VARI®

Mulcher

F-700H

☑ **EN** **Englsich – translation of the original instructions for use**

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CZ Základní informace

Vybalení stroje a instruktáž požadujte u svého prodejce jako součást předprodejního servisu!

SK Základné informácie

Vybalení stroje a inštruktáž požadujte u svojho predajcu ako súčasť predpredajného servisu!

EN Basic information

As part of the pre-sale servicing ask your dealer to unwrap the machine and give you a brief training on how to use it!

DE Basisinformation

Verlangen Sie Auspacken und Anweisung bei Ihrem Verkäufer im Rahmen des Vorverkauf-Services!

RU Исходная информация

Распокование товара и инструктаж надо требоват у своего продавца как част предпродажного сервиза!

PL Informacje podstawowe

W ramach serwisu przedsprzedażowego poproś sprzedawcę o rozpakowanie urządzenia i wstępny instruktaż obsługi urządzenia.

CZ Typové označení SK Typové označenie EN Type DE Typenbezeichnung	RU Типовое обозначение PL Typ	**F-700H**	CZ Místo pro nalepení identifikačního štítku: SK Miesto pre nalepenie identifikačného štítku: EN Stick the identifikation label here: DE Platz für die Identifikationsetikete: RU Место для приклеивания идентификационного щитка: PL Miejsce na naklejkę identyfikacyjną:
CZ Motor SK Motor EN Engine DE Motor	RU Двигатель PL Silnik	**Honda GXV390**	
CZ Identifikační číslo[1] (№) SK Identifikačné číslo[2] (№) EN Identification number[3] DE Identifikationsnummer[4]	RU Идентификационный номер[5] PL Numer identyfikacyjny[6]	**10005** _ _ _ _ _. _ _ _ _ . _ _ _ _ _	
CZ Datum dodání-prodeje SK Dátum dodania-predaja EN Delivery date-date of sale DE Verkaufs-Lieferdatum	RU Дата поставки–продажи PL Data dostawy-data sprzedaży		
CZ Dodavatel (razítko) SK Dodávateľ (pečiatka) EN Supplier (stamp) DE Lieferant (Stempel)	RU Поставщик (печать) PL Dostawca (pieczątka)		

Doporučujeme Vám vyhotovit si kopii této stránky s vyplněnými údaji o koupi stroje pro případ ztráty nebo krádeže originálu návodu.

Odporúčame Vám vyhotoviť si kópiu tejto stránky s vyplnenými údajmi o kúpe stroja pre prípad straty alebo krádeže originálu návodu.

You are advised to make a copy of this page with filled in information about the machine's purchase in case the original manual is lost or stolen.

Wir empfehlen Ihnen von dieser Seite eine Kopie zu machen für den Fall, dass das Original der Bedienungsanleitung verloren geht oder gestohlen wird.

Рекомендуем Вам сделать себе копию этой страницы с заполненными данными о покупке косилки на случай потери или кражи оригинала руководства.

Zaleca się wykonanie kopii niniejszej strony instrukcji zawierającej informacje o zakupie urządzenia na wypadek utraty lub kradzieży oryginału instrukcji obsługi.

1 *Doplňte číslo z výrobního štítku nebo nalepte identifikační štítek.*
2 *Doplňte číslo z výrobného štítku alebo nalepte identifikačný štítok.*
3 *Fill in the plate number from the name plate or stick the indentification label.*
4 *Ergänzen Sie die Nummer aus dem Typenschild oder kleben Sie die Identifikationsetikette auf.*
5 *Внесите номер из заводского щитка или приклейте идентификационный щиток*
6 *Wpisz numer z tabliczki znamionowej lub przyklej naklejkę identyfikacyjną.*

Revision 01/2016

EN Instructions for use

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*The manufacturer **reserves** the right to introduce technical modifications and innovations, which do not affect the function and safety of the machine.*
These modifications may not necessarily be specified in this user manual.
Printing errors reserved.

1.1 Introduction

Dear customer and user,

Thank you for the confidence you demonstrated by purchasing our product. You have become the owner of a machine from a broad range of gardening, farming, small agricultural, and municipal machinery and tools, produced by **VARI, a.s.**.

The ***Hurricane* F-700H** mulcher is designed to meet the most demanding requirements of users in professional use. The powerful engine together with the patented edge design of the cutting blade guarantee trouble-free mowing of various types of vegetation. The hydrostatic gearbox, together with the wide travel wheels and the low center of gravity of the machine, enable easy movement of the machine even in the most difficult terrain. A snow plough, snow chains and a sulky can be mounted on the machine, so the machine can be used all year round. The automatic brake and the possibility to lock the guide wheels in a straight line then ensure safety, especially when working on slopes.

Please read through this user manual thoroughly before use. The product will service you reliably for many years to come, provided that you follow the instructions provided.

1.1.1 General notices

The user i**s obliged** to familiarize himself with this user manual and follow all operating instructions to ensure that no injury or damage to the user or possibly other persons occurs.

The safety instructions provided in this user manual do not include all possibilities, conditions, and scenarios that may arise in practise. Contributing safety factors, such as common sense, caution and care, are not included in this manual but it is assumed that every operator or maintenance worker, who operates the machine, shall apply them.

The machine must only be used by persons who are physically and mentally healthy. Professional use of this machine requires training of operating personnel in its safe use and operation, and a log of such training should be administered. **The owner must also adopt "categorization" of work according to corresponding national legislation.**

If any of the information provided to you in the manual is unclear, contact **your retailer**[7] or contact the **machine manufacturer**[8] directly.

The user manuals included with this machine are considered an integral component. They must always be available for reference and located in an accessible, safe, and protected area to prevent their damage. If the machine is re-sold to another individual, the user manuals must be provided to the new owner. The manufacturer waives all responsibility for any risk, harm, emergency, or injury incurred during operation of the machine if the above specified conditions are not fulfilled.

The manufacturer shall not be liable for any damage incurred by unauthorized use, improper maintenance, and damage incurred by any modification of the machine without the consent of the manufacturer.

It is particularly important to observe the safety guidelines to prevent personal injury or damage to the environment or property.

These instructions are marked in the user manual by the following cautionary safety symbols:

7 *Fill in the retailer's address into the table at the beginning of this manual (if not already completed by the retailer)*
8 *The manufacturer's address is specified at the end of this manual.*

	**If you see this symbol in the manual, carefully read through the following information!**
	**This international safety symbol indicates important information, relating to safety. When you see this symbol, pay careful attention to personal harm or harm to others and carefully read the information that follows.**

Table 1: Symbols

1.2 Operation safety

The machine is designed to protect the user against flying parts of mowed stand as much as possible. Do not remove any active or passive safety element. Doing so shall expose you to injury or harm. Before putting the machine into operation, read and observe the following instructions and work safety regulations.

- Communicate the safety instructions to all other persons who work with the machine.
- Keep these safety instructions in a safe place.
- Repairs to the safety cut-out may only be carried out by the manufacturer or persons authorized by him (authorized services).

