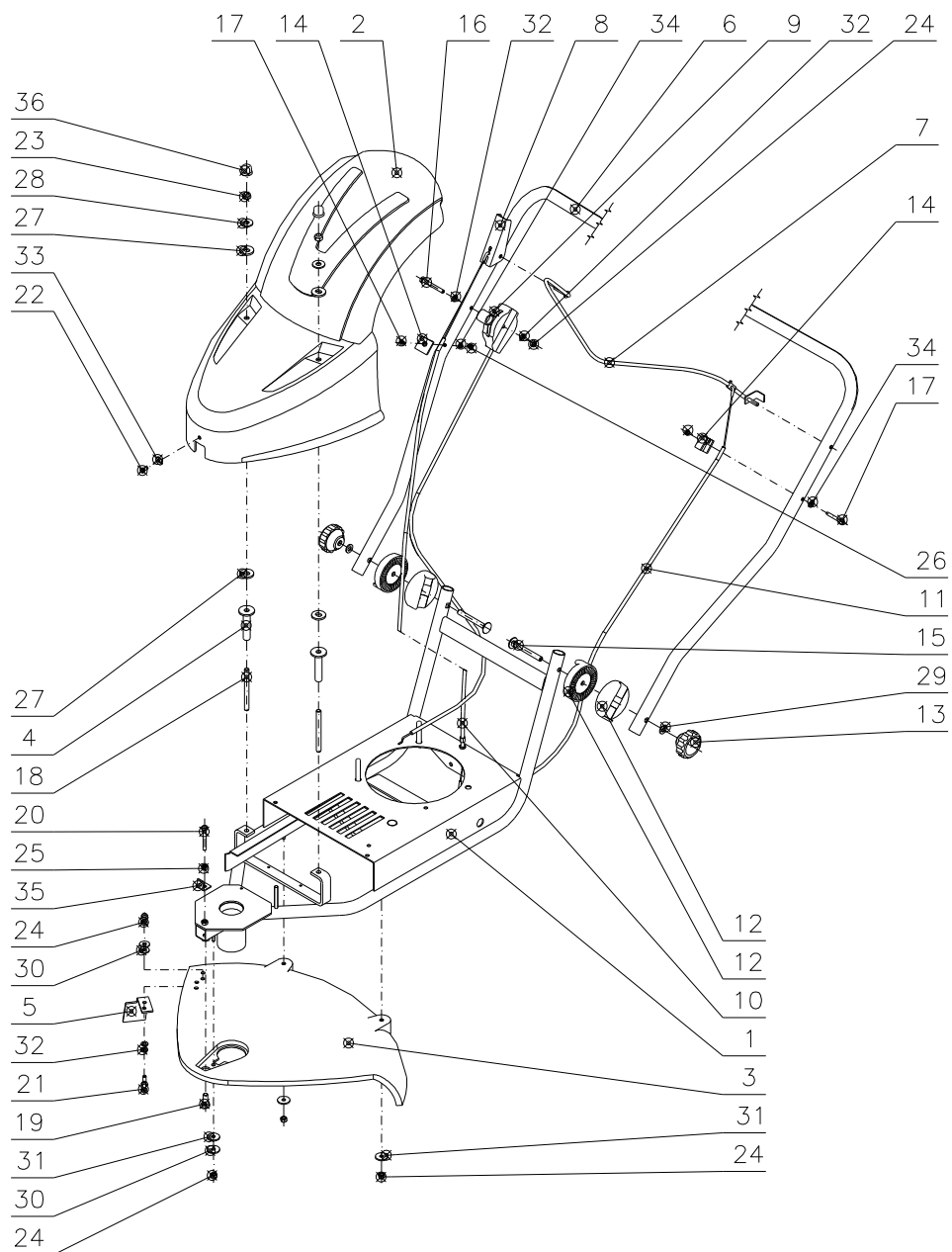
1. Machine type, engine type, machine serial number and year of manufacture;
2. Ordering number given by manufacturer and its name in the component list;
3. Number of ordered pieces separately for each item;
4. Precise address, telephone number, fax number or e-mail address;
5. If you are not certain about the correct identification of the component, send the damaged component either to the nearest service shop or to the manufacturer;

In the case of any confusions concerning the spare parts or technical issues, the VARI a.s. commercial, customer-service or technical departments are prepared to answer all your inquiries.

