

VARI®

CB-800

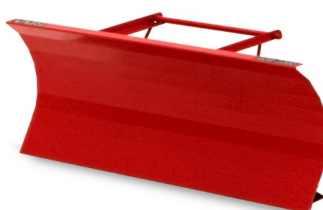
CB-1000

Kartáč zametací / Brush sweeper / Kehrbürste / Zametacia metla / Zamiatarka

CB-800



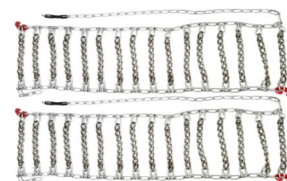
OR-80



BS-80



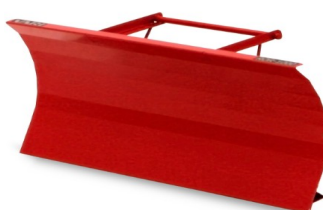
AP-100



CB-1000



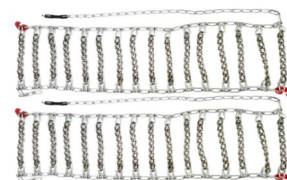
ROR-1000



BS-100



AP-100



CZ Česky - původní návod k používání

EN English – translation of the original instructions for use

DE Deutsch – Übersetzung der Originalbedienungsanleitung

SK Slovensky – preklad pôvodného návodu na použitie

PL Język polski - tłumaczenie oryginalnej instrukcji obsługi

CZ Elektronickou verzi tohoto návodu najdete na našich webových stránkách **www.vari.cz** v kartě tohoto produktu nebo v části Návody k používání. Doporučujeme stáhnout si jej do svého počítače, telefonu nebo tabletu pro případ ztráty papírového návodu nebo v případě, že budete potřebovat větší zobrazení obrázků pro lepší pochopení.

EN An electronic version of this manual can be found on our website **www.vari.cz/en** in the product card or in the Instructions for Use section. We recommend that you download it to your computer, phone, or tablet in the event of loss of the paper manual, or if you need to enlarge the images to better understand.

DE Eine elektronische Version dieses Handbuchs finden Sie auf unserer Website **www.vari.cz/de** in der Produktkarte oder in der Sektion „Bedienungsanleitungen“. Wir empfehlen, dass Sie es auf Ihren Computer, Ihr Telefon oder Ihr Tablet herunterladen, falls Sie das Papierhandbuch verloren haben oder wenn Sie größere Bilder zum besseren Verständnis benötigen.

SK Elektronickú verziu tohto návodu nájdete na našich webových stránkach **www.vari.cz** v karte tohto produktu alebo v časti Návody na používanie. Odporúčame stiahnuť si ho do svojho počítača, telefónu alebo tabletu pre prípad straty papierového návodu alebo v prípade, že budete potrebovať väčšie zobrazenie obrázkov pre lepšie pochopenie.

PL Elektroniczną wersję tego podręcznika można znaleźć na naszej stronie internetowej **www.vari.cz** w karcie produktu lub w sekcji Instrukcje obsługi. Zalecamy pobranie go na komputer, telefon lub tablet w przypadku utraty podręcznika w wersji papierowej lub jeśli potrzebujesz powiększyć zdjęcia, aby lepiej zrozumieć.

CZ Obsah / EN Contents / DE Inhalt / SK Obsah / PL Treść

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CZ Základní informace

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

EN Basic information

i 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

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

SK Základné informácie

i O zostavenie stroja a inštruktáž, ako stroj používať, požiadajte predajcu ako súčasť predpredajného servisu!

PL Informacje podstawowe

i W ramach serwisu przedsprzedażowego poproś sprzedawcę o rozpakowanie urządzenia i wstępny inštruktaż obsługi urządzenia!

Typové označení Type Typ Typové označení Typ	CZ EN DE SK PL	CB-800	CB-1000	CZ Miesto pro nalepení identifikačního štítku: EN Stick the identification label here: DE Platz für die Identifikationsetikette: SK Miesto pre nalepenie identifikačného štítku: PL Miejsce na naklejkę identyfikacyjną:
Typ motoru Engine type Motortyp Typ motora Typ silnika	CZ EN DE SK PL	HONDA GCVx170		
Identifikační číslo ¹ Identification number ² Identifikationsnummer ³ Identifikačné číslo ⁴ Numer identyfikacyjny ⁵	CZ EN DE SK PL	10061 _ _ _ _ . _ _ _ . _ _ _ _		
Datum dodání – prodeje Delivery date - date of sale Liefer- / Verkaufsdatum Datum dodania – predaja Data dostawy - data sprzedaży	CZ EN DE SK PL			
Dodavatel (razítko) Supplier (stamp) Lieferant (Stempel) Dodávateľ (razítko) Dostawca (pieczęćka)	CZ EN DE SK PL			

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

i 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

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

i Odporučame Vám vyhotovit' si kópiu tejto stránky s vyplnenými údajmi o kúpe stroja pre prípad straty alebo krádeže originálu návodu.

i 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 Fill in the plate number from the name plate or stick the identification label.
 3 Ergänzen Sie die Nummer aus dem Typenschild oder kleben Sie die Identifikationsetikette auf.
 4 Doplňte číslo z výrobného štítku alebo nalepte identifikačný štítok.
 5 Wpisz numer z tabliczki znamionowej lub przyklej naklejkę identyfikacyjną.

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The manufacturer stipulates its right to implement technical changes and innovations not affecting the machine's operability and safety. These changes may not show in these Operating Instructions.

Typographical errors reserved. The figures in these Operating Instructions may not show the design of the machine, to which they were attached.

2.1 INTRODUCTION

Dear Customer/User!

Thank you for your confidence in purchasing our product. You have become the owner of a machine from the wide range of machinery and tools of the gardening, farming, small agricultural, and municipal technology offering made by VARI, a.s.

Sweeping brush **CB-800** or **CB-1000** uses proven components from the previous generation of VARI sweeping brushes **CB-80**, of drum mowers, and mulchers. It boasts the most compact dimensions on the market, excellent manoeuvrability, high sweeping performance, possibility of selecting between its two sweeping widths of 80 cm or 100 cm³⁶, and it can use a wide range of accessories³⁷.

Please read these operating instructions carefully. If you follow the instructions contained herein, our product will serve you reliably for many years.

Your VARI, a.s.

2.1.1 GENERAL NOTICE

You **must read** these operating instructions and follow all the machine operating instructions in order to prevent any health risks or property damage to the user or other persons.

The safety instructions specified in these operating instructions do not cover all the possible conditions and situations, which may occur in practice. Safety factors, such as a reasonable approach, care, and caution are not included in these operating instructions, but it is assumed that every person using the machine or doing any maintenance work on it is able to sufficiently use them.

Only mentally and physically fit persons may operate this machine. Should this machine be used commercially, the owner of the machine is bound to provide operators with work safety training and instruct them regarding its operation, and keep records of such training. **The owner must also implement so-called categorization of works per corresponding national legislation.**

If any piece of information contained in the Operating Instructions is unclear to you, please, contact **your distributor**³⁸ or directly the **machine manufacturer**³⁹.

Operating instructions provided with this machine form the integral part of it. They must be available at all times, stored at an accessible place where they cannot get destroyed. When selling the machine to another person, the operating instructions must be handed over to the new owner. The manufacturer bears no responsibility for the risks, hazards, accidents, or injuries resulting from operation of the machine if the above-mentioned conditions have not been met.

³⁶ To change the width, simply purchase the separately sold brushes for the given sweeping width of 80 cm or 100 cm.

³⁷ The accessories are not included in the machine, they must be purchased separately.

³⁸ Fill in the dealer's address in the table in the heading of this manual (unless already filled in by the dealer).

³⁹ For the address of the manufacturer, see the end of these operating instructions.

The manufacturer bears no responsibility for the damage caused by unauthorized use, inappropriate operation, and any damage caused by any modification of the machine without the manufacturer's approval and by using **spare parts that are not genuine**.

 Please request your machine set-up and training from your dealer as part of the pre-sales service.

2.2 OPERATIONAL SAFETY

The machine is designed to protect the operator as much as possible from any flying swept debris. Do not remove any passive or active security features. You would expose yourself to the risk of injury.

During work it is necessary to follow safety regulations to avoid any injury to yourself or other persons present nearby and to avoid any property damage. In the operating instructions, these instructions are marked by the following warning symbol:
























	If you see this symbol in the operating instructions, carefully read the statement following after it, please!
	This international safety symbol indicates important instructions concerning safety. When you see this symbol, be cautious. There is a danger of accident to you or other individuals. Carefully read through the following information.