1.2.1 Safety regulations

- The mulcher may only be operated by one person. The machine operator must be 18 years or older. He/she must read through the machine operating manuals and is required to be aware of the general principles of occupational safety and to fully understand how the machine works.
- When operating the machine, use work equipment approved according to **EN 166** or **EN 1731** (close-fitting apparel, sturdy footwear, work gloves and protective goggles). Keep a safe distance from the machine, given by the handle.
- Always turn off the engine and wait until the operating tool stops, before engaging in any activity near the machine! Always turn the engine off before leaving the machine!
- Never let the engine running at maximum speed or idling for long periods, with the blade drive clutch and wheel drive clutch turned off! This could result in damage to the drivetrain components (V-belt, pulley, clutch pulley, etc.)!
- **Before every use of the machine**, check to ensure that no component (particularly working assembly or covers) are not loose or damaged. **Any discovered defects must immediately be removed.** Use only original replacement parts when repairing.
- The mowed vegetation must first be cleared of solid objects (such as rocks, wires, free construction remnants, etc.), which could be ejected or which could damage the machine, prior to machine use. If they cannot be removed, avoid these locations.
- The machine is equipped with a rotating operating tool. The maximum peripheral speed is **82 m.s^{-1}**. It is therefore important to ensure that others remain at a safe distance when the machine is in operation (possible ejection of mowed vegetations or hit solid objects)!
- Since the noise and vibration reference values are exceeded, the following instructions must be followed when operating the machine:
  - Hearing should be protected with suitable protective equipment according to **EN 352-1** (ear muffs) or **EN 352-2** (protective ear plugs). This equipment should be available at your local retailer.
  - Every 20 minutes of machine operation should be interrupted by at least 10 minutes of rest. The operator must not be exposed to other sources of noise or vibration during these rests.
- Do not start the engine in enclosed areas! Use increased caution when handling the machine. The muffler is hot after the engine is turned off. Be careful to avoid spillage onto engine parts when refilling fuel. If spillage occurs, dry the affected parts or wait until the gasoline evaporates.
- All surrounding persons (especially children) and animals must be in safe range of the machine operating space. The operator may continue working after ensuring that they are located at a **safe** distance.

  Notice: EN 12733 standard regulates the limitations of external safety area A around operating area B. Meanwhile, suitable restriction labels will prevent entry into this area. The distance between individual sides of areas A and B must not be less than 50 m. As soon as a person or animal enter this hazardous machine area, the operator must immediately release the drive lever of the cutting device and wait until the area is again free.
- Removal of protective devices and machine covers is prohibited.
- **Safe** climbing availability of the machine is 10°. The maximum tilt of the engine during long-term operation is 20°, in short-term (within one minute) operation 30°.
- If possible, do not use the machine on damp grass. You must always move on safe terrain. Work while walking, never running. Be especially careful when changing direction on slopes. Do not mow on steep slopes. In the event of a fall, do not hold the machine, but release it.

⚠ Any repairs, adjustments, lubrication, and cleaning of the machine must only be performed when the machine is off and with the spark plug cable disconnected.

1.2.2 Noise reference values

Description	F-700H		
Engine	**Honda GXV390**		
Declared emission sound pressure level A at operator's work station[9] L_{pAd}	**(89,0+1,0) dB**		
Declared vibration total value of hand-arm transmitted vibration[10] $a_{hv,d}$	**(2,5+1,3) m.s^{-2}**		

Table 2: Noise reference values

1.2.3 Safety labels

The user must keep safety labels on the machine in legible condition and secure their replacement if damaged.

Location:	Number:	Description:
Combined sticker on the rear side of the machine frame. (***Fig. 14***)	1	Caution. Read carefully through the user manual before using.
	2	Caution. Disconnect the spark plug cables prior to undertaking cleaning, adjustment of maintenance of the machine.
	3	Risk of hands cutting. Avoid placing hands or feet in the blade operating area.
	4	Risk of injury from flying debris, shavings, ejected objects, etc. Keep persons and animals at a safe distance from the machine.
	5	Do not exceed the maximum permitted slope incline when operating the machine.
	6	Use a protection of your eyes and hearing.
	7	Bypass lever – gearbox switching. **ON** = engine drive of gearbox is on **OFF** = engine drive of gearbox is off – manual pushing of the machine is possible
Independent stickers on the control lever and on the crossbar on the right side. (***Fig. 15***)	8	Drive activation of the work tool: **0** = work tool off **1** = unlock the safety button **2** = work tool rotates
	9	Service brake.
Independent stickers on the control lever and on the crossbar on the left side. (***Fig. 16***)	10	Engages the machine drive. **0** = drive off **1** = drive on
	11	Cutting height adjustment.
Independent stickers on the blade cover. (***Fig. 17***)	12	Arrow of work tool turning direction – to the right (clockwise).
	13	Restricted area for other individuals or pets. Minimum safe distance from the machine 50 m.

Table 3: Safety labels

1.3 Basic information

ⓘ **If the left or right side is indicated in the text of the operating instructions, the view of the operator behind the handlebars of the machine is always considered.**

1.3.1 Use of the machine

This professional mulcher ***Hurricane* F-700H** is designed for mowing grasslands of all types of stalked grasses, preferably old and dry, on maintained and unmaintained areas. The mulcher can be used for trimming self-seeding woody plants up to a diameter of 2 cm. The most ideal periods for using the machine are those periods when the vegetation is dry and the cutting blade can crush the vegetation into small pieces that do not need to be collected from the area. When mowing grasslands grown in the same period as they are mowed, their maximum recommended height is up to 50 cm. Depending on the density, humidity and type of vegetation, this maximum height may be lower.

Due to the used tyre pattern and the cutting height adjustment system, this machine is not intended for landscaping lawns.

⚠ **Removal of protective devices and machine covers is prohibited.**

⚠ **It is always necessary to adapt the working width to the density of the cut vegetation.**

1.3.2 Connectable accessories

It is possible to connect following accessories to the ***Hurricane* F-700H** mulcher: ASR-700 snow blade, snow chains, AV-650 sulky.

ⓘ **These accessories are sold separately. Check with your dealer about the launch date.**

9 *measured in accordance with **ČSN EN ISO 11201** under conditions defined in **ČSN EN 836+A1/A2, Annex H***
10 *measured in accordance with **ČSN EN ISO 1033** under conditions defined in **ČSN EN 836+A1/A2, Annex G***

1.3.2.1 Technical data

Hurricane F-700H	Unit	Value
Length x width x height	mm	1962 x 753 x 1100
Weight	kg	135
Maximum cutting width	cm	68
Height adjustment of the cutting blade (6 positions)	cm	6-11
Blade revolutions[11]	min^{-1}	2300
Blade peripheral speed[12]	$m.s^{-1}$	82
Drive speed[13]	$km.h^{-1}$	forward 0 – 6,75 R 2,94
Machine area capacity (based on the vegetation type)	m^2/h	1000 - 4400

Table 4: Technical data

1.3.2.2 Engine information

ⓘ Any information about the engine that is not included in this manual is available on the engine manufacturer's website.

Description	Unit	Value	
Engine	-	Honda[14] GXV390	
Maximum engine RPMs (set)	min^{-1}	3200 ± 100	
Maximum engine incline (permanently)	∠	20°	
Maximum engine incline (short-term[15])	∠	30°	
Fuel tank capacity	l (litre)	2,1[16]	
Fuel	petrol (unleaded)[17]	oct.No. 91-95	
Engine oil capacity	l (litre)	1,1	
Oil rating	SAE / API	SAE 10W-30 or SAE 30 / SJ or SH	
Spark plug	-	NKG BPR6ES	
		BRISK LR15YC	

Table 5: Technical data of the engine

1.3.3 Description of machine and its components

The basis of the **Hurricane F-700H** mulcher (***Fig. 1***) is a welded steel chassis with a work tool cover **1**, to which all important parts of the machine are attached. The handlebars **2** are fixed to the frame by means of a handlebar holder **3** with a swivel joint **4** , which can be locked in three positions by means of the lever **5**, and are height-adjustable by means of the tightening nut **6**. All controls (**7**, **8**, **9**, **10**, **11** and **12**) for safe operation of the machine are ergonomically arranged on the handlebars. The handles **13** serve to firmly grip and guide the machine during work. The travel clutch lever **7** is located on the left handle from above and the cutting height adjustment lever **8** is located from below. The blade drive lever **10** is located on the right handle from above and the service brake lever **11** from below. If the operator releases the handlebars in an emergency, the two (upper) control levers return to their home position and disconnect the power transmission from the engine. The blade drive is equipped with an automatic brake that stops the blade[18]. The engine **14** speed is controlled by the accelerator lever **12**, which is located in the handlebar bar on the right side. Travel is ensured by a hydrostatic reverse gearbox **15** with a belt clutch, which ensures a smooth transmission of force to the wheels **16**. The gears are shifted with the shift lever **9**, which is located on the handlebar crossbar on the left side. A bypass lever **17** is located on the gearbox, which serves to switch the gearbox between travel and manual pushing of the machine. The transmission gear components are covered by the gearbox cover **18**. The brake, the blade drive clutch and the belt drive in the front part are covered by a plastic cover **19** fixed by a screw connection to the frame. In the front part there is a working space formed by a steel blade cover with a side flap **20**, which is secured by two nuts **21** and a front lifting cover **22**, protecting the operator from flying parts of the cut vegetation. A guide wheel frame **23**, which is used to adjust the cutting height, is screwed onto the blade cover, with guide wheels **24**, which can be locked in a straight line by means of cotter pins **25**. On the left side of the guide wheel frame there is a foot **26** for locking the set cutting height. At the rear, a bumper **27**, is bolted to the machine chassis to protect the cables and gearbox, and an **AV-650 sulky** is attached to it to facilitate work on large flat surfaces.