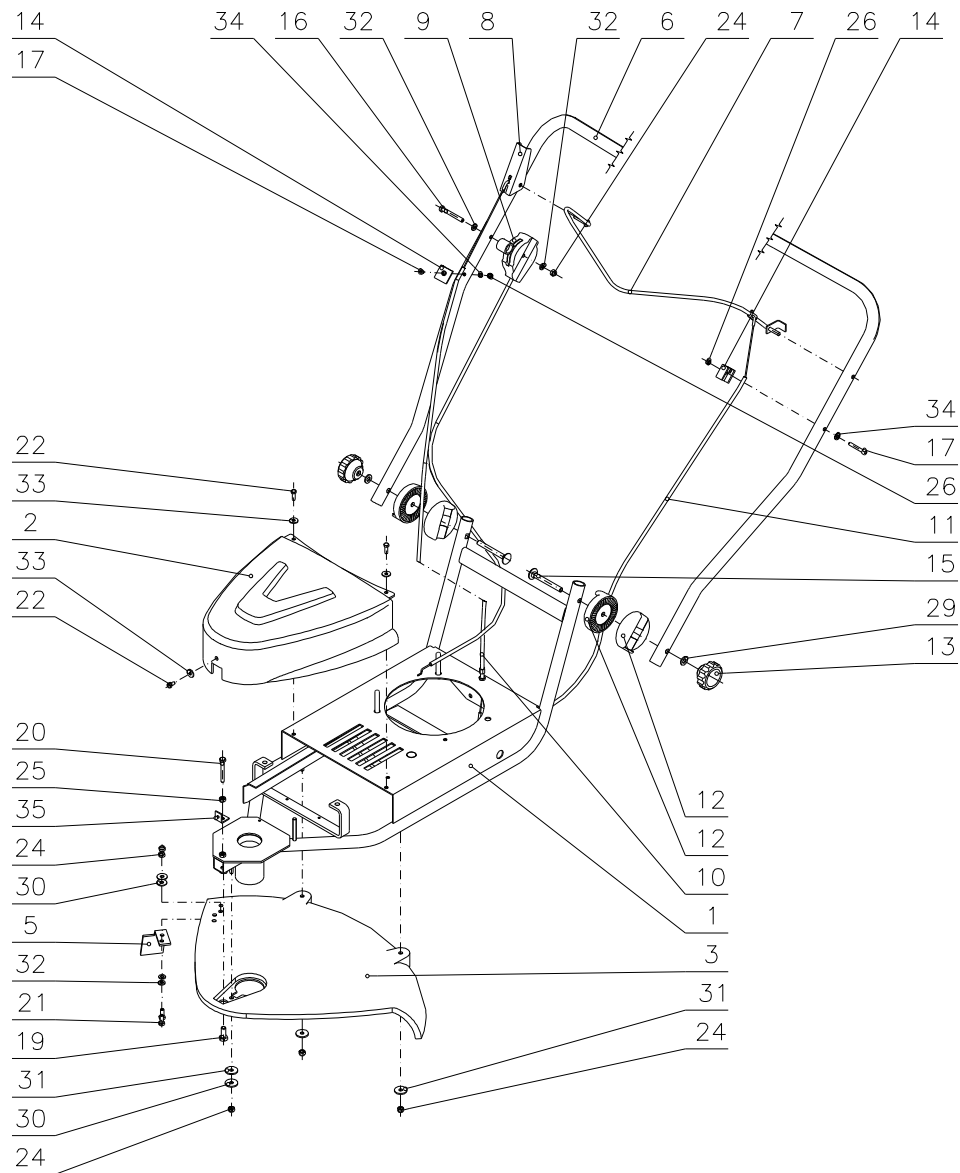
8 Contact to manufacturer

VARI, a.s.	Telephone:	+420 325 607 111
Opolanská 350	Fax:	+420 325 637 550
Libice nad Cidlinou		+420 325 607 264
CZECH REPUBLIC	E-mail:	vari@vari.cz
289 07	internet:	www.vari.cz