Table 12: Symbols

2.2.1 SAFETY REGULATIONS

-  The machine operator must be over 18 years of age. **He is obliged** to familiarize himself/herself with the instructions for the use of the machine and to be familiar with the general principles of occupational safety.
-  When working, use approved work aids and close-fitting clothing, sturdy footwear, work gloves, and safety goggles.
-  Due to the increased dustiness when sweeping up solid dirt, use a suitable dust mask or respirator or per **ČSN EN 149:2001+A1:2009**.
-  Due to the assumption of working with the machine in reduced visibility (snow, fog, in daytime without sufficient light) and moving near public roads, wear clothing with reflective elements or use attachable reflective tapes etc.
-  Keep a safe distance from the machine given by the handlebar.
-  When working with the machine, all other people (**especially children**) and animals must stay outside the machine's work area. The operator may only continue working after they reach a **safe** distance.
-  **Before every use of the machine**, check the tightness of its screw connections. Check, whether any part (especially the working gear or its covering) is damaged or loose. **Identified defects must be immediately eliminated**. Use only original spare parts during repairs.
-  It is not allowed to use the machine in confined premises! Its exhaust gases contain toxic substances that can cause unconsciousness and death.
-  Take extra care when handling the machine. When the engine is turned off, the exhaust silencer remains hot. When filling the fuel make sure that no leak occurs and you do not spill the fuel over the engine parts. Otherwise, dry the affected parts or wait until the petrol evaporates.
-  The machine features its rotating working tool. The maximum tip speed is **4 m.s⁻¹**. Therefore, ensure that any other persons keep a safe distance when operating this machine (possibility of ejected solid objects flying away)!
-  It is forbidden to work with the machine on roads of all classes, except to drive perpendicularly over them only where permitted.
-  Only operate the machine in daylight.
-  The machine's **safe** slope accessibility is 10°. The maximum long-term tilt of the engine is 20° and short-term⁴⁰ one is 30°.
-  When using the machine on slippery surfaces (e.g. on the snow cover), always use quality winter footwear with an anti-skid pattern. When the risk of falling down is imminent, do not hold on to the machine and do not try to stop it.
-  Do not drive on frozen lakes, ponds, watercourses or other water bodies. Ice may break through. Use extra caution when working on slippery surfaces, especially if the slippery areas are covered with snow.
-  When the machine's travel is switched off, the machine may reverse sharply, due to the counter-rotation of its brushes. Therefore, always keep a sufficient clear space behind you, free of obstacles.
-  Always turn OFF the engine and wait for the work tool to stop before performing any work in the close vicinity of the machine! Always switch OFF the engine before leaving the machine!
-  It is forbidden to remove any protective devices and covers from the machines.
-  Any repairs, adjustments, lubrication, and cleaning of the machine must be carried out when the machine is at a standstill, and its spark plug connector is disconnected.
-  When working with lubricants and cleaning the machine, observe the basic hygiene regulations and observe the environmental protection regulations and laws.
-  Due to exceeding the recommended noise and vibration values, follow these instructions when working with the machine:

40 Short term = up to one minute.

- (a) Protect your hearing with ear muffs or earplugs. Request these aids from you distributor.
- (b) After the maximum of 20 minutes of work with your machine, take a break for at least 10 minutes. During these breaks, the respective operator must not be exposed to any other source of noise or vibrations.

2.2.2 NOISE AND VIBRATIONS LEVELS

Description	CB-800	CB-1000
Declared acoustic pressure emission level A at the operator's site ⁴¹ (L_{pAd})	(82+4) dB	(83+4) dB
Declared acoustic output level A ⁴² $L_{WA,d}$	(96+4) dB	(97+4) dB
Declared cumulative value of the acceleration of vibrations transmitted to the operator's hand-arm ⁴³ $a_{hv,d}$	(8.8+3.5) m.s⁻²	(9.7+3.9) m.s⁻²

Table 13: Measured Noise and Vibrations Levels

2.2.3 SAFETY PICTOGRAMS

The user is obliged to keep the pictograms on the machine in a readable state and, in case of any damage, ensure their replacement.



Position:	Number:	Description:
Combined sticker (Fig. 34), which is attached on the rear plastic cover.	1	Before using the machine, read through these Operating Instructions.
	2	When doing maintenance on the machine, disconnect the spark plug connector.
	3	Risk of being hit by flying debris, cuttings, ejected items, etc. Other persons and animals - keep a safe distance from the machine.
	4	During work observe the maximum permissible slope for operation.
	5	Use eye and hearing protection.
	6	Wear respiratory protection
Sticker (Fig. 37) on the control lever on the right handle.	-	Starting the working tool drive: 0 = working tool not moving 1 = working tool moving
Sticker (Fig. 36) on the control lever on the left handle.	-	Machine travel start: 0 = the machine is stationary 1 = The machine is moving

Table 14: Safety Pictograms


2.3 BASIC INFORMATION

2.3.1 USE OF THE MACHINE

Sweeping brush CB-800 or **CB-1000** is designed for the cleaning of flat artificial surfaces⁴⁴ with dirt or freshly fallen snow up to the height of 3 cm⁴⁵.

-  **It is forbidden to work with the machine on roads of all classes, except to drive perpendicularly over them only where permitted.**
-  **Before using the machine, always check that the bristles of the sweeping rollers do not damage the surface of the area to be swept!**

With a snow plough **OR-80** or **ROR-1000** it is possible to clear a freshly fallen snow layer with the height of up to 10 cm. For collecting dirt, we recommend using the **BS-80** or **BS-100** dump box, when working in areas where there is a risk of damage to property or injury to other people, we recommend using the AP-100 dust cover **AP-100**.

-  The aforementioned accessories are not included in the machine, they can be purchased separately.

-  **The use for purposes other than the intended purpose is; therefore, to be considered a use for an unspecified purpose!**

41 Measured per ČSN EN ISO 11201

42 Per ČSN EN ISO 3744

43 Measured per ČSN EN ISO 20643

44 For example, concrete or bituminous surfaces, concrete or granite paving, poured floors, etc.

45 Depending on the type of snow. During snow removal, a certain amount of snow can always get into the area behind the sweeping rollers on the surface to be cleaned. This condition is quite normal and does not give rise to a claim for malfunctioning of the machine.

2.3.1.1 TECHNICAL DATA

Description	Unit	CB-800	CB-1000	
Length x width x height (including the handlebars in the middle position)	mm	1,640 x 1,005 x 1,175		
Weight	kg	70	73	
Machine's maximum working width / brush diameter	mm / mm	800 / 370	1000/370	
Safe slope operation	∠	10°		
Travel speed	km.h ⁻¹	2,78 ; 3,53		
Machine's surface output ⁴⁶	m ² .h ⁻¹	2219 ; 2825	2773 ; 3,531	
Volume and grade of oil filling in the travel gearbox	l (litre)	API / SAE	0.04	GL-5 / 90H
Volume and grade of oil filling in the drive gearbox	l (litre)	API / SAE	0.125	GL-5 / 90H

Table 15: Technical data CB-800 /CB-1000

2.3.1.2 ENGINE INFORMATION

i Any additional information about the engine **not stated** here is available at the engine manufacturer's website.

Engine	Unit	CB-800	CB-1000
Type	-	HONDA GCVx170 N2EWSD ^{47 48}	
Maximum (set) engine speed	min ⁻¹	3,200 ± 100	
Maximum (short term ⁴⁹) engine tilting	∠	20° / 30°	
Fuel tank capacity	l (litre)	0.91 ⁵⁰	
Fuel	petrol	Oct. No. 91-95 ⁵¹	
Engine oil filling	l (litre)	0.4	
Oil grade	SAE / API	Summer operation: SAE 30 / SJ or SH Winter operation: SAE 0W-30 / SJ or SH	

Table 16: Basic details of the engine


2.3.2 DESCRIPTION OF THE MACHINE AND ITS PARTS

1 Machine frame	6 Left wheel	11 Front cover	16 Fuel tank cap
2 Handlebars with control levers	7 Right wheel	12 Rear cover	17 Oil dipstick
3 Engine	8 Brush rotation lever	13 Fenders	18 Air filter
4 Support wheel	9 Pressure adjustment control knob	14 Handlebar clamp nut	19 Exhaust silencer
5 Brushes	10 Guide rails for accessories	15 Starter	

Table 17: Legend to Fig. 1

2.4 OPERATING INSTRUCTIONS

2.4.1 GRIPPING POINTS

- The gripping points for manual lifting are marked with the hand symbol  - Fig. 2 B:

- ▶ at the rear of the machine, tubular handlebar holder
- ▶ at the front of the machine beam in the engine plate

2.4.2 MACHINE TRANSPORT

! When transporting the machine in a car or other road vehicle, always secure the machine against any unexpected movement with certified lashing straps.