1.4 Instructions for use

1.4.1 Assembling the machine

ⓘ **Ask your dealer to unpack the machine, assemble it and instruct you as part of the pre-sales service.**

ⓘ **Due to the weight of the machine, we recommend unpacking and assembling the machine with the assistance of another person.**

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11 *Actual revolutions of the non-laden work tool with calculated losses in the belt drive.*
12 *Actual peripheral speed of the blade at max. engine speed without load with calculated losses in the belt drive.*
13 *Actial drive speed at max. engine speed without load.*
14 *More information about the engine including replacement part numbers can be found at* ***www.honda-engines-eu.com***
15 *Short-term = within one minute*
16 *Measured according to the* ***Society of Automotive Engineers (SAE) standard J1349***
17 *Due to the ever-increasing proportion of BIO components in the fuel, use a fuel stabilizer.*
18 *The automatic brake is an active protective element that increases the safety of the machine.*

1.4.1.1 Machine assembly procedure

Use the following procedure when assembling:

1. According to ***Fig. 2*** - after removing the cardboard packaging **1** from the transport pallet **2**, cut the strips **3** fixing the machine on the pallet and remove the guide wheels **4**. Loosen the tightening nut **5**, straighten the handlebars **6** and tighten the tightening nut. Press the handlebar lock lever **7** and turn the handlebars **6** to the working position. According to ***Fig. 3*** step **> 1** – unscrew the front cover **1** on both sides and remove it from the machine. Move the bypass lever on the gearbox to the **OFF** position ***(Fig. 14*** - **7**) and carefully drive the machine off the pallet - take extra care.
2. According to ***Fig. 3*** step **> 2** place the front cover **8** on the machine chassis under the deflector and screw it on again – tighten the screw connection so that the cover can move freely. Install the springs **2**. According to **> 3** Press the cutting height adjustment lever (**8** in ***Fig. 1***), place the frame with the guide wheels **3** and lock the cutting height adjustment (**26** in ***Fig. 1***) in any position. Screw the frame with the guide wheels to the chassis using screws **4**, flat washers **5** and self-locking nuts **6**. Finally, according to **> 4**, fasten the bowden cables to the handlebar tube (excluding the shifting lever bowden cable) using the cable ties **7** and cut off the free ends of the cable ties.

1.4.1.2 Handlebars adjustment

The handlebars can be adjusted in two levels ***Fig. 4***:

1. ***Height:*** Loosen the tightening nut **1** and adjust the height of the handlebars to suit you. Tighten the nut.
2. ***Sides:*** Press the handlebar lock lever **2** downwards and turn the handlebars left or right one position until the pin locks the handlebars in the side position.

To reduce the dimensions of the machine, eg when transporting in a car, either fold the handlebars forward over the engine or lower the handlebars to a horizontal position and then turn the entire handlebars 180 ° clockwise. Be careful not to strain the bowden cables somewhere on the construction of the machine.

1.4.1.3 Cutting height adjustment

The cutting height setting is affected by several important factors:

- stand height and density
- species of predominant plants in the stand
- travel speed of the machine
- cutting width
- surface irregularities

In general, the greater the value of each of these factors, the higher the height of the guide wheels and the height of the blade above the surface. Always set the cutting height so that the working space of the blade is not clogged. Then the blade speed is reduced, the engine does not run at optimum speed and the self-cleaning ability of the blade mowing space from accumulated grass material is reduced.

⚠ **Always increase the cutting height to the highest level before uneven terrain. This will prevent damage to the knife.**

Actual cutting height adjustment using the guide wheels ***Fig. 9***:

1. push on both handlebar grips so that the locking pin **2** in the locking plate **3** is relieved.
2. with the fingers of the left hand, press the cutting height adjustment lever **1** on the underside of the left handlebar grip.
3. push the two handles to lower or increase the height of the guide wheels.
4. align one of the oval holes on the locking plate **3** against the locking pin **2**
5. release lever **1**

1.4.2 Commissioning

ⓘ **The machine may be supplied without engine fluids** (depending on various national regulations)!

ⓘ **First, carefully read the engine operating manual[19]! This will help prevent any engine damage.**

1. Check the oil level; if necessary, fill the engine with the recommended type and amount of oil. Fill the tank with the recommended type and amount of petrol.
2. Move the throttle lever into the **4** **CHOKE**[20] position. Throttle lever positions **1**=**STOP**, **2**=**MIN**, **3**=**MAX** and **4**=**CHOKE** are described in ***Fig. 5***. All of the four described main positions are locked by a simple crimp-lug in the lever body.
3. Pull the manual starter rope to start the engine[21].
4. Leave a new or cold engine to run for approx. 30 second with choke on (throttle lever in position **4**), 4. then move the throttle lever to the **3** position.

⚠ **Do not leave the machine unattended!**

19 *Original engine manual is included in the machine packaging.*
20 *Engines equipped with automatic choke and throttle lever in **MAX** position, automatic setting of maximum rpms occurs after the engine has warmed.*
21 *Directions for starting the engine are described in detail in the engine operating instructions.*

⚠ **When starting the engine, both of the control levers 7 and 10 in *Fig. 2* must be in the off position (must not be depressed to the handles)!**

1.4.2.1 Activating the blade

⚠ **Ensure that all persons, children, and pets are located at a safe distance from the machine! If not, do not continue in further activity!**

⚠ **Before every use, check that the screws that fasten the work tool and those of the protection elements, covers, and engine are properly tightened!**

1. Start the engine[22]. Set the maximum engine RPMs using the throttle lever. (If the engine is cold, let it warm up for about 1 minute at maximum rpm.)
2. Grasp the left handlebar with your left hand. On the blade drive lever (10 in ***Fig. 2***), press the lock button in the direction of the arrow (***Fig. 6***) with the thumb of your right hand and press the control lever by smoothly moving the right hand.

   ⓘ **Press the lever about two-thirds of the stroke slowly so that the work tool manages to engage without stalling the engine.**
3. After the work tool has begun spinning, depress the lever fully and firmly hold it along with the handle.

   ⓘ **The start-up of the blade is accompanied by a partial slippage of the V-belt and related accompanying phenomena (rattling, whistling). After running in the belt, this phenomenon usually disappears.**

Note:

If you switch on the blade drive again during mowing, the engine may shut down due to the high resistance of the cut grass in the blade guard area. If possible, this area must always be cleaned when starting the blade drive.

A new or cold engine may occasionally stall when engaging the work tool drive the first few times. This will disappear after the engine has warmed up. If the work tool drive cannot be engaged after the engine has warmed, check to see if any of the defects listed in *Table 8* are present.

1.4.2.2 Wheel drive

The **Hurricane F-700H** uses a hydrostatic gearbox, which, unlike its predecessor, allows a smooth adjustment of the travel speed. Move the bypass lever on the gearbox to the **ON** position (1 in ***Fig. 7***).

To switch on the drive, use the lever 7 in ***Fig. 1*** on the left handle. Press the lever up to the handle and the machine will immediately start moving forward. Simultaneously with pressing the lever and starting the machine, adjust the walking speed to the speed of the machine.

- **Drive forward:** Pull the neutral lock collar to the ball and move the gearshift lever to the forward position **„F"** (between positions 1 and 2 in ***Fig. 8***). Then push the upper red lever (7 in ***Fig. 1***) on the left handlebar grip all the way to the handle and the machine will start moving forward. At the same time as starting the machine, you must start walking in the appropriate direction and speed of the machine.