9 List of components

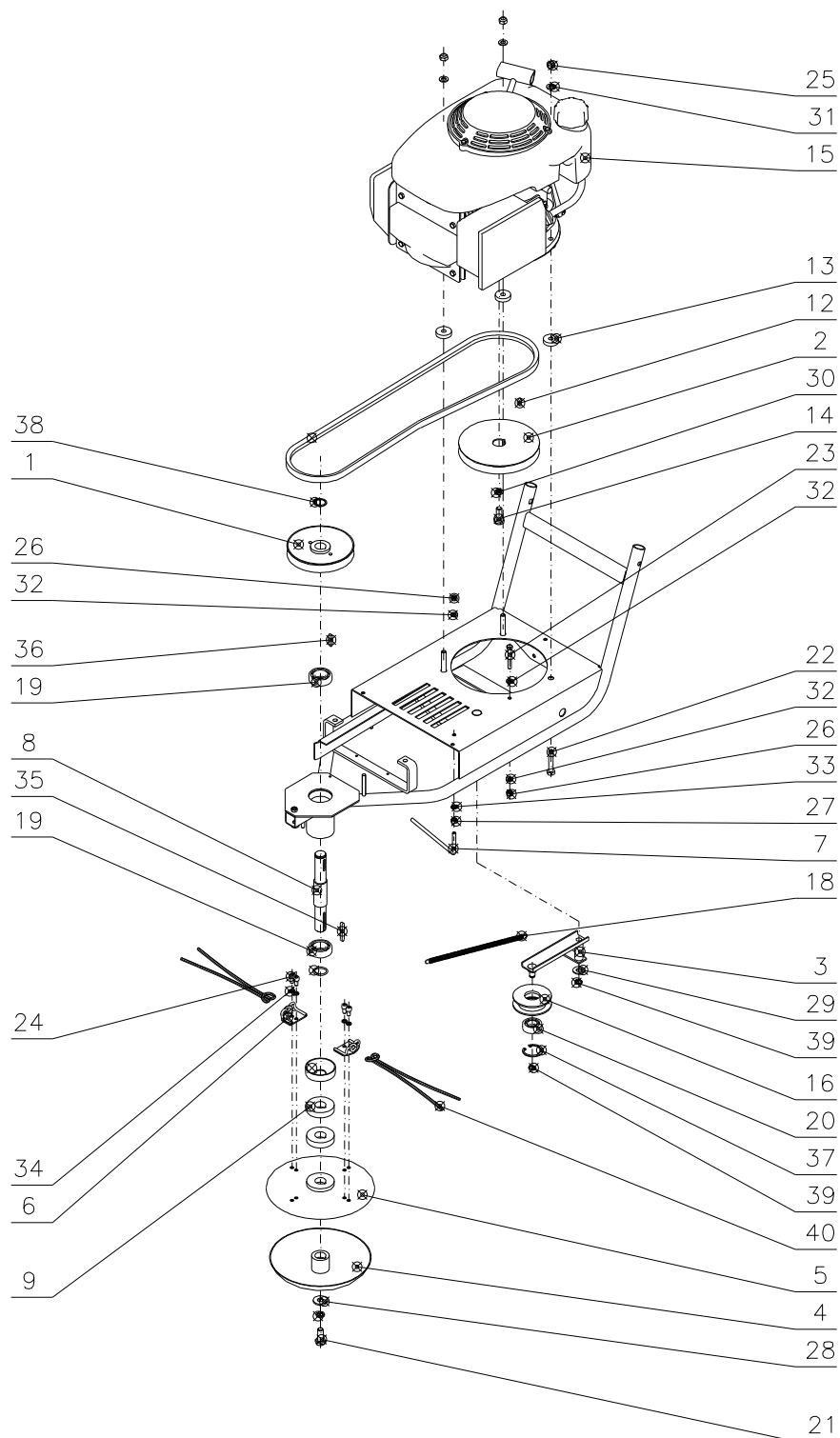


Casing of the machine Trimmer60					
Pos.	Name	Size	Drawing-Norm	Order No.	Pcs
1	Welded frame		22 9 1536 047	195 048	1
2	Upper casing		22 9 8545 024	195 036	1
3	String head housing		632 0 8545 026	195 536	1
4	Pillar		22 9 8545 026	195 045	2
5	String cutter		32 0 6030 011	195 035	1
6	Handlebar rail		32 0 8045 053	195 046	1
7	Operating hor. bar		22 9 8058 011	195 047	1
8	Arrestment lever		32 0 8058 006	195 049	1
9	Gas lever	ACP 400	SACCON	189 517	1
10	Bowden of arestment		622 9 8074 043	195 550	1
11	Bowden of pulley		622 9 8074 027	189 509	1
12	Joint of handlebars			195 551	4
13	Plastic rosebit	M8-pr.50 "JJW"		189 521	2
14	Bowden line	MEP 10876103		189 519	2
15	Bolt	M8x70	ČSN 02 1319.25	195 552	2
16	Bolt	M6x50	ČSN 02 1101.25	195 521	1