- Always flip and lock the handlebars in the transport and parking position - see **Chap.2.4.3.1 Handlebar adjustment** on page 27.
- Always place the machine with its front end (= brushes) in or across the direction of travel of the vehicle.
- The binding points are (straps are shown by thick lines in **Fig. 2 B**):
 - ▶ at the rear of the machine, tubular handlebar holder
 - ▶ at the front of the machine support wheel

46 When the sweeping rollers are set to the middle position, when the machine's sweeping stroke is maximised as shown in the table.

47 For more information about the engine, including the spare parts numbers, go to www.honda-engines-eu.com

48 Engine type designation may change. Please refer to the engine block for the current engine type specification designation.

49 Short term - up to one minute.

50 Measured per new standard **Society of Automotive Engineers (SAE) J 349**

51 With regard to the ever increasing ratio of BIO-components in fuel, use fuel stabilizer.

- ▶ eye on the left on the engine plate

2.4.3 MACHINE CONTROL ELEMENTS

2.4.3.1 HANDLEBAR ADJUSTMENT

Fig. 2 **A** HEIGHT ADJUSTMENT:

⚠ Only adjust the handlebar positions when the machine is stationary, and its engine is switched off. There is the risk of losing control of your machine!

- Loosen and completely unscrew the plastic wing screw **1**, remove the flat washer **2**.
- Pull out the bolt to the left **3** from the handlebar handles **4**.
- Adjust the height of the handlebars above the ground so that the handlebars are comfortable to hold. You can choose from a total of 6 positions - three holes **A** in the handlebar handles **4** and two holes **B** in the tubular handlebar holder **5**.
- Insert the bolt **3** from the left into both ends of the handlebar handles **4**, place the flat washer on the bolt **2**, screw in the plastic wing bolt **1** and tighten it securely.

Fig. 2 **B** PARKING AND TRANSPORT HANDLEBAR POSITION:

- Loosen and unscrew the plastic wing screw **1** by about 1 cm.
- Flip the handlebars towards the engine, the right handlebar should have a small gap from the engine oil dipstick.
- Carefully tighten the plastic wing bolt **1**.

2.4.3.2 LEVER FOR THE BRUSH LOWERING PULLEY

To switch the brush drive on and off, use lever **1** (in *Fig. 3*), located on the right handle.

⚠ The lever must be always entirely pressed towards the handle, otherwise the clutch slip may occur.

⚠ It is forbidden to remove accumulated snow that prevents the drive from starting smoothly by starting the brushes via controlled belt slip. First, clear the brush area, and only then continue in your work.

⚠ Release the control lever as quickly as possible whenever the drive starts slipping.

i The brush start may be accompanied with partial slipping of the V-belt and associated side phenomena (rattling, whistling). When the belt has been run in, these effects usually disappear.

⚠ Do not hold or slow down the lever during its movement back to the default position. Always release the lever quickly.

- For the procedure for starting and stopping the brush drive, see *Chap.2.5.4 Brush drive* on *page 29*.

2.4.3.3 WHEEL DRIVE PULLEY LEVER

- To switch the machine's travel on and off, use lever **2** (in *Fig. 3*), located on the left handlebar.

⚠ The lever must be always entirely pressed towards the handle, otherwise the clutch slip may occur.

⚠ Do not adjust the speed of the machine, e.g., by partially depressing the travel lever - this causes increased wear on the belt.

⚠ When the machine's travel is switched off, the machine may reverse sharply due to the counter-rotation of its brushes. Therefore, always keep a sufficient clear space behind you, free of obstacles.

- For the procedure for lowering the brushes, see *Chap.2.5.5 Machine travel* on *page 29*.

2.4.3.4 ADJUSTING THE ANGLE OF THE BRUSHES

- To adjust the brushes sideways, use the long lever **3** (in *Fig. 3*), located in the machine's axis.

⚠ Always switch off the brush drive and the machine travel before changing the sideways brush setting.

- For the procedure for adjusting the brushes sideways, see *Chap.2.5.9 Rotating the sweeping rollers axis* on *page 30*.

2.4.3.5 ADJUSTING THE BRUSH PRESSURE

- To adjust the brush pressure, use the plastic control knob **4** (in *Fig. 3*) protruding from the front plastic cover.
- When you have finished working with the machine (e.g. when parking or storing the machine), always extend the support wheel so that the brush bristles do not touch the mat and are about 1-2 cm away from it. This prevents deformation of the bristle ends.
- For the procedure for adjusting the brush pressure, see *Chap.2.5.8 Setting the pressure of the sweeping rollers* on *page 30*.

2.4.3.6 ACCELERATOR LEVER

The main positions of the lever are locked in place by a simple push-pull system in the lever body. The accelerator lever positions (**1**=STOP, **2**=MIN, **3**=MAX and **4**=CHOKE) are described in *Fig. 7*.

2.4.4 RECOMMENDATIONS FOR THE WINTER OPERATION OF THE MACHINE

2.4.4.1 OPERATION OF THE ENGINE

Air filter: we recommend to take out the air filter insert. It will prevent the air filter from freezing. **CAUTION:** this applies only for the engine operation in the dust-free environment!

Engine oil: replace the oil fill with fully synthetic engine oil, e.g., **SAE 5W-30/API SE** or higher.

Spark plug: we recommend using spark plug **NGK BPR4ES**, the original Ord. No. HONDA is **98079-54846**.

2.4.4.2 MACHINE OPERATION

- Before the winter season, thoroughly lubricate Bowden cables with oil repelling water and damp. This will prevent difficult operation and possible freezing of the Bowden cable.
- Always clean the machine thoroughly of adhering snow after your work. In particular, this must be done before you store the machine in a tempered area and use it, for example, only the next day. Moisture inside the machine from melted snow could freeze when the machine is used again in freezing weather and make it difficult to use again.
- If you have used your machine to clear away snow treated with some de-icing agent (e.g., industrial salt), wash the machine immediately after work (e.g., with a pressure washer - but be careful of the electrical equipment of the motor!), air dry it (e.g., with a garden blower), lubricate the areas per **Table 20** and park it in a heated area.

2.4.4.3 STORAGE

- Do not store the machine in an environment where the temperature drops below 0°C. A heated garage or warehouse is more suitable.
- Before starting the engine of a machine that has been stored at temperatures below -5°C, first let the machine warm up in a tempered area.
- When operated in the conditions with the temperatures below -5° C, we recommend the following:
 - (a) Allow the engine to run until it has warmed up sufficiently before starting actual work on the machine.
 - (b) Seal the cooling air intake holes in the engine cover with self-adhesive tape. The engine will then warm up more quickly and it will be more thermally stable during the work.

2.5 OPERATING INSTRUCTIONS

2.5.1 FIRST COMMISSIONING

i **First, carefully read the Operating Instructions⁵² for the use of the engine! You will prevent the damage of the engine.**

1. Check the engine oil level from production, top up/fill the engine with its prescribed type and amount of oil.
2. Fill the tank with the prescribed quantity and type of petrol.
3. The travel gearbox and sweeper roller drive gearbox are already filled with oil by the manufacturer⁵³.

2.5.2 BEFORE EVERY USE

! **Before each use of the machine, check the tightening of the elements securing the brushes as well as all connections of the protective elements, all the covers, and engine!**

1. Check the oil level in the engine⁵⁴ and air filter cleanliness.
2. Check the tyre pressure.

i Different tire pressures cause the machine to turn to the side of the wheel with the lower tire pressure.

3. Check that both control levers return to the starting position reliably. This should be checked especially in the winter if the machine has been parked or stored in an unheated area for a long time.

2.5.3 ENGINE STARTING

• Positions **1=STOP**, **2=MIN**, **3=MAX** and **4=CHOKE** of the accelerator lever are described in **Fig. 7**. All four of the main positions described are locked by a simple, protruding system in the lever body.

! **When starting the engine, both control levers (1 and 2 in Fig. 3) in the off position - must not be pressed against the handles!**

1. Move the accelerator lever to its position:
 - (a) Cold engine **4=CHOKE**
 - (b) Warm engine **3=MAX**
2. Start the engine by pulling on the hand starter cord⁵⁵.
3. Allow the new or cold engine to run for about 15 seconds on the choke (accelerator lever in position **4 CHOKE**), then move the accelerator lever to position **2 MIN**. If the engine is cold, let it warm up for about 1 minute.