⚠ **Be prepared for the machine to start with a slight jerk.**

⚠ **Always adjust the travel speed to the height and density of the vegetation, the set cutting height and the working width.**

⚠ **When starting at MAXimum speed, start at approx. ½ maximum engine speed. After starting the machine, set the engine speed at which your walking speed will still be safe.**

- **Reverse travel:** Pull the neutral lock collar to the ball and move the gearshift lever to the position **„R"** (4 in ***Fig. 8***). Then push the upper red lever (7 in ***Fig. 1***) on the left handlebar grip all the way to the handle and the machine will start moving backwards. At the same time as starting the machine, you must start walking in the appropriate direction and speed of the machine.

⚠ **Take extra care when reversing the machine!**

1.4.2.3 Stopping the machine

If you need to stop the wheel drive, release the lever on the left handle. The machine wheel drive will stop, but the blade will still rotate. The blade drive is turned off by releasing the lever on the right handle. The automatic brake will stop the blade. Switch the throttle lever to the **MIN** or **STOP** position.

⚠ **Always turn off the engine and wait until the work tool stops, before engaging in any activity near the machine! Always turn the engine off before leaving the machine!**

⚠ **In the event of a critical situation, release the handlebars immediately. Do not stick to the machine! The levers return to the zero position, the machine and the cutting blade stop (the engine remains running at the set speed, so switch off the engine as soon as possible by moving the lever to the "STOP" position!)**

ⓘ **Never let the engine running at maximum speed or idling for long periods, with the blade drive clutch and wheel drive clutch turned off! This could result in damage to the drivetrain components (V-belt, pulley, clutch pulley, etc.)!**

22 *Directions for starting the engine are described in detail in the engine operating instructions.*

1.4.2.4 Selecting the wheel drive speed

The setting of the machine travel speed is governed by similar factors as the cutting height setting. The main principle is that the higher or denser the vegetation, the lower the travel speed must be. The travel speed is selected using the gear lever located on the left (from the operator's point of view) on the handlebar crossbar (**9** in ***Fig. 1***). The gear engaged is indicated by an arrow on the lever against the cut-out or a letter on the gear scale ***Fig. 8***.

1.4.2.5 Transporting the machine on its own axis

To transport the machine on its own axis when pushing the machine, move the bypass lever to the **OFF** position (**2** in ***Fig. 7***).

1.4.3 Mowing

1.4.3.1 Method of vegetation cutting

Set the maximum engine speed, turn the blade to maximum speed and then drive against the crop you want to mow.

When mowing, only proceed through the vegetation so that, if possible, the uncut vegetation is always on the left side of the machine. When mowing on slopes, it is best to drive along the contour of the slope. Pay attention to the maximum permissible tilt of the machine of 20 ° for a long time (30 ° for a short time - up to 30 s)!

If the mowed vegetation is very dense, overgrown, rotten or lying down, it is necessary to reduce the working width of the machine, set a higher cutting height or reduce the travel speed proportionally so that the blade speed is not greatly reduced and the cutting quality and engine overload are reduced.

1.4.3.2 Mowing on a slope

⚠ **If possible, do not use the machine on damp grass. You must always move on safe terrain. Work while walking, never running. Be especially careful when changing direction on slopes. Do not mow on steep slopes. In the event of a fall, do not hold the machine, but release it.**

⚠ **The safe slope accessibility of the machine is 10 °.**

For better control of the machine, lock the guide wheels **1** with the locking pins **2** in a straight line ***Fig. 10***. The pins are included with the machine. When not in use, snap them between the feet on the handlebar grip tube. Use medium or minimum travel speed.

When mowing on slopes up to 20 °, it is best to drive along the contour. It is the safest movement on the slope. Side handlebar settings can also be used

On slopes between 20 ° and 30 °, never drive downhill for long periods. The engine oil overflows outside the intake points and the engine is not sufficiently lubricated.

1.4.3.3 Mowing of tall grasslands

This machine can also be used for cutting tall grass without crushing all the vegetation into small pieces. The vegetation can be used for drying as green fodder. On the right side of the machine, unscrew the two plastic nuts **2** locking the side flap **1** - ***Fig. 11***.

Note: due to the mowing method used, the proportion of crushed plants is higher than in other, more plant-friendly mowing methods.

1.4.3.4 Problems during cutting

The flooding of the grass mass in the space under the blade cover is manifested either by:

- **the engine loses rpm, but does not stall:** Immediately turn off the machine wheel drive (lever on the left handle), gently lift the front of the machine by pressing downwards on the handlebars. Engage reverse gear (R) and reverse slightly. The operating space shall clean itself of excessive debris. Afterwards, drive against the vegetation again.

- **the engine loses speed and switches off**: Release both levers on the handlebars, start the engine, engage reverse gear and back away from the cut vegetation. Switch off the engine. Clean the area under the blade guard and spread the cut grass over the area. Start the engine, switch on the blade drive and drive again against the vegetation.

⚠ **Be especially careful when tilting the machine up or when moving backward with the machine!**

⚠ **The machine must only be tilted to the rear on the handlebars. Always exercise increased caution when you are moving in the area of a raised machine! Ensure that it cannot be set in motion when unattended!**

⚠ **Use increased caution when cleaning the area below the upper cover. The blades are sharp. Use work gloves to protect your hands during cleaning or use an appropriate object (e.g. piece of branch).**

1.5 Maintenance, care, storage

Long-term satisfaction requires due diligent care when cleaning and maintaining the product. Regular maintenance will reduce wear and ensure proper function of all of its parts.

Before each use of the machine, check that all bolts and nuts are properly tightened. Make sure that the protective devices are in order. Also check for worn or damaged blades, related bolts and individual cutting equipment components. Replace worn or damaged blades and related bolts with original spare parts to maintain machine balance. To maintain the safety of the machine, replace worn or damaged parts. The oil level in four-stroke engines must be within the range described in the "Engine Operation and Maintenance Manual".

Follow all directions relating to maintenance and machine adjustments intervals. We recommend that you administer a record of the number of machine operating hours and the conditions in which it operated (for servicing needs). We recommend that you bring your machine to one of our authorized service centres for after-season maintenance and for common maintenance if you feel uncertain about your technical abilities.

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Due to the mass of the machine, maintenance and adjustment should be performed with the assistance of another person.

1.5.1 Lubrication of the machine

When working with lubricants, follow basic hygiene rules and regulations and laws for protecting the environment.

1.5.1.1 Lubrication points

Lubrication point - description	Seasonal interval	After-season	Lubricant	Picture	Note
All cables at the entrance to the bowden cables and at the exit from the adjusting screws	At least 2x	yes	Silicone oil in sprayer		
Wheel stud and wheel suspension fork pin	1x weekly	yes	Lubricating grease, engine oil	***Fig. 10***	Grease the pins after removing the wheels
Handlebar contact surface with handlebar holder	At least 2x	yes	Lubricating grease	***Fig. 1***	
Guide wheel locking pin	1x weekly	yes	Lubricating grease	***Fig. 9***	
Tensioner pulley arm pin, shift lever on gearbox	At least 2x	yes	Lubricating grease, engine oil		
Brake lever mounting at the front pulley (after removing the plastic belt cover)	At least 2x	yes	Engine oil		

Table 6: Lubrication intervals

1.5.2 Tightening screw connections

Check all important screw connections regularly for tightness. Before each use of the machine, always check the tightening of the screws securing the blade to the blade holder and also the blade holder to the drive shaft ***Fig. 12.***

Tighten the bolts securing the blade to the specified tightening torque - see description *Fig. 12*!

When replacing screws, use only original spare parts supplied by the manufacturer!

The central screw M10x1x25 has a fine thread, therefore it must not be confused with the outer screws with a normal thread!

1.5.3 Replacing and sharpening the blade

The machine must be standing on a solid base and secured such that it allows good access to the blade and spontaneous movement of the machine does not occur.