17	Bolt	M5x35	ČSN 02 1143.55	189 558	2
18	Bolt	M8x80	ČSN 02 1174.25	195 553	2
19	Bolt	M8x20	ČSN 02 1103.25	189 548	1
20	Bolt	M6x45	ČSN 02 1101.25	195 522	1
21	Bolt	M6x16	ČSN 02 1103.25	189 552	2
22	Bolt	M5x10	ČSN 02 1103.25	195 525	1
23	Nut	M8	ČSN 02 1492.25	104 622	2
24	Nut	M6	ČSN 02 1492.25	168 516	6
25	Nut	M6	ČSN 02 1401.25	1800141	1
26	Nut	M5	ČSN 02 1401.25	195 554	2
27	Rubber filler		32 0 9220 230	189 105	4
28	Washer		9 ČSN 02 1729.05	150 536	2
29	Washer	8,4	ČSN 02 1702.15	131 517	2
30	Washer	6,6	ČSN 02 1729.05	195 530	3
31	Washer	6,6	ČSN 02 1727.15	169 508	3
32	Washer	6,4	ČSN 02 1702.15	189 571	4
33	Washer		5,5 ČSN 02 1729.05	195 531	1
34	Washer	5,3	ČSN 02 1702.15	189 581	2
35	Holder with nut		622 9 1541 004	195 532	1
36	Nut cover	034-03- M8(13)		169 504	2