! **Do not move away from the machine!**

⁵² The original Operating Instructions for the engine are supplied with the machine.

⁵³ Please, familiarise yourself with the required oil change intervals in Chapter 2.7.3.2 Gearbox oil change on page 34.

⁵⁴ Refer to the Engine Operating Instructions.

⁵⁵ The engine startup instructions are described in detail in the engine operating instructions.

2.5.4 BRUSH DRIVE

⚠️ Make sure all the persons, children, and animals are located at a SAFE distance from the machine! Otherwise, do not continue in any future activity!

⚠️ Check for any solid obstacles in the area behind you.

- To start and stop the travel, use the **brush drive pulley lever 1** (in *Fig. 3*) on the right handle.

2.5.4.1 BRUSH DRIVE START

- Set the maximum engine speed with the **accelerator lever 5** (in *Fig. 3*).
- Grab the left handle of the handlebar with your left hand.
- Press the control lever on the right handle in a smooth, slow motion with your right hand.

⚠️ Beware of sudden reverse movement of the machine caused by counter-rotation of the brushes.

- Once the brushes start rotating, squeeze the lever and hold it and the handle firmly.

⚠️ Always press the clutch lever up to the handlebar handle. If the lever is not fully pressed, the V-belt gets damaged.

i With a new or cold engine, the first few times the brush drive is started, the engine may stall. When the engine has warmed up, this will no longer happen. If the brush drive cannot be started even after the engine has warmed up, check for any of the faults in **Chap.2.7.8.4 Troubleshooting** on **page 37**.

i Brush starting may be accompanied with partial slipping of the V-belt and associated accompanying phenomena (rattling, whistling). When the belt has been run in, these effects usually disappear.

i If the problem persists, it is necessary to adjust the belt tension - see **Chap.2.7.7.3 Brush drive pulley adjustment** on **page 36**.

2.5.4.2 SWITCHING OFF THE BRUSH DRIVE

- The brush drive switches off after you release the lever on the right handle.

⚠️ Never use your hand stop the reverse movement of the lever!

⚠️ Always switch off the engine before carrying out any work near the machine.

i Never leave the engine running at maximum speed or idling for a long time with the brush drive switched off! Parts of the drive train (V-belt, belt pulley, tensioning pulley, etc.) may get damaged!

2.5.5 MACHINE TRAVEL

⚠️ Make sure all the persons, children, and animals are located at a SAFE distance from the machine! Otherwise, do not continue in any future activity!

i The travel clutch is a belt clutch, the machine starts smoothly, without jerking.

- To switch on and off the machine travel, use the **travel pulley lever 2** (in *Fig. 3*) on the left handle.

2.5.5.1 STARTING

- Push the lever to the handle, and the machine will immediately move forward.
- Once you press the lever and the machine starts moving forward, adjust your walking speed to the machine speed!

⚠️ Always press the travel clutch lever all the way to the handlebar handle. If the lever is not fully pressed, the V-belt gets damaged.

⚠️ Never use the travel lever to adjust the travel speed! The V-belt gets damaged.

2.5.5.2 STOPPING

⚠️ Beware of sudden reverse movement of the machine caused by counter-rotation of the working tool when the machine is switched off.

- The machine stops only after you release the lever on the left handle.

⚠️ Never use your hand stop the reverse movement of the lever!

⚠️ Always switch off the engine before carrying out any work near the machine.

i Never leave the engine running at maximum speed or idling for a long time with the brush drive switched off! Parts of the drive train (V-belt, belt pulley, tensioning pulley, etc.) may get damaged!

2.5.6 TRAVEL SPEED SELECTION

- The machine has two travel speeds.
- **Slower** (belt mounted per **Fig. 5**) is suitable for dirt removal. This speed is set at the factory.
- **Faster** (belt mounted per **Fig. 6**) is suitable for snow or leaves removal.
- The speed is changed by moving the V-belt on the pulleys between the gearbox and the axle (see **Fig. 5** and **Fig. 6**). A sticker is attached to the top cover of the gearbox showing the positions of the belt in the pulleys on the gearbox and on the axle (see **Fig. 8**).

⚠ When changing speeds, the engine must always be switched OFF and the throttle in its **1 STOP position!**

1. **Loosen the plastic nut **1**** (in **Fig. 7**)⁵⁶, **pull the gearbox top cover **2**** in the arrow direction, diagonally backwards.
2. Remove the retaining **cotter pin **3**** in the **lower gearbox cover **4****.
3. Push on the **lower gearbox cover foot **5****, the cover will release and pop out from the **lower gearbox cover retainer **4**** in the frame.
4. Insert your index finger into the hole in the lower cover, slide the cover down towards the ground.
5. Remove the V-belt from its pulley **6** (in **Fig. 5** or **Fig. 6**) on the axle, towards the left wheel. Then slide the V-belt out of pulley **7** (in **Fig. 5** or **Fig. 6**) on the gearbox towards the right wheel.
6. Slide the V-belt into the pulley keyway **6** (in **Fig. 5** or **Fig. 6**) on the axle matching the selected gear. Check visually and by touch that the belt fits correctly in the groove in the selected pulley.
7. Slide the V-belt into the pulley keyway **7** (in **Fig. 5** or **Fig. 6**) on the gearbox matching the selected gear. Check visually and by touch that the belt fits correctly in the right pulleys per the selected gear (see **Fig. 5** and **Fig. 6**). The belt must not cross!
8. **Fit the top gearbox cover **2**** diagonally under the engine plate, snap it on and tighten the plastic nut.
9. **Slide the lower gearbox cover **5**** upwards and insert the **foot of the lower gearbox cover **5**** into the **holder of the gearbox lower cover **4****. Insert the retaining **cotter pin **3**** into the hole in the **holder of the lower gearbox cover **4****.

2.5.7 WHEEL IDLE FUNCTION

- **Fig. 9** The wheels can be disconnected from their drive by removing the pin **1** with its retaining ring **2** from one wheel. Only one wheel is then engaged and the machine can be turned very easily.

i Keep in mind that the machine turns ("pulls") on the side where the pin has been removed from the wheel with the parameters set in this way.

2.5.8 SETTING THE PRESSURE OF THE SWEEPING ROLLERS

⚠ When the bristle pressure is increased, the reverse movement of the machine is significantly more intense when the machine travel is switched off and the brush drive is switched on. Therefore, take care for personal safety, especially in areas with insufficient space behind you.

i Always set the bristle pressure on a level, solid surface.

- To adjust the brush pressure, use the plastic control knob **4** in **Fig. 3**, protruding from the front plastic cover.
- By turning the control knob **clockwise** (i.e. to the right), the support wheel retracts into the frame, **increasing** the brush pressure (in **Fig. 10** it is marked as **F+**).
- By turning the control knob **counter-clockwise** (i.e. to the left), the support wheel extrudes from the frame, the brush pressure **decreases** (in **Fig. 10** it is marked as **F-**).

SETTING:

1. Set the brushes to the central position **0°** - see **Chap. 2.5.9 Rotating the sweeping rollers axis on page 30** and in **Fig. 12**
 2. Turn the control knob **4** to set the support wheel first, so it barely touches the ground.
 3. Turn the control knob **4** to set the right pressure:
 - (a) for dirt or leaves, lying loose on the surface, freshly fallen snow – turn **4 turns** to the right. The wheel is about 2 mm above the ground.
 - (b) for dirt firmly staying on the surface (e.g., mud or wet leaves), wet or compacted snow – turn **8 turns** to the right. The wheel is about 4 mm above the ground.
- If dirt or snow remains on the surface, you can increase the bristle pressure by turning the control knob further to the right to improve the machine's performance.

i Excessively high bristle pressure results in poor machine control and shortened brush life.

i When you have finished working with the machine (e.g., when parking or storing the machine), always extend the support wheel so that the brush bristles do not touch the mat and are about 2cm. This prevents deformation of the bristle ends.

2.5.9 ROTATING THE SWEEPING ROLLERS AXIS

- To adjust the brushes sideways, use the long lever **5** in **Fig. 3**, located in the machine's axis.

⁵⁶ Loosen the plastic nut with about 1 to 2 turns. There is a groove in the cover that allows the cover to be removed without unscrewing the plastic nut.

- The lock allows for a total of 5 positions for rotating the brushes – see **Fig. 12**.

! Always switch off the brush drive and the machine travel before changing the sideways brush setting.

17. Apply pressure to the handle to lighten the front of the machine.
18. Raise the **swivel lever 1**, until the **lever tube 2** slides out from the **locking groove 3**.
19. Push the lever sideways to tilt the sweeping rollers **4** by the desired angle.
20. Release the lever so that it fits into the appropriate locking groove.