Take particular care when removing the blade. The blades edges are sharp. Protect hands with work gloves.

The engine must be switched off and the spark plug lead removed!

The replacement procedure is as follows (always work with an assistant):

- Loosen and remove the outer screws **4**. Then loosen and unscrew the center screw **3** and remove the blade **2** and the blade holder **1** from the blade shaft.
- Align and sharpen the edges. The inclination of the sharpened edge should be 25 ° in relation to the lower plane of the blade. The blade must be well balanced even after sharpening, so be sure to remove the material evenly when sharpening on both edges.
- Install the blade and the blade holder back on the blade shaft in reverse order.

The central screw M10x1x25 has a fine thread, therefore it must not be confused with the outer screws with a normal thread!

New spring washers must always be used under the screws (see spare parts list).

On the thread of the central screw M10x1x25, apply a thread-securing adhesive (eg. LOCTITE 243)!

Tighten the bolts to the specified tightening torque.

If excessive vibration occurs on the handlebars of the machine after mounting, it is essential to rebalance the blade!

In case of any unprofessional repair or modification of the blades without the use of original spare parts, the manufacturer is not liable for damages caused by the machine.

1.5.4 Replacing the V-belts and adjusting the tension pulleys

1.5.4.1 Replacing the V-belts

Replace the V-belt with a new one[23] whenever cracks or tears appear on the surface of the belt, and also when the belt is worn out by the operation up to the supporting fibers, or after a maximum of 200 hours of operation. The maximum elongation of the blade drive belt in this machine is considered to be that which has a distance between the inner surfaces of the belt (when the mower blade clutch lever is depressed) of less than 7 mm.

Marking of recommended, manufacturer-approved, V-belts on the machine:

Gearbox drive V-belt	PIX-Lawn Master 4L230K
Blade drive V-belt	OPTIBELT TX17x1290 Ld VU6K

If a belt other than the original spare part is used, the machine manufacturer does not guarantee the full and correct function of the transmission!

The procedure for replacing V-belts is as follows:

- Drain the petrol from the engine tank. Remove the plastic ball on the accelerator lever. Remove the accelerator lever from the handlebar rail. **Under no circumstances remove the bowden cable from the motor control!** Then remove (or fold back) the handlebar mount (4x M8x16 screw) with the handlebars.
- Remove the transmission upper cover.
- Remove the belt guide in front of the front driven blade pulley.
- Remove the belts from the driven pulleys (leave the belts on the engine). Unscrew the four M8x16 bolts from the engine plate and carefully pull up the engine together with the engine plate and remove the belts from the machine.

Never place the engine on its side. Oil could flow into the exhaust or air cleaner. Lay it with the lower flange preferably on two beams at least 10 cm high.

- Replace worn belts with new ones. We recommend replacing both belts at the same time.
- Assemble the machine in the reverse order of operations. Before mounting the covers, check the adjustment of both tension pulleys.
- Complete the assembly of the machine.

1.5.4.2 Adjusting the tension pulleys

- **Blade drive tension pulley:** When the lever on the right handle is fully depressed, the pulley must sufficiently tension the belt (the spring on the cable must be extended by about 10 mm compared to the free state). If necessary, adjust using the adjusting screw. With the lever off, the pulley must be tilted from the longitudinal axis of the machine in the range of 0 ° to 5 ° (maximum) = the back of the belt about 1.5-2 cm from the bottom of the tensioner pulley. The cable in the bowden cable of the tensioner pulley must be free of play. If the adjusting screw is fully unscrewed and the V-belt needs to be tensioned, the spring on the cable can be hooked into the front hole on the tensioner pulley arm (this connection can be used from the manufacturer) and the belt tension can be readjusted. The guide plates on the right side of the machine must be parallel to the belt and at a maximum distance of 1-2 mm from the belt back.
- **Wheel drive tension pulley:** When the lever on the left handle is fully depressed, the pulley must sufficiently tension the belt (the spring on the cable must be extended by about 10 mm compared to the free state). If necessary, adjust using the adjusting screw. With the lever off, the pulley must be parallel to the longitudinal axis of the machine. The cable in the bowden cable of the tensioner pulley must be free of play. If the adjusting screw is fully unscrewed and the V-belt needs to be tensioned, the spring on the cable can be hooked into the front hole on the tensioner pulley arm (note: this connection can be used at the factory) and the belt tension can be readjusted.

1.5.4.3 Adjusting the cables

The list of bowden cables and the description in ***Fig. 13***

To ensure low actuating forces on the actuator switching levers, lubricate the cables in the bowden cables at least twice a season with one of the oils in the sprayer (eg SILKAL, MD Spray, WD40). The correct adjustment of the drive controls is also necessary for the correct function of the machine.

- The cable of the blade brake **2** must always have a slight play (approx. 1 mm) when the lever is released so that the brake brakes sufficiently. In order to achieve the cable clearance in the bowden cable, the adjusting screw must be screwed into the chassis during adjustment.
- The cable of the blade pulley **3** and the cable of the wheel drive **1** must be free of play, slightly tensioned. To tighten the cables, the adjusting screws must be unscrewed from the chassis when adjusting.
- After adjusting the cable of the switchboard **6**, the cable end of the switchboard cable **8** must be located approx. 5 mm from the upper end of the cable switchboard **7**. The ends of the blade brake cable **2** and blade pulley cable **3** must be in the switchboard cable end **8** after adjustment. If one of the cables is free, the blade drive will not work properly ***Fig. 13***.

23 *Use only the belt recommended by the manufacturer. When using a belt from other manufacturers, proper transmission function cannot be guaranteed.*

- Adjust the wheel lock cable **4** so that when the cutting height adjustment lever **1** in ***Fig. 9*** is pressed, the locking pin **2** in ***Fig. 9*** drives into the housing of the machine chassis. In order for the locking pin to slide into the housing, the adjusting screw must be unscrewed from the chassis when adjusting.
- The brake cable **5** must be free of play, slightly taut. To tighten the cable, the adjusting screw must be unscrewed from the chassis when adjusting.

For all adjusting screws, use two No. 13 open-end spanners (M8 nuts) to tighten the lock nuts. If it is no longer possible to use the step of the adjusting screws, the hook on the cable can be moved to another hole on the arm of the tensioner pulley or the brake key so that the preload of the cables can be adjusted again with the adjusting screw.

1.5.5 Servicing intervals

Activity	Before use	During the season	Before storing
Check the engine oil level	yes	every 32 hrs	yes
Clean the engine air filter	yes	every 32 hrs	yes
Blade inspection - fastening and integrity	yes	-	yes
Check the condition and tension of the V-belt	yes	-	yes
Cleaning the machine from dirt	-	always after work	yes
Lubrication	inspect condition	***Table 6***	***Table 6***

Table 7: Servicing intervals

1.5.6 Problems and their solutions

Problem	Cause	Solution
The blade does not turn	The tensioner pulley does not tension the belt sufficiently	Adjust the tensioner pulley using the adjusting screw
	Dropped cable from the tensioner pulley lever	Put the cable back
	The V-belt fell behind the tensioner pulley or from the pulley	Put the V-belt back
	The V-belt has broken	Replace it
	Excessive belt elongation	Replace it
The blade brake does not brake sufficiently	The brake cable is tensioned	Lanko nastavte tak, aby při vypnuté páčce na pravém rukojeti lanko brzdy mělo vůli cca 1 mm
	The brake key lever is insufficiently lubricated - scrapes	Lubricate
	The lining is worn	Contact the nearest service center
The wheel drive does not turn off	Incorrectly adjusted control cable The V-belt carries	Adjust the pulley cutout so that the V-belt does not carry at maximum engine speed
The wheel drive does not turn on	Broken cable or some cable end	Replace it. Contact the nearest service center
	Broken belt	Replace it
	Other transmission fault	Contact the nearest service center
Gear shifting does not work	Shift lever fault	Contact the nearest service center
	Other transmission fault	Contact the nearest service center

Table 8: Problems and their solutions

1.5.7 Storage

When storing for extended periods (e.g. after a season), clean the machine from all impurities and plant remnants. Prevent access of unauthorized persons to the machine. Protect the machine against weather influences, but do not use air-tight protection due to increased corrosion.