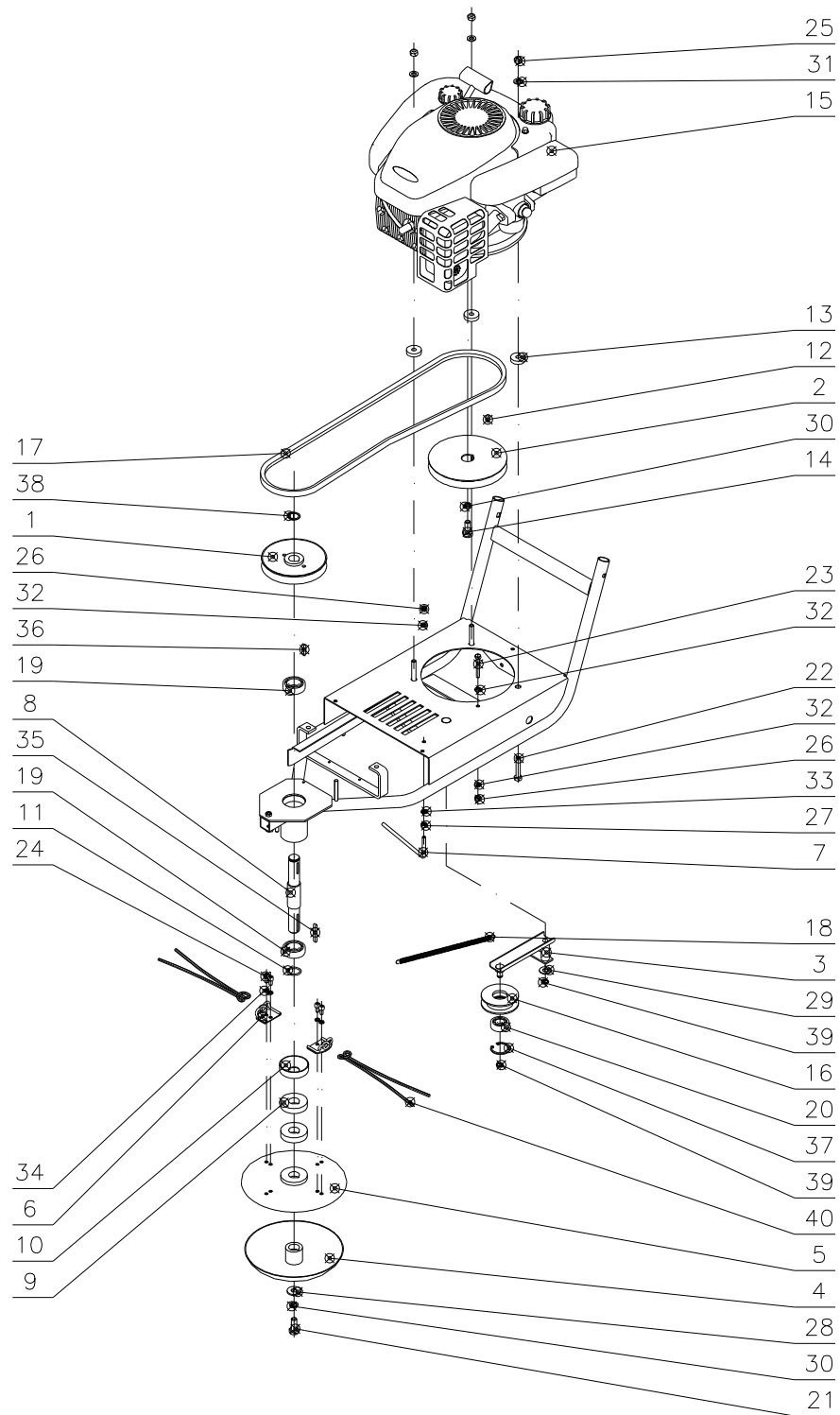
Casing of the machine Trimmer50

Pos.	Name	Size	Drawing-Norm	Order No.	Pcs
1	Welded frame		22 9 1536 047	195 048	1
2	V-belt casing		632 0 8545 027	195 537	1
3	String head housing		632 0 8545 026	195 536	1
4					
5	String cutter		32 0 6030 011	195 035	1
6	Handlebar rail		32 0 8045 053	195 046	1
7	Operating hor. bar		22 9 8058 011	195 047	1
8	Arrestment lever		32 0 8058 006	195 049	1
9	Gas lever	ACP 400	SACCON	189 517	1
10	Bowden of arrestm.		622 9 8074 043	195 550	1
11	Bowden of pulley		622 9 8074 027	189 509	1
12	Joint of handlebars			195 551	4
13	Plastic rosebit	M8-pr.50 "JJW"		189 521	2
14	Bowden guide	MEP 10876103		189 519	2
15	Bolt	M8x70	ČSN 02 1319.25	195 552	2
16	Bolt	M6x50	ČSN 02 1101.25	195 521	1
17	Bolt	M5x35	ČSN 02 1143.55	189 558	2
18					
19	Bolt	M8x20	ČSN 02 1103.25	189 548	1
20	Bolt	M6x45	ČSN 02 1101.25	195 522	1
21	Bolt	M6x16	ČSN 02 1103.25	189 552	2
22	Bolt	M5x10	ČSN 02 1103.25	195 525	3
23					
24	Nut	M6	ČSN 02 1492.25	168 516	6
25	Nut	M6	ČSN 02 1401.25	1800141	1
26	Nut	M5	ČSN 02 1401.25	195 554	2
27					
28					
29	Washer	8,4	ČSN 02 1702.15	131 517	2
30	Washer	6,6	ČSN 02 1729.05	195 530	3
31	Washer	6,6	ČSN 02 1727.15	169 508	3
32	Washer	6,4	ČSN 02 1702.15	189 571	4
33	Washer	5,5	ČSN 02 1729.05	195 531	3
34	Washer	5,3	ČSN 02 1702.15	189 581	2
35	Holder with nut		622 9 1541 004	195 532	1
36					