2.5.10 REMOVING DIRT

- Select the **slower** travel speed for better cleaning of the area (see **Chap. 2.5.6 Travel Speed Selection** on **page 30** and in **Fig. 5**).
- Always proceed in strips over the area to be cleaned.
- Do not continue cleaning the area if a large amount of dirt has accumulated:
 - (a) The sweeping rollers will start to shift dirt into the area behind the sweeping rollers; or
 - (b) leave a trail in the area under the gearbox.
- Remove dirt from the area into a suitably sized container or other storage area (e.g. trailer bed, container, etc.).

! Always observe the local waste handling regulations. Dirt from surfaces does not belong in the municipal waste stream, but in areas designated by the local authority for the disposal of hazardous waste.

- Always sweep dirt without using a collection box with the brushes turned sideways (see **Chap. 2.5.9 Rotating the sweeping rollers axis** on **page 30** and **Fig. 12**). Choose the position according to which side you wish to push the dirt away. For small amounts of dirt, choose the first sideways position - **15°L** or **15°R**. For greater amounts of dirt, always choose the extreme position - **30°L** or **30°R**.
- When sweeping dirt away from kerbs, set the middle position of the sweeping rollers - **0°** (see **Chap. 2.5.9 Rotating the sweeping rollers axis** on **page 30** and in **Fig. 12**) and slightly increase the bristle pressure (see **Chap. 2.5.8 Setting the pressure of the sweeping rollers** on **page 30** and in **Fig. 12**).
- Due to the assumption of a big amount of dirt, do not proceed in excessively long stretches, interrupting the cleaning periodically when:
 - !** The sweeping rollers will start to shift dirt into the area behind the sweeping rollers; or
 - !** leave a trail in the area under the gearbox.
- When sweeping using the collection box on open areas, use the central position of the sweeping rollers – **0°** (see **Chap. 2.5.9 Rotating the sweeping rollers axis** on **page 30** and in **Fig. 12**), you will use the maximum sweeping width of the machine.
- When sweeping with the collection box at walls, use the first sweeping roller rotation position - **15°L** or **15°R**.
- Stop cleaning the area and empty the contents of the collection box when:
 - (a) the area behind the sweeping rollers is not completely clean or
 - (b) the sweeping rollers will start to shift dirt into the area behind the sweeping rollers; or
 - (c) leave a trail in the area under the gearbox.

2.5.11 SNOW REMOVAL

- The sweeping brush is only intended for clearing freshly fallen snow during/after "normal" non-calamitous snowfall or for cleaning areas with melting snow. The type of bristles used does not allow the removal of trampled snow, icy or frozen snow.
 - i** It is always recommended to clear snow with an additional snow plough **OR-80**⁵⁷ or **ROR-1000**⁵⁸, which can also clear freshly fallen snow up to 10 cm. Use **snow chains** as well.
 - i** Please also read carefully the chapter on **2.4.4 Recommendations for the Winter Operation of the Machine** on **page 28**.
- Select the **faster** travel speed (see **Chap. 2.5.6 Travel Speed Selection** on **page 30** and in **Fig. 6**) for better sideways snow removal dynamics with the plough and thus a better clearing of the area.
- Adjust the bristle pressure according to **Chap. 2.5.8 Setting the pressure of the sweeping rollers** on **page 30** and in **Fig. 12**.
- Snow must be **always** swept with the sweeping rollers turned sideways (see **Chap. 2.5.9 Rotating the sweeping rollers axis** on **page 30** and in **Fig. 12**).
- Select the position according to which side you wish to push the dirt away:
 - (a) For small amounts of snow, choose the first sideways position - **15°L** or **15°R**.
 - (b) for small amounts of snow, choose the first sideways position - **30°L** or **30°R**.
 - (c) When using the **OR-80** snow plough or **ROR-1000** always use the extreme positions - **30°L** or **30°R**, the snow slides better sideways on the plough.
- Always proceed in strips over the area to be cleaned.
- If a big amount of snow accumulates, do not continue clearing the area, when:
 - (a) the sweeping rollers start to shift the snow into the area behind the sweeping rollers; or

⁵⁷ Separate accessories available for purchase, not included in the basic equipment of the machine!

⁵⁸ Separate accessories available for purchase, not included in the basic equipment of the machine!

- (b) the area behind the sweeping rollers is not completely clean⁵⁹ or
- (c) The sideways snow clearance exceeds the machine's performance capabilities.

Remove any accumulated snow from the area by some other means to a suitable location.

2.6 ACCESSORIES

 **Connect any accessories only when the engine is off!**

- The current ordering numbers of the accessories⁶⁰ designed for this machine are available at www.vari.cz, <http://katalognd.vari.cz/> or via a printed catalogue.

2.6.1 COLLECTION BOXES BS-80 OR BS-100

Fig. 13 - applies to **BS-80** and **BS-100**

1. Grab the collection box by its handle **1** at the front of the frame.
2. Insert **2** the pins on the collection box frame into both guide rails **3** in the sweeper roller support plate. The collection box is in the vertical position.
3. Fold the collecting box into the horizontal position. The rubber strip **4** on the top of the plastic container of the collection box must fit between the fender **5** and brushes **6**.

 If the bottom rubber strip is folded forward when the collection box is folded, this is not a fault. When the machine is started, it will spontaneously swivel to the correct position.

2.6.1.1 CONTROLS

Fig. 14 - applies only to **BS-80**

- By pulling on the central part of the lifting handle (in the direction of arrow **1**) lift the collection box to the vertical position, the dirt will be emptied from the box.

Fig. 14 - applies only to **BS-100**

- Lift the collection box to the vertical position by pulling the middle part of the handle on the collection (in the arrow direction **1**), the dirt is emptied from the box.

2.6.1.2 TRANSPORT POSITION

- The collection box can also be transported over shorter distances when lifted vertically.

 **Transporting the collection box in its raised position is only possible after the box has been thoroughly cleaned of dirt!**

Fig. 15 - applies to **BS-80** and **BS-100**

1. Grab the handle **1** in **Fig. 13** and fold the collection box to its vertical position.
2. Lift the collection box upwards and slide the cross tube behind the stops **1** in **Fig. 15** on the guide rails on the support plate

2.6.2 SWEEPING BLADE OR-80 OR ROR-1000

2.6.2.1 ATTACHING


Fig. 16

1. Grab the plough by its two longitudinal brackets **1**.
2. Slide the guide pins into both guide rails **2** in the sweeper roller support plate.
3. Lift the plough upwards, slide the reaction strut **3** into the space between the sweeping rollers.
4. By lowering the plough and rotating the strut upwards at the same time, the strut is pushed all the way in - fork **4** on the reaction strut rests on the gearbox and reinforcements of the support plate.
5. The plough mounting is designed as floating. After mounting it on the machine, check that the plough moves freely in the vertical direction.

2.6.2.2 USE

 **When moving around solid obstacles (kerbs, building walls, etc.), ensure that there is no contact with the plough. The machine could get damaged!**

- When using sweeping plough **OR-80** or **ROR-1000** always use the extreme sweeping roller pivot positions - (see **Chap. 2.5.9 Rotating the sweeping rollers axis** on **page 30** and in **Fig. 12**). The snow slides more easily sideways on the plough.
- The snow plough removes a higher layer of snow that the sweeping rollers would otherwise not be able to sweep away. A layer of snow about 2 cm high remains on the surface of the area, which is thrown by the rollers into the space behind the plough and sideways.

 Swept snow may stick to the rear of the plough. This is not a functional fault. Clean this area manually from time to time.

⁵⁹ During snow removal, a certain amount of snow can always get into the area behind the sweeping rollers on the surface to be cleaned. This condition is quite normal and does not give rise to a claim for malfunctioning of the machine.


⁶⁰ Accessories can be purchased, they are not included in the basic equipment of the machine.

2.6.3 ANTI-DUST SHEET AP-100

- The anti-dust sheet is adjustable in width for both machine variants. To adjust its width, refer to the instructions for using the anti-dust sheet.

2.6.3.1 FITTING


Fig. 17

- Grab the sheet at the points marked .
- Slide the lower **1** and upper **2** pins into the guide rails **3** and lower down to the stop. Correct position of the pins: upper pins **2** are resting on the front part of the guide rails **3**, the lower pins **1** are resting on the rear part of the guide rails **3**.