We recommend, in particular:

- Preserve the blade and unpainted machine parts
- Remove all dirt and plant residues from the machine.
- Repair damaged areas on painted parts.
- Perform post-season lubrication of the machine, see ***Table 6***.

1.5.7.1 Washing and cleaning the machine

When cleaning and washing the machine, follow all valid provisions and laws for protecting streams and other water resources from pollution or contamination by chemicals.

Never wash the engine using a stream of water! The engine electrical equipment could be damaged when starting.

After the season, remove all dirt and plant debris from the machine. Check the integrity of the working blades, sharpen the cutting edges (or replace the blade if necessary) and preserve them with preservative oil. Once a season, remove the wheels from the axle, clean them and fill the inside of the hub with a new grease.

1.5.8 Disposing of packaging and the machine after service life

After unpacking the machine, you are obligated to dispose of packaging according to national laws and waste handling regulations.

We recommend that you follow the procedure below when disposing of the machine after the service life has been reached:

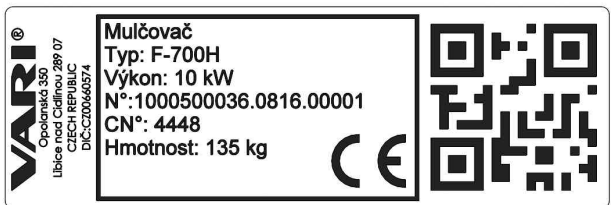
- Disassemble all of the parts from the machine that can be reused.
- Drain the engine and gearbox oil into a suitable closed container and submit to the waste collection site[24].
- Remove plastic and non-ferrous metal parts.
- Dispose of the disassembled remainder of the machine and parts according to national laws and waste disposal regulations.

1.5.9 Directions for ordering replacement parts

This manual does not include a list of replacement parts.

To properly identify your machine, you must know your Model (**Typ**), serial number (**№**), and order number (**CN№**) specified on the index plate, the box, or on the warranty card. Only after knowing this information will you be ensured of receiving the correct replacement part from your retailer.

To search for replacement parts in the electronic catalogue of replacement parts at **http://katalognd.vari.cz**, you only need the first 10 characters of your serial number (**№**). PIf you do not have internet access, you can ask to have a printed catalogue sent to you C.O.D.



Field	Description
Typ	Machine type: ***F-700H***
№	Unique manufacturing serial number: ***1000500003.0516.00001*** (product.period.order)
CN№	Retail (order) number: ***4448***

Table 9: Index plate - example

1.6 Manufacturer's address

VARI, a.s.
Opolanská 350
289 07 Libice nad Cidlinou
Czech Republic

Phone: (+420) 325 607 111
Fax: (+420) 325 607 264
E-mail: vari@vari.cz

http://www.vari.cz
http://katalognd.vari.cz

24 *The repository location is provided by respective local authorities.*

2 CZ Obrázky SK Obrázky EN Pictures RU Рисунки PL Rysunky

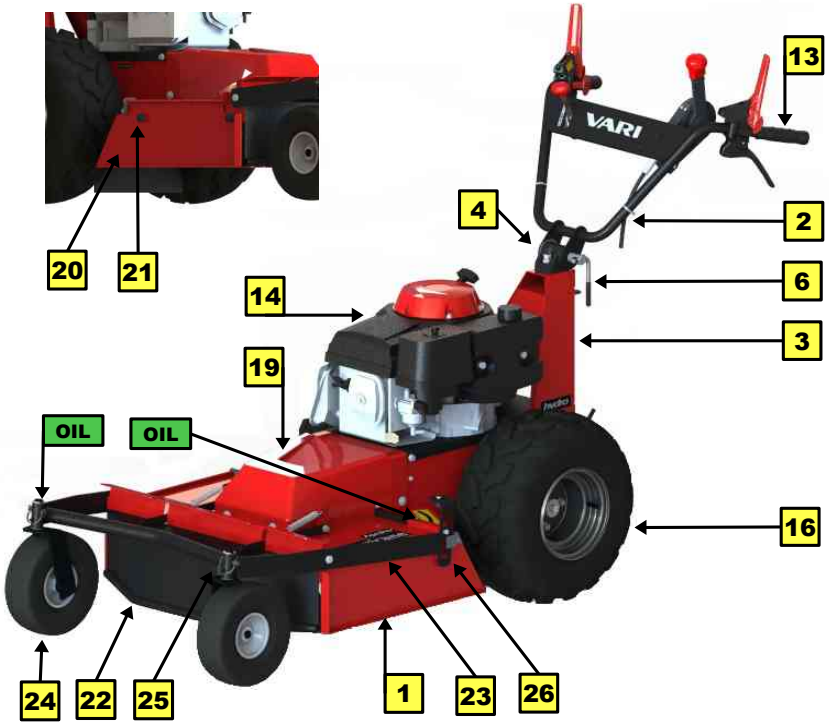


Fig. 1: Description of the machine main parts

Pohled z místa obsluhy

1	Frame	7	Wheel drive lever	12	Accelerator lever	18	Gearbox cover	24	Front wheels
2	Handlebars	8	Cutting height adjustment lever	13	Hand grip	19	V-belt cover	25	Cotter pin
3	Handlebar holder	9	Gear shifting lever	14	Engine	20	Side flap	26	Cutting height adjustment lock
4	Swivel joint	10	Blade drive lever	15	Gearbox	21	Side flap nut	27	Bumper
5	Handlebar locking lever	11	Service brake lever	16	Travel wheels	22	Front cover		
6	Tightening nut			17	Bypass lever	23	Front wheel frame		

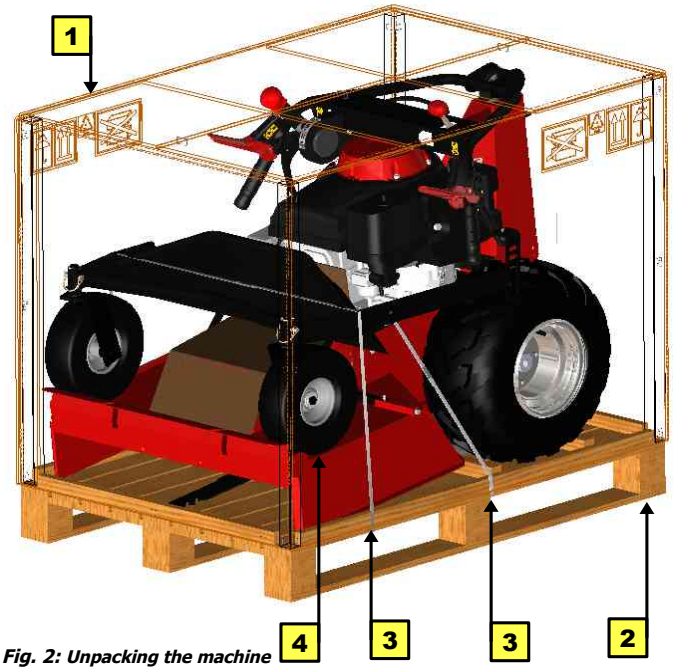
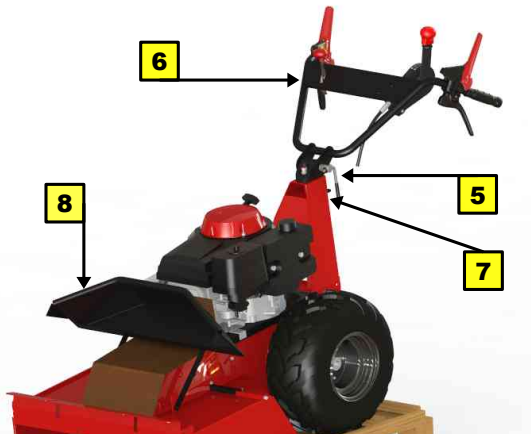