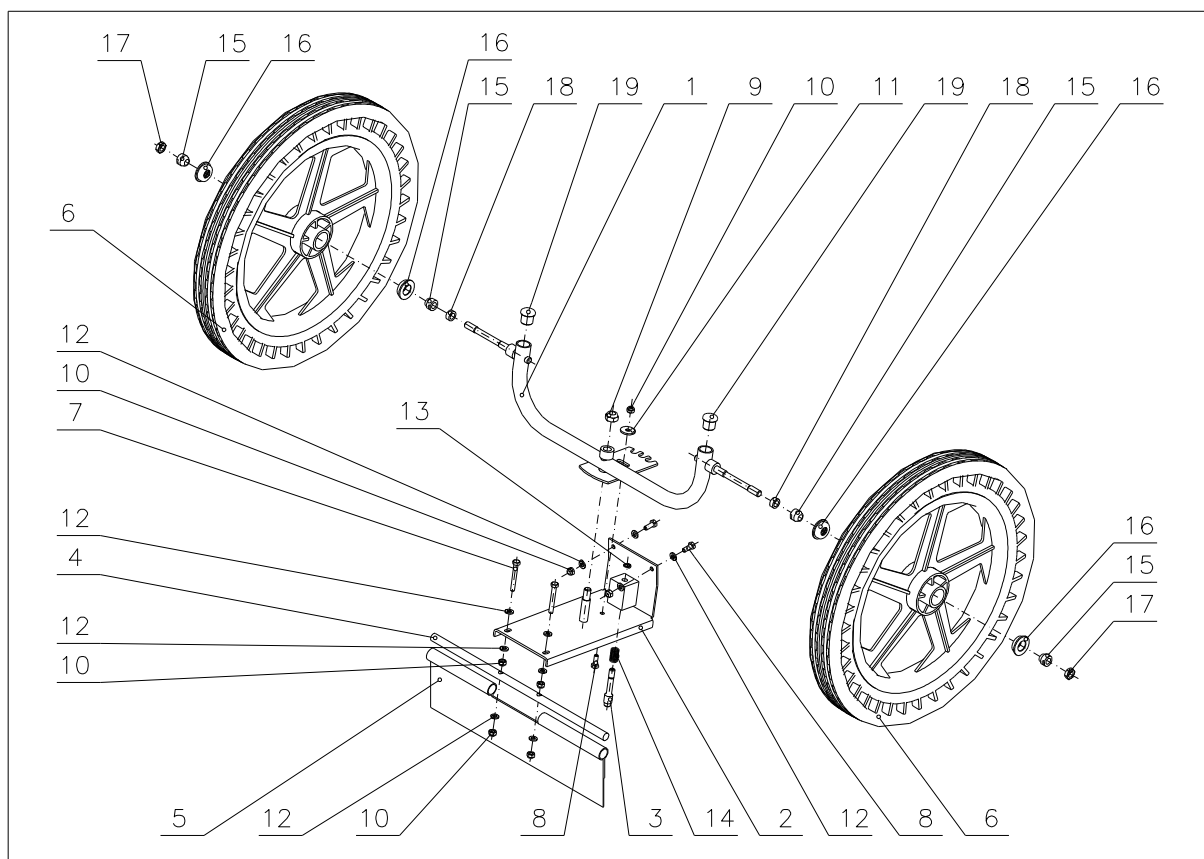
String head drive Trimmer 60

Pos.	Name	Size	Drawing-Norm	Order No.	Pcs
1	Driven belt pulley		22 9 3325 016	195 008	1
2	Belt pulley A13-140		22 9 3325 017	195 007	1
3	Pulley arm-Weldment		22 9 3330 009	189 022	1
4	Support plate		22 9 5025 008	195 025	1
5	Upper disk		22 9 5025 009	195 026	1
6	String holder		22 9 5042 006	195 027	2
7	Stop with belt guide		32 0 8644 003	195039	1
8	Drive shaft		32 0 3822 018	195 024	1
9	Distance ring		32 0 9320 068	195 044	2
10	Dish		32 0 9220 210	195 040	1
11	Shim block	30,5/20,2/0,3	32 0 9220 028	127 041	3
12	Feather	PJ-5V	32 0 9516 001	104 012	1
13	Distance filler		32 0 9220 222	189 074	3
14	Bolt	W 3/8"	32 0 9016 057	105 011	1
15	Engine	Honda GCV 160 N2 E3		171 535	1
16	Pulley ADELA		632 0 3325 040	189 586	1
17	V-belt	A52 BareBack	GATES	195 519	1
18	Spring	TZ 0,8x8,8x95,2x100	FEVOZ Slavičín	189 516	1
19	Bearing	6004 2RS	ČSN 02 4630	9943158	2
20	Bearing	6300 2RS	ČSN 02 4630	189 585	1
21	Bolt	M10x1x25	ČSN EN 28676	137 501	1
22	Bolt	M8x45	ČSN 02 1103.25	195 555	1
23	Bolt	M6x45	ČSN 02 1103.25	195 523	1
24	Bolt	M6x12	ČSN 02 1143.55	195 524	4
25	Nut	M8	ČSN 02 1492.25	104 622	3
26	Nut	M6	ČSN 02 1492.25	168 516	2
27	Nut	M6	ČSN 02 1401.25	1800141	1
28	Washer	11	ČSN 02 1729.05	195 529	1
29	Washer	10,5	ČSN 02 1702.15	131 518	1
30	Washer	10	ČSN 02 1740.05	106 530	2
31	Washer	8,4	ČSN 02 1702.15	131 517	3
32	Washer	6,4	ČSN 02 1702.15	189 571	3
33	Washer	6	ČSN 02 1745.05	6521602	1
34	Washer	6	ČSN 02 1740.05	6510920	4
35	Feather	5x5x40	ČSN 02 2562	195 546	1
36	Feather	5x5x25	ČSN 02 2562	189 574	1
37	Retaining ring	35	ČSN 02 2931	126 503	1
38	Retaining ring	20	ČSN 02 2930	6021512	1
39	Retaining ring	10	ČSN 02 2930	6021519	2
40	String	DIA 4,0 HEXAGONAL			2