2.6.4 SNOW CHAINS

- Snow chains significantly increase the grip of the machine on a snow cover. Therefore, we recommend that you always use them when sweeping snow.
- Fitting and attaching snow chains is not very different from fitting snow chains to car wheels.
- The rungs of the snow chains fit into the gaps between the projections of the tyre tread. The number of chain rungs is one quarter the number of rungs in the tyre tread; when fitting the chains to the tyre, leave **three empty gaps** in the tyre tread – see **Fig. 18**.
- Check the chains after a few dozen metres and, if necessary, tighten the tensioning chain.


2.7 MAINTENANCE, CARE, STORAGE

 **Before each use of the machine, check the tightness of its bolted connections. Replace the lost screwed connections with the original parts that are designed for the given spot. Use of non-original parts of poor quality will expose you to risk of injury or damage to the machine!**

 **Owing to the weight of the machine, all the maintenance and adjustment shall be performed by two people.**

- To secure a long-term satisfaction with our product, it is necessary to provide it with due care and maintenance. By providing regular maintenance you will prevent its rapid wear and you will secure correct operation of all its parts.
- Observe all instructions concerning maintenance and adjusting intervals. We recommend that you keep records of operating hours and the conditions under which the machine is used (these may be useful for servicing centres). We recommend that you have the post-season maintenance implemented by one of our authorized service centres; the same applies to standard maintenance if you are not certain of your technical capabilities.

 The good help to monitor operating hours is the **VARI PowerMeter** device. This accessories can be bought with every dealer of VARI products.

 Due to the high proportion of BIO components in the fuels, we strongly recommend that you drain all the fuel from the carburettor before each shutdown of the machine - close the fuel valve and let the engine run until it switches off spontaneously.

2.7.1 RECOMMENDED TOOLS AND ACCESSORIES

For the assembling and maintenance of your machine, we recommend the following tools and accessories⁶¹ - **Fig. 38** on page **105**.

TOOLS	ACCESSORIES
Spanner No. 10 mm - 2x	Petrol can, capacity 5 litres - Ord. No. 3562
Side eyelet wrench curved No. 15 mm - 1x	HONDA fuel stabiliser - Ord. No. 08CXZ-FSC-250
Curved ratchet 3/8" + socket 15 mm + extension - 1x	Briggs & Stratton Fuel Fit™ fuel stabiliser - Ord. No. 992381
Spark plug wrench 21 mm - 1x	Hour meter VARI POWERMETER - Ord. No. 4227
Flat screwdriver	

Table 18: Recommended Tools and Accessories

⁶¹ The tools and accessories are not included in the delivery of the machine, they must be purchased separately.

2.7.2 SERVICING INTERVALS

Activity	Prior to every use	During the season	Before prolonged storage
Checking engine oil level	Yes	Per the engine operating instructions	We recommend changing the oil fill
Engine air filter cleaning	Check	Every 10 hours ⁵²	Yes
Tyre pressure check	Yes	As needed	Yes, inflate to the maximum pressure
Washing	As needed	As needed	Yes
Checking tightening of screwed connections	Yes	Every 5 hours	Yes
Oil in the brush drive gearbox	-	After the first 5 hours, then after every 100 hours	We recommend changing the oil fill
Check of the condition and tension of the V-belts	-	After the first 5 hours, then after every 20 hours	Yes


Table 19: Servicing intervals

2.7.3 MACHINE LUBRICATION

 **When working with lubricants, observe the basic hygiene regulations and observe the environmental protection regulations and laws.**

 For trouble-free and easy movement of all mechanical parts, pay sufficient attention to lubrication.

2.7.3.1 ENGINE OIL CHANGE

 If you are not sufficiently manually skilled, have the operations done by an authorised service centre.

- Follow the engine operating instructions for the type, quantity, and method of engine oil changing.
- When draining oil out of the engine, tilt the machine to the side where the oil spout is fitted or disassemble the entire engine, including the engine plate.
- **Standard interval** of oil change, specified by the engine manufacturer, **reduce it by half**. Dirt sweeping always generates a big amount of dust particles.

2.7.3.2 GEARBOX OIL CHANGE

- The gearboxes are filled with oil with the volume and specifications per **15**.
- The travel gearbox has a lifetime oil fill. If any oil leak is detected, contact the nearest authorised service centre.
- Change interval for the drive gearbox per **19**.
- To access the oil plug of the drive gearbox, it is necessary to remove both brushes-see **Chap. 2.7.5 Brush change on page 35 and in Fig. 27**.
- Change oil when the gearbox is warmed up to its operating temperature.
- Start the engine, close the fuel valve on the engine, and allow the engine to run until it shuts down from lack of fuel.
- Remove the oil plug and pour the old oil into a prepared container by tilting the machine forward.
- Fill the gearbox with fresh oil - do not overfill!

2.7.3.3 LUBRICATION POINTS




- Of the commonly sold oils, any spray oil is suitable for lubrication. When selecting plastic lubricants (grease) any lubricant intended for water pump lubrication is sufficient. However, its application usually requires the dismantling of the corresponding slide assembly. We also recommend the use of so-called "white spray petroleum jelly", it flows well into the gaps and does not lose its lubricating properties in the long term.
- There is no need to remove any covers from the machine to lubricate the bowden cables on the handlebar. The other lubrication points may be reached after removing the plastic covers.

62 In the event of a very dusty environment, the check and cleaning should be done every hour!


Lubrication point - description	Interval within season	After season	Lubricant	Figure	Note
Bowden cables	At least 2x (5 drops)	Yes	Oil	Fig. 22 Fig. 23	Cable entry to all the Bowdens
Drive pulley	Every 20 hours (2 drops)	Yes	Oil/lubricating grease	Fig. 20	Arm housing
Travel clutch pulley	Every 20 hours (2 drops)	Yes	Oil/lubricating grease	Fig. 21	Frame contact surface
Sweeper roller gearbox mount	-	Yes	Oil/lubricating grease	Fig. 24	
Wheel extraction control	After every machine washing	Yes	Spray grease	Fig. 25	Thread end and sliding washer
Support wheel	After every machine washing	Yes	Spray grease	Fig. 26	All the fork and wheel bearings
Handlebars - mounting	-	Yes	Lubricating grease	Fig. 19	Screw connection

Table 20: Lubrication intervals

2.7.4 TYRE PRESSURE

- Keep the same pressure in the left and right wheels – the machine better holds a straight track.
- Adjust tire pressure to MAX before shutting down the machine for long periods of time **MAX**.
-  **Do not exceed the maximum tyre pressure – there is a risk of the tyre explosion!**
-  **If the pressure in the tyre is low, the inflation valve on the tube may get cut off.**
- **MAX**imum (recommended) tyre pressure: **20 PSI (137 kPa or 1.38 bar or 1.36 atm or 0.138 MPa)**
- **MIN**imum⁶³ permissible tyre pressure: **18 PSI (124.1 kPa or 1.24 bar or 1.22 atm or 0.124 MPa)**
- If there is a permanent tyre pressure leakage, make sure that there is no defect on the tyre tube – repair it if necessary.
-  If you are not sufficiently manually skilled, have the operations done by an authorised tyre service centre.

2.7.5 BRUSH CHANGE

- The minimum diameter limit when the brushes are already worn out, is **26 cm**.
-  **Always replace both brushes**, even if only one of them is damaged. Different diameters result in poor sweeping function.
- **Fig. 27** shows a label **OUTSIDE** and **INSIDE**, the right orientation of the brushes in relation to the brush drive:
 - (a) Brushes for the 80 cm width of the **CB-800** machine must face the **drive** of the brushes with the additional bristles among the spirals
 - (b) Brushes for the 100 cm width of the **CB-1000** machine must face outwards through their deeper cavity in the brush plastic tube
- 1. Secure the machine against movement. Adjust the support wheel to the highest position, so that there is a gap of about 2 cm from the ground under the bristles.
- 2. Unscrew the **two M10 nuts 1** on the carrier bolt.
- 3. Slide the brushes **2** out of the carriers **3**.
- 4. Remove the metal washers **4** from the brush cavity.
- 5. Slide new brushes **3** onto the brush carriers **2**.
- 6. Insert both metal washers **4** into the brush cavity. Screw on both M10 nuts **1** and tighten them.
- 7. Adjust the bristle pressure per **Chap. 2.5.8 Setting the pressure of the sweeping rollers** on page **30**.