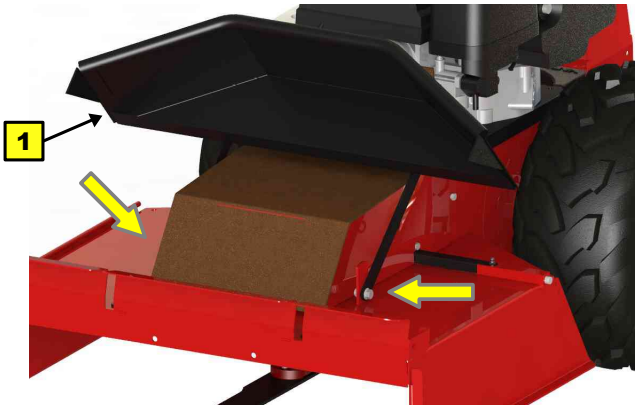
Fig. 2: Unpacking the machine



1	Carton box	8	Front cover
2	Pallet	9	Bag with parts – it is stapled to the pallet between the wheels
3	Binding tape		
4	Front wheels		
5	Tightening nut		
6	Handlebars		
7	Handlebar locking lever		

Fig. 3: Assembling the machine

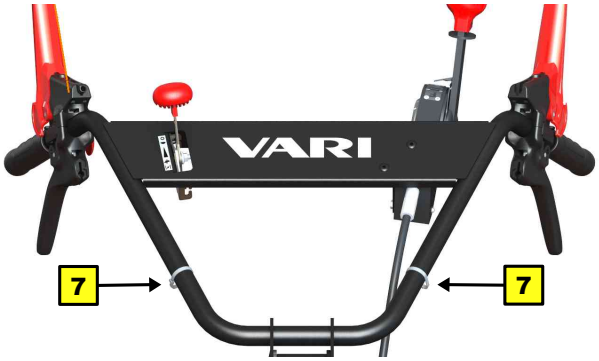
> 1



> 2

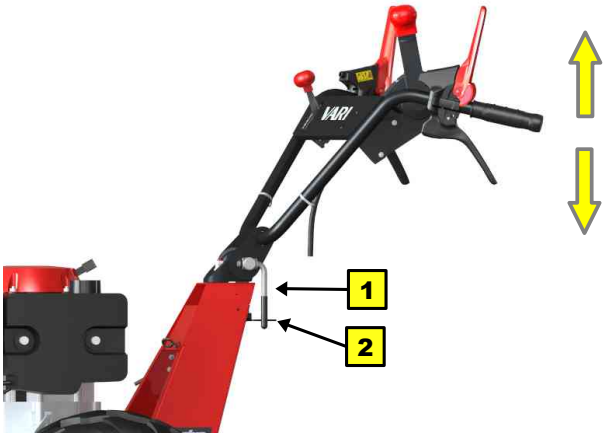
> 3

> 4



Front view

1	Front cover	5	Flat washer 10,5
2	Spring	6	Locking nut M10
3	Front wheels	7	Binding tape
4	Bolt		



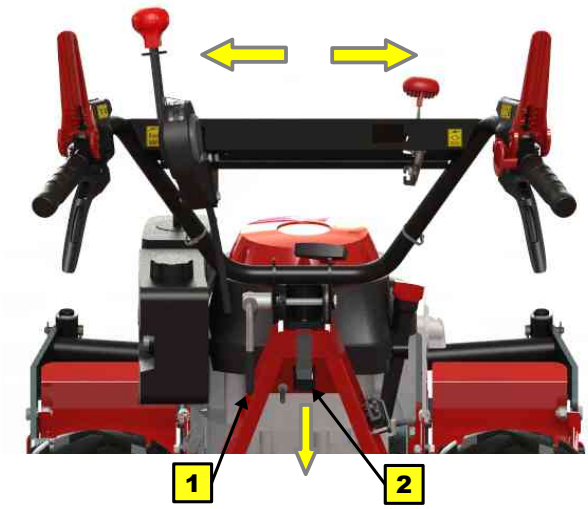


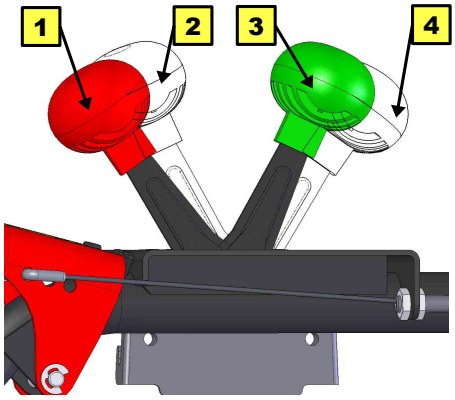
Fig. 4: Handlebar adjustment

1 STOP
The engine is off.

- Used for turning off a started engine
- Putting aside the machine
- Fuel refilling
- Machine transport

3 MAX
Engine is running at maximum rpm. (hare position)

- Operating position



2 MIN
The engine is idling. (turtle position)

- Short-term work rest

4 CHOKE
Engine runs on choke.

- Engine cold start

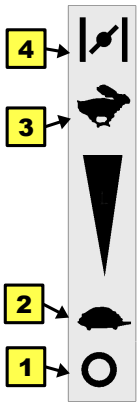
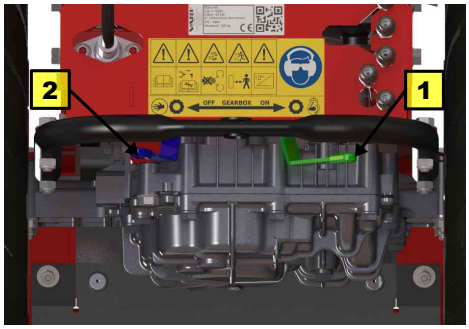


Fig. 5: Accelerator lever positions

Fig. 6: Blade drive lever



1 ON
Gearbox on – travel with engine started.

- Operating position

2 OFF
Gearbox off – travel with engine off.

- Manual pushing of the machine

Fig. 7: Gearbox – bypass lever

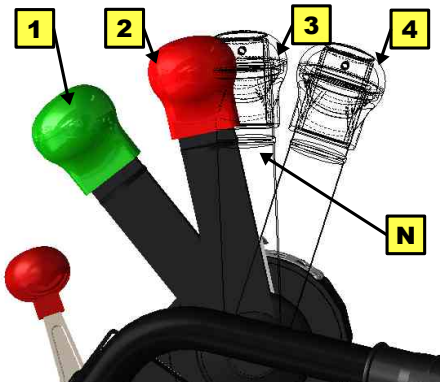
1 MAX
Maximum travel speed

- Intended for transporting the machine.
- Between positions **1** and **2**, the speed is continuously adjustable

3 NEUTRAL

- Engine starting

N Neutral lock - Raise the lock collar toward the ball to shift forward or backward



2 MIN
Minimum travel speed

- Tall and dense vegetation
- Suitable for steep slopes
- Cutting shrubbery and self-seeding woody plants
- Between positions **1** and **2**, the speed is continuously adjustable