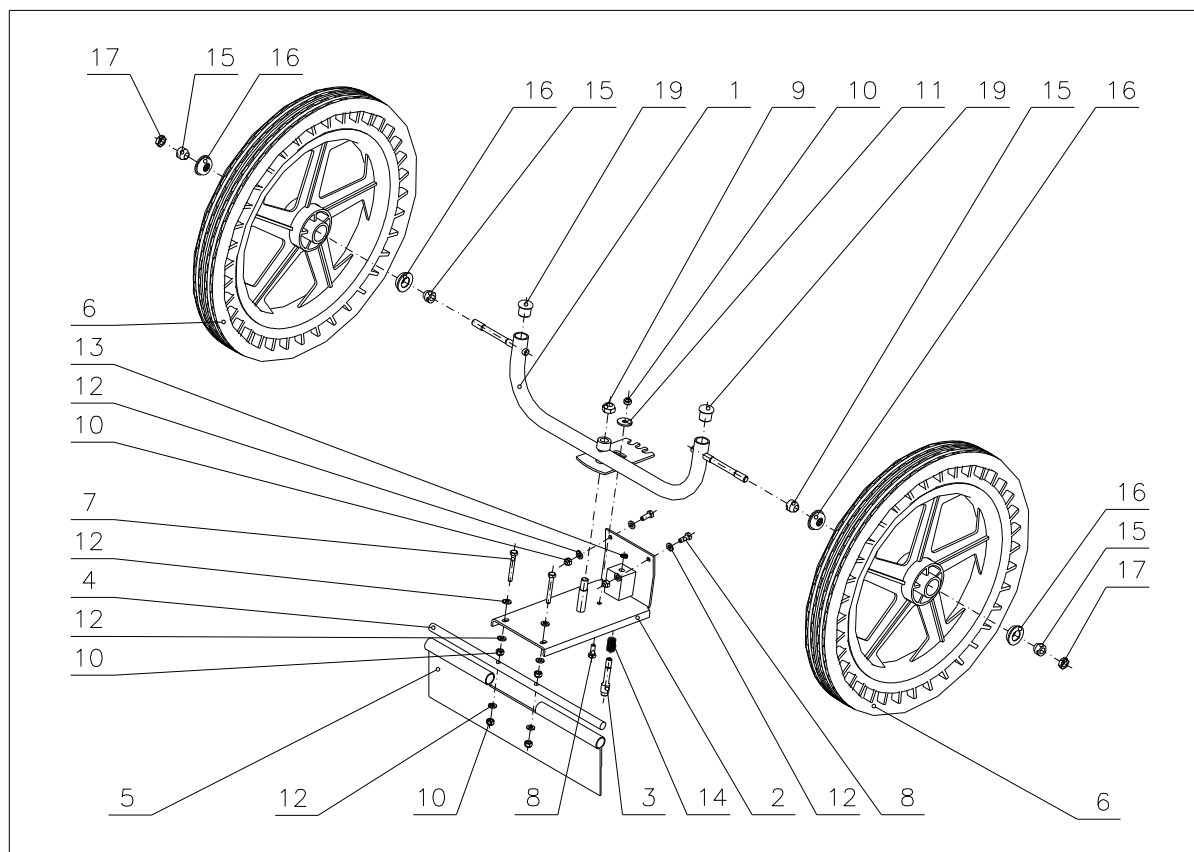


String head drive Trimmer 50

Pos.	Name	Size	Drawing- Norm	Order No.	Pcs
1	Driven belt pulley		22 9 3325 016	195 008	1
2	Belt pulley A13-140		22 9 3325 017	195 007	1
3	Pulley arm-Weldment		22 9 3330 009	189 022	1
4	Support plate		22 9 5025 008	195 025	1
5	Upper disk		22 9 5025 009	195 026	1
6	String holder		22 9 5042 006	195 027	2
7	Stop with belt guide		32 0 8644 003	195 039	1
8	Drive shaft		32 0 3822 018	195 024	1
9	Distance ring		32 0 9320 068	195 044	2
10	Dish		32 0 9220 210	195 040	1
11	Shim block	30,5/20,2/0,3	32 0 9220 028	127 041	3
12	Feather	PJ-5V	32 0 9516 001	104 012	1
13	Distance filler		32 0 9220 222	189 074	3
14	Bolt	W 3/8"	32 0 9016 057	105 011	1
15	Engine	Tec.CENTURA 55		189 600	1
16	Pulley ADELA		632 0 3325 040	189 586	1
17	V-belt	A52 BareBack	GATES	195 519	1
18	Spring	T0,8x8,8x95,2x100	FEVOZ Slavičín	189 516	1
19	Bearing	6004 2RS	ČSN 02 4630	9943158	2
20	Bearing	6300 2RS	ČSN 02 4630	189 585	1
21	Bolt	M10x1x25	ČSN EN 28676	137 501	1
22	Bolt	M8x45	ČSN 02 1103.25	195 555	1
23	Bolt	M6x45	ČSN 02 1103.25	195 523	1
24	Bolt	M6x12	ČSN 02 1143.55	195 524	4
25	Nut	M8	ČSN 02 1492.25	104 622	3
26	Nut	M6	ČSN 02 1492.25	168 516	2
27	Nut	M6	ČSN 02 1401.25	1800141	1
28	Washer	11	ČSN 02 1729.05	195 529	1
29	Washer	10,5	ČSN 02 1702.15	131 518	1
30	Washer	10	ČSN 02 1740.05	106 530	2
31	Washer	8,4	ČSN 02 1702.15	131 517	3
32	Washer	6,4	ČSN 02 1702.15	189 571	3
33	Washer	6	ČSN 02 1745.05	6521602	1
34	Washer	6	ČSN 02 1740.05	6510920	4
35	Feather	5x5x40	ČSN 02 2562	195 546	1
36	Feather	5x5x25	ČSN 02 2562	189 574	1
37	Retaining ring	35	ČSN 02 2931	126 503	1
38	Retaining ring	20	ČSN 02 2930	6021512	1