2.7.6 CHANGING THE MACHINE'S SWEEPING WIDTH

- The machine design allows you to change the brush sweeping width to a wider or narrower width, depending on the machine version you have selected and purchased.
- The current ordering numbers of brushes for both sweeping widths are available at www.vari.cz, <http://katalognd.vari.cz/> or in our printed catalogue.
 1. Disassemble the brushes according to the procedure in **Chap. 2.7.5 Brush change** on page **35** (items 1 to 3) and in **Fig. 27**.
 2. Following **Fig. 32** Remove the screw connections of both fenders. Move the fenders into the holes towards/away from the machine's longitudinal axis **Fig. 31**.
 3. Fit the brushes according to the procedure in **Chap. 2.7.5 Brush change** on page **35** (items 4 to 7) and in **Fig. 27**.
 4. Move the lever extension with handle **1** during conversion to **CB-800** towards the front and during conversion to **CB-1000** towards the rear.

⁶³ If the tyre pressure is lower than the minimum, the tyre-casing structure will be damaged and the service life will be significantly reduced.

2.7.7 BELT GEARS

- The factory setting of the tensioning pulleys must be checked after the first approximately 5 hours of operation when the belt is breaking in. During breaking in, it is necessary to check the function of the tensioning pulleys to prevent the tensioning pulley from being damaged due to the extension of the belt to its damage.
- Replace the belt if cracks or tears appear on the belt surface.

2.7.7.1 BELT GEARS TEST

i If you are not sufficiently manually skilled, have this operation done by an authorised service centre.

- If one of the following tests fails, the tensioning pulleys must be adjusted:
 1. The machine with its travel turned ON has to overcome the terrain inequality of 10 cm high - for example, a curb is suitable.
 2. A belt starts drifting (= brushes are spinning) already in the first 1/4 step of the clutch lever of the work tool drive.

i Markings **A** and **B** in *Fig. 28* are common and always belong to the same Bowden.

2.7.7.2 TRAVEL PULLEY ADJUSTMENT

i If you are not sufficiently manually skilled, have this operation done by an authorised service centre.

1. Remove the rear upper plastic **gearbox cover 2** (in *Fig. 7*), so you can see both belts ensuring the machine's forward travel. Try again to overcome the terrain inequality and visually check which belt is slipping.
2. **If the belt is slipping on the right side of the machine** (*Fig. 5* or *Fig. 6*), tighten it by unscrewing the screw on Bowden **B** in *Fig. 28* in the direction of the arrow (away from the frame or handlebar crossbar) by 1 to two turns. Continue tensioning until the machine overcomes some uneven terrain and simultaneously does not start moving forward when the travel clutch lever is released. If the bolt on Bowden **B** can no longer be unscrewed, screw it in completely against the direction of the arrow and hook the spring at the end of the cable into the far hole in the pulley arm. Then repeat the steps to tighten the belt.
3. **If the belt slips between the engine and gearbox**, tighten it with its tensioning pulley (**1** in *Fig. 28*). Release the tensioning pulley by releasing the nut **2** located on the motor plate and tension the pulley in the direction of the arrow, using a suitable tool (such as a screwdriver). Once tensioned, tighten the nut. Then check the correct travel operation.

i As soon as you cannot adjust the tensioning pulleys, so that the belt does not slip, the belt must be replaced.

2.7.7.3 BRUSH DRIVE PULLEY ADJUSTMENT

1. Remove the front **plastic cover 11** in *Fig. 1*, so you can see the drive belt and pulley of the brushes (**4** in *Fig. 29*).
2. **Tighten the belt by unscrewing** the screw on Bowden **A** in *Fig. 28* in the direction of the arrow (away from the frame or handlebar crossbar) by 1 to two turns. Check the operation of the brush drive clutch. Continue tightening until the belt drive begins to spin the brushes at approximately 1/3 of the lever travel. Simultaneously, **the belt drive must not spontaneously** when the brush drive clutch lever is switched off.

2.7.8 CHANGING THE V-BELTS

- Replace the V-belt with a new one⁶⁴ every time cracks or cracks appear on the surface of the belt and also when the belt is worn sufficiently by the operation that it can no longer be tensioned with its tensioning pulleys.

i If you are not sufficiently manually skilled, have this operation done by an authorised service centre.

i Observe the belt path around all the guide elements per *Fig. 29*!

2.7.8.1 CHANGING THE BRUSH DRIVE V-BELT

1. Fully extend the support wheel by turning **the pressure adjustment control knob 9** in *Fig. 1* to the **left**. Pull the support wheel downwards out of the frame.
2. Unscrew the two M6 screws on the caliper of **the pressure adjustment control knob 9** in *Fig. 1*.
3. Remove **the front plastic cover 11** in *Fig. 1*
4. Remove the brush drive belt **1** in *Fig. 29* from the pulleys and rollers and replace it with a new one.
5. Fit **the front plastic cover 11** in *Fig. 1*. Insert **the pressure adjustment control knob** into the support wheel housing and screw the caliper on with the two M6 screws.
6. Slide the support wheel from the bottom into the frame. Screw **the pressure adjustment control knob** into the support wheel by turning it to the **right**.

2.7.8.2 CHANGING THE GEARBOX DRIVE V-BELT

1. Remove the front plastic cover **10** in *Fig. 1*
2. Remove both rear plastic covers **2** and **5** in *Fig. 7* (see *Chap. 2.5.6 Travel Speed Selection* on page 30, *item 1*).
3. Remove the brush drive V-belt **1** in *Fig. 29* from the drive pulley on the engine.
4. Loosen tensioning pulley **1** on the engine plate – *Fig. 28*.
5. Gearbox drive belt **2** in *Fig. 7*. Remove the **29** from the pulleys and replace it with a new one.
6. Tension and tighten the belt tensioner **1** in *Fig. 28*.
7. Reinstall the V-belt of the brush drive **1** in *Fig. 29* and reinstall both covers **2** and **5** in *Fig. 7*.

⁶⁴ Use exclusively original spare parts. If you use belts from other manufacturers, proper operation of the drive cannot be guaranteed.

2.7.8.3 REPLACING THE AXLE DRIVE V-BELT

i Due to the weight of the machine, carry out the replacement with the assistance of another person to support the machine after the removal of its wheels and axle.

1. Remove both rear plastic covers **2** and **5** in **Fig. 7** (see **Chap.2.5.6 Travel Speed Selection** on page **30**, **item 1**).

Then per **Fig. 30**:

2. Remove the axle drive V-belt **7** from the axle pulleys and gearbox pulleys and slide it towards the left side of the machine.
3. Remove both wheels **1** and **2** from the axle **3**.
4. Remove the metal sheet axle covers **4L 4P** – M6 screws. Pull the cover **4L** out of the hook of connecting bar **5**.
5. Remove the nuts **6** securing the bearing housings on both sides of the axle **3** and lower it.
6. Remove the V-belt **7** and fit a new one.
7. Secure the axle back to the frame; place the left axle sheet metal cover on the hook of the connecting bar and bolt both covers to the frame; fit and secure both wheels on the axle per **Fig. 9**; fit the belt on both pulleys per **Chap.2.5.6 Travel Speed Selection** on page **30**; reinstall both plastic covers **2** and **5** in **Fig. 7**.
8. Adjust the travel pulley per the procedure in **Chap.2.7.7.2 Travel pulley adjustment** on page **36**.

2.7.8.4 TROUBLESHOOTING

Problem	Cause	Solution
The engine will not start	The petrol supply line is closed	Open the petrol supply line
	Non-functional choke	Visit a service facility
	Other defect	Visit a service facility
The work tool will not rotate	Insufficient belt tension	Adjust the tension pulley
	Torn belt	Replace the belt
	The belt has come off	Re-mount the belt
	Other defect	Visit a service facility
The machine is not moving	Insufficient belt tension	Adjust both the tension pulleys
	Torn belt	Replace the belt
	The belt has come off	Re-mount the belt
	Dropped upper gearbox pulley carrier bolt	Fit a new pulley bolt
	Other defect	Visit a service facility
Stop the machine or brush rotation	The tension pulley does not return back to its position	Lubricate
	The inner bowden cable is stiff; bent bowden cable	Lubricate or replace the bowden cable
	The cable is frozen in the Bowden	Let the machine thaw, lubricate the cables
The control levers do not return back.	The inner bowden cable is stiff; bent bowden cable	Lubricate or replace the bowden cable
	The cable is frozen in the Bowden	Let the machine thaw, lubricate the cables
	Broken return spring	Replace with a new one
	Other defect	Visit a service facility
Other fault		Visit a service facility

Table 21: Troubleshooting

2.8 STORAGE

- Prevent unauthorized persons from access to the machine.
- Protect the machine against climatic conditions but do not use impermeable protection to prevent excessive corrosion it may cause.