4 REVERSE
Drive backwards

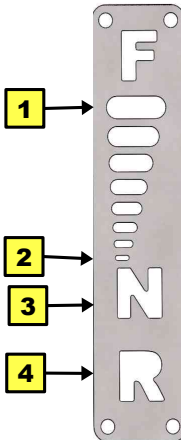


Fig. 8: Gear shifting lever positions

1 Cutting height adjustment lever
2 Locking pin
3 Locking plate

MIN Minimum cutting height
MAX Maximum cutting height

Fig. 9: Cutting height adjustment

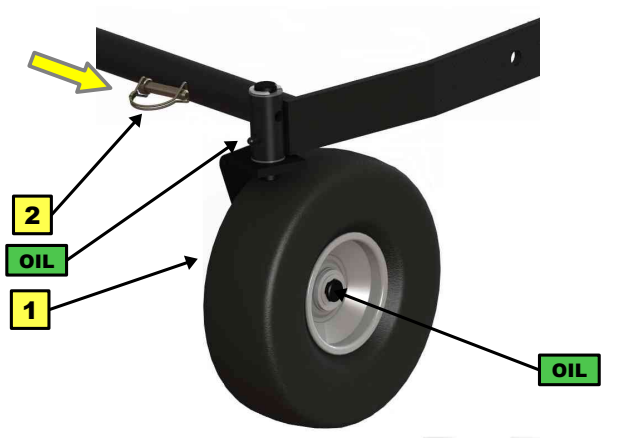


Fig. 10: Front wheel locking

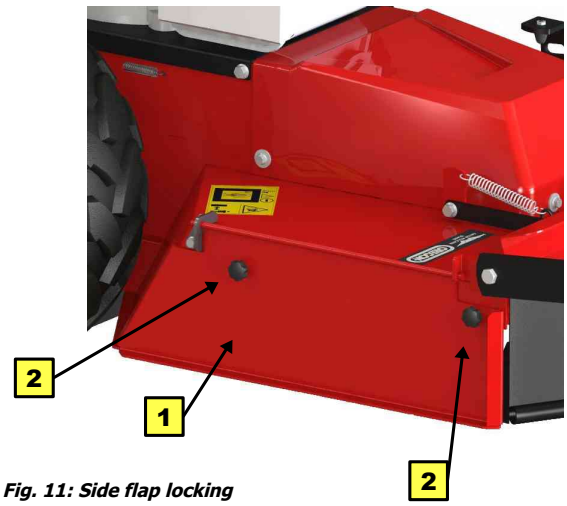
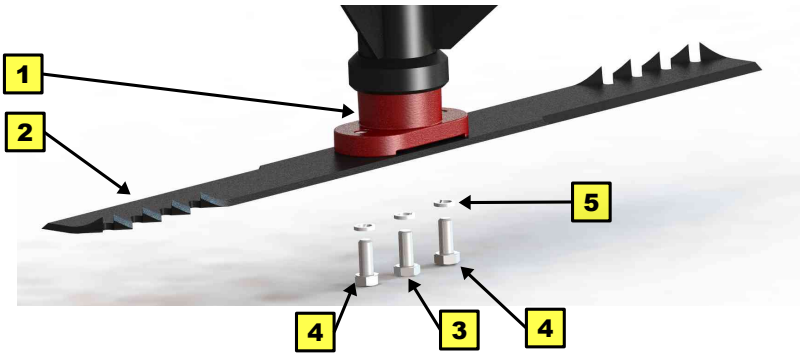
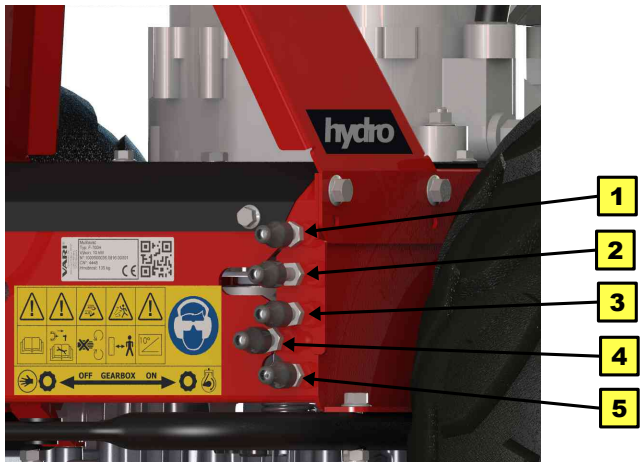


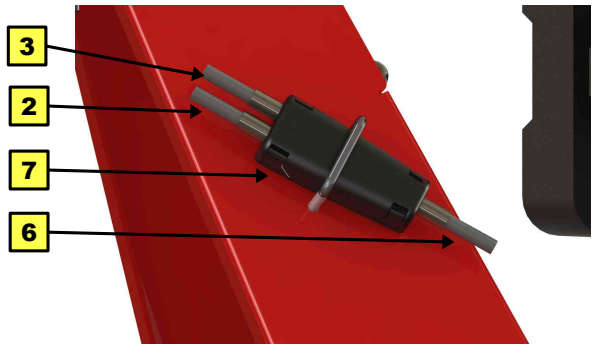
Fig. 11: Side flap locking



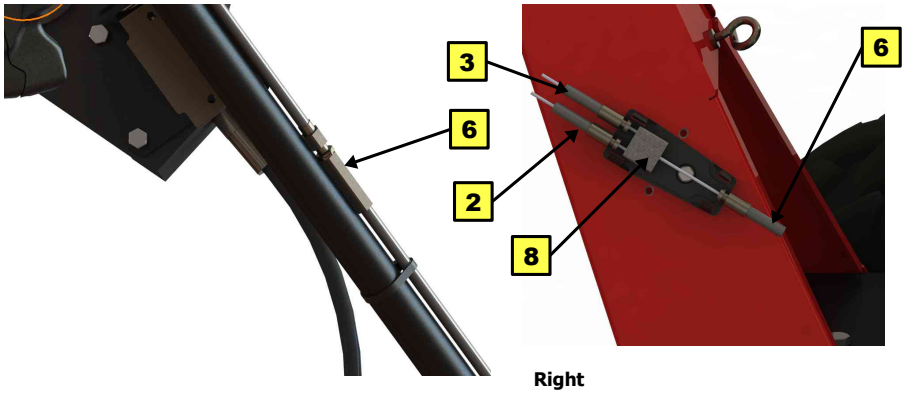
1 Blade holder
2 Blade
3 Bolt M10x1x25 – tightening torque **38** Nm
4 Bolt M10x25 – tightening torque **48** Nm
5 Spring washer 10

Fig. 12: Blade attachment





1 Wheel drive cable
2 Blade brake cable
3 Blade drive cable
4 Wheel lock cable
5 Brake cable
6 Switchboard cable
7 Cable switchboard
8 Switchboard cable end



Right

Wrong

Fig. 13: Cables adjustment bolts

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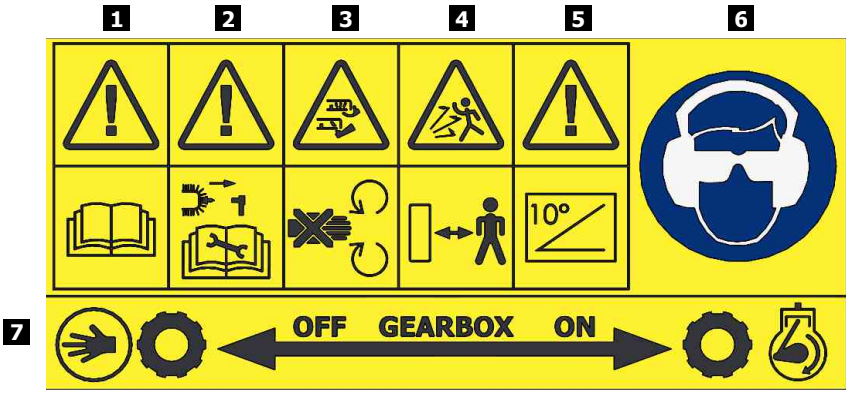

Fig. 14: Safety pictograms – rear side of the machine

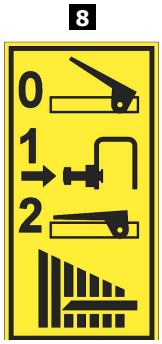

Fig. 15: Safety pictograms – right side of the handlebars

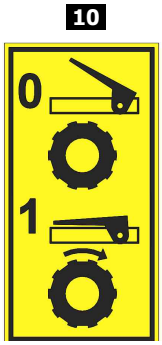

Fig. 16: Safety pictograms – left side of the handlebars

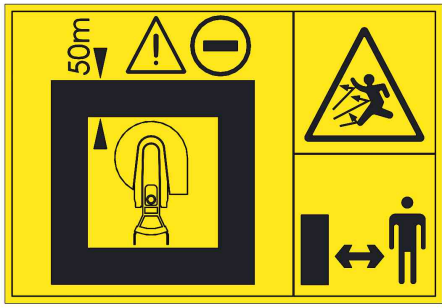

Fig. 17: Safety pictograms – blade cover

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