39	Retaining ring	10	ČSN 02 2930	6021519	1
40	String	DIA 4,0 HEXAGONAL			2



Axle Trimmer60					
Pos.	Name	Size	Drawing-Norm	Order No.	Pcs
1	Axle-Weldment		22 9 8032 039	195 023	1
2	Axle plate		22 9 8032 041	195 021	1
3	Arrestment pin		32 0 9311 127	195 011	1
4	Screen holder		32 0 9320 043	195 029	1
5	Screen		632 0 1840 067	195 542	1
6	Wheel solid rubber		ET 69234/0-01 če	195 548	2
7	Bolt	M6x45	ČSN 02 1103.25	195 523	2
8	Bolt	M6x16	ČSN 02 1103.25	189 552	3
9	Nut	M10	ČSN 02 1492.25	195 527	1
10	Nut	M6	ČSN 02 1492.25	168 516	7
11	Washer	6,6	ČSN 02 1727.15	169 508	1
12	Washer	6,4	ČSN 02 1702.15	189 571	10
13	retaining ring	8	ČSN 02 2930	195 534	1
14	Spring	1,25x11,25x28x8,5		124 500	1
15	Cone	3/8"-26	BERNARDI MOZZI	195 510	4
16	Bearing		BERNARDI MOZZI	195 512	4
17	Nut	3/8"-26x9	BERNARDI MOZZI	195 511	2
18	Distance ring	15x6	BERNARDI MOZZI	195 509	2
19	Circular plug	085-068 22x1-2,5	SUNAP	189 524	2



Axle Trimmer 50

Poz.	Název	Rozměr	Výkres - Norma	Obj. čísl	Ks
1	Axle-Weldment		22 9 8032 038	195 022	1
2	Axle plate		22 9 8032 041	195 021	1
3	Arrestment pin		32 0 9311 127	195 011	1
4	Screen holder		32 0 9320 043	195 029	1
5	Screen		632 0 1840 067	195 542	1
6	Wheel solid rubber		ET 69234/0-01	195 549	2
7	Bolt	M6x45	ČSN 02 1103.25	195 523	2
8	Bolt	M6x16	ČSN 02 1103.25	189 552	3
9	Nut	M10	ČSN 02 1492.25	195 527	1
10	Nut	M6	ČSN 02 1492.25	168 516	7
11	Washer	6,6	ČSN 02 1727.15	169 508	1
12	Washer	6,4	ČSN 02 1702.15	189 571	10
13	retaining ring	8	ČSN 02 2930	195 534	1
14	Spring	1,25x11,25x28x8,5		124 500	1
15	Cone	3/8"-26	BERNARDI MOZZI	195 510	4
16	Bearing		BERNARDI MOZZI	195 512	4
17	Nut	3/8"-26x9	BERNARDI MOZZI	195 511	2
18					
19	Circular plug	085-068 22x1-2,5	SUNAP	189 524	2