We strongly recommend the following steps:

- ▶ Remove any dirt from the machine
- ▶ Repair any paint damage
- ▶ Drain the fuel from the engine fuel tank and carburettor - instructions in the engine operating instructions
- ▶ Perform the post-season machine lubrication per **Table 20**
- ▶ Inflate the tyres to pressure value **MAX**

2.9 MACHINE WASHING AND CLEANING

⚠ When washing and cleaning the machine, proceed so as to observe valid provisions and laws regarding protection of water courses and other water resources against pollution or contamination by chemical agents.

i Never wash the engine by a water jet! During starting, the engine electric system could malfunction.

i You can wash your machine (except for its engine) with a pressure washer. Always lubricate the locations per **Table 20**.

2.10 DISPOSAL OF PACKAGING AND THE MACHINE AT THE END OF ITS SERVICE LIFE

- When you unpack the machine you are bound to dispose of the packaging material according to national laws and decrees concerning waste disposal.
- When disposing of the machine at the end of its service life, we recommend proceeding as follows:
 - ▶ Demount from your machine all the parts that may still be used.
 - ▶ Drain oil from the engine and gearbox into a suitable closing container and hand them in at a collection point⁶⁵.
 - ▶ Remove any plastic and non-ferrous metal parts.
 - ▶ The remaining machine and its removed demounted parts are to be disposed of according to national laws and decrees concerning waste disposal.

2.11 HOW TO ORDER SPARE PARTS

The spare parts list is not part of these operating instructions.

For correct identification of your device, you have to know the type designation (**Type**), serial identification number (**Nº**) and order number (**CNº**) stated on the nameplate of the device, on the box or in the warranty card. Only with this information can the exact designation of the relevant spare part be traced to your dealer.

To search spare parts in the electronic catalogue of spare parts at <http://katalognd.vari.cz>, the first 10 characters of the identification number (**Nº**) are sufficient. If you do not have Internet access, you can ask for the printed catalogue to be sent C.O.D.

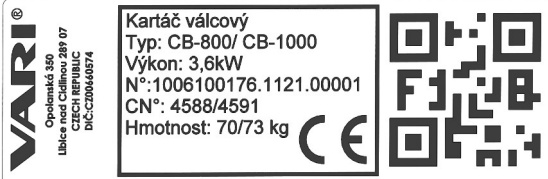
	Field	Description
	Type	Device type designation CB-800/CB-1000
	Nº	Unique serial identification number: 1006600176.1121.00001 (product.period.sequence)
CNº	Business (order) number: 4588/4591	

Table 22: Nameplate - example

2.12 MANUFACTURER'S CONTACT INFORMATION

VARI, a.s. Phone: (+420) 325 607 111
 Opolenská 350 Fax: (+420) 325 607 264
 289 07 Libice nad Cidlinou E-mail: vari@vari.cz
 The Czech Republic Web: <http://www.vari.cz>

<http://www.vari.cz>

<http://katalognd.vari.cz>



2.13 ATTACHED ILLUSTRATIONS

The attached illustrations are common for all language versions. they can be found at the end of this manual in Chapter 6, page 95.

Fig. 1: Main Machine Components	Fig. 2: Handlebar settings, binding and grip points	Fig. 3: Machine Control Elements
Fig. 4: Accelerator lever position	1 STOP position The engine is not running. - Engine switch-off. - Engine shutdown. - Refuelling. - Machine transport.	3 "Rabbit" position MAX The engine runs at its maximum speed. - Working position.
Fig. 5: Slower travel - turtle	2 "Turtle" position MIN The engine runs at its idle speed. - Short break.	4 CHOKE position The engine choke is engaged. - Cold engine start.
Fig. 8: Sticker - speed selection	Fig. 6: Faster travel - rabbit	Fig. 7: Cover removal
Fig. 11: Adjustment when parking / storing the machine	Fig. 9: Wheel drive disconnecting	Fig. 10: Adjusting the brush pressure
Fig. 14: Discharging dirt from the collection box	Fig. 12: Adjusting the sweeping rollers position	Fig. 13: Collection box fitting
Fig. 17: Fitting the anti-dust sheet to the machine	Fig. 15: Collection box transport position	Fig. 16: Sweeping plough fitting
Fig. 20: Sweeper roller drive pulley	Fig. 18: Fitting the snow chain to the wheel	Fig. 19: Threaded handlebar mounting bolt
	Fig. 21: Travel pulley	Fig. 22: Handlebar Bowdens

⁶⁵ The respective local authority will inform you of the disposal centre location.

Fig. 23: Bowdens on the frame rear	Fig. 24: Sweeper roller gearbox mount	Fig. 25: Support wheel extraction control
Fig. 26: Support wheel	Fig. 27: Sweeping roller replacement	Fig. 28: Bowden and tension pulley adjustment screws
Fig. 29: V-belt tracks and guide pins	1 Brush drive V-belt 2 Gearbox drive V-belt 3 Axle drive V-belt 4 Brush drive pulley 5 Travel drive pulley 6 Drive pulley on the engine 7 Driven pulley on the brush drive 8 Driven gearbox on the gearbox	9 Double drive travel pulley 10 Double driven travel pulley 11 Gearbox belt tensioner 12 Directional pulley 13 Front belt guides 14 Crossbar belt guides 15 Belt guides under the engine
Fig. 30: Travel V-belt change	1 Right wheel 2 Left wheel 3 Axle 4L 4R Side protective covers	5 Connecting bar 6 Axle bearing body nut 7 V-belt
Fig. 31: Conversion to a different sweeping width	Fig. 32: Machine Assembly	Fig. 33: Sticker - speed selection
Fig. 34: Combined sticker	Fig. 35: Sticker - brush pressure adjustment	Fig. 36: Sticker - brush drive switching
Safety stickers - machine locations	Fig. 37: Sticker - travel actuation	Fig. 38: Tools and accessories – not included in the machine
Spark plug wrench 21 mm (3/8") Ratchet handle 3/8" 12-point socket 3/8" 15 mm	VARI canister Order No. 3562 HONDA fuel stabiliser Order No. 08CXZ-FSC-250	Briggs & Stratton Fuel Fit™ Fuel Stabiliser (Order No. 992381) VARI POWERMETER engine hour meter Order. No. 4227

2.14 MACHINE ASSEMBLY

i Please request your machine set-up and training from your dealer as part of the pre-sales service.

! **Due to the weight of the machine, its assembly should be carried out with two workers.**

- The machine is delivered in two boxes - the machine base is in the box marked **A**, the brushes in the box marked **B**.

Fig. 32 on page **104**

- Remove all loose machine parts from box **A** and the brushes from box **B**.
- Sort the fasteners from the bag with Operating Instructions.:
- Cut the box at all four corners and fold the sides and fronts down.
- Cut the plastic strips that fix the handlebars **7** on the cardboard insert. Remove the cardboard insert.
- Lift the machine up slightly by pulling on the handlebar holder **8**. The other worker will remove the cardboard insert under the machine axle.
- >1** and **>2**: The other worker puts flat washers **1** 21 mm **2**, lubricates the axle shaft ends and fits the left wheel **3** and right wheel **4**. He will secure the wheels with their locking pins with caliper **5** and locking rings **6**.

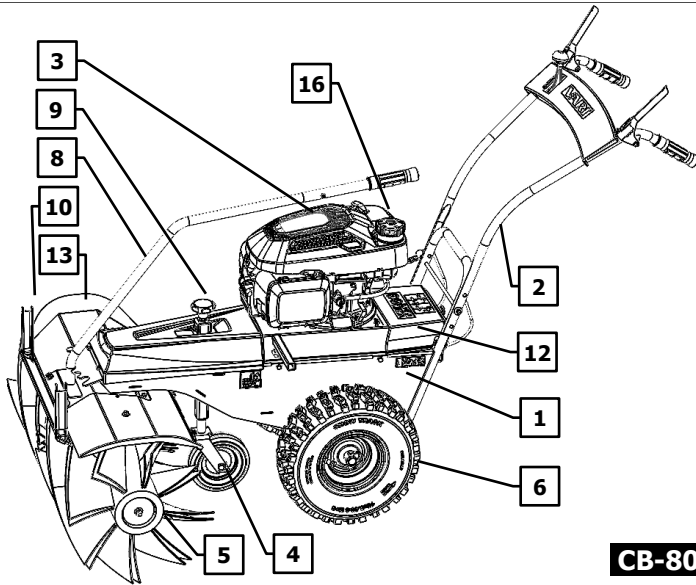
i Make sure the wheel tread direction matches the image in **Fig. 32**. The wheel direction arrow on the side of the tyre labelled **ROTATION**.

- Lower the machine onto the wheels.
- Lift and turn the handlebars by 180°.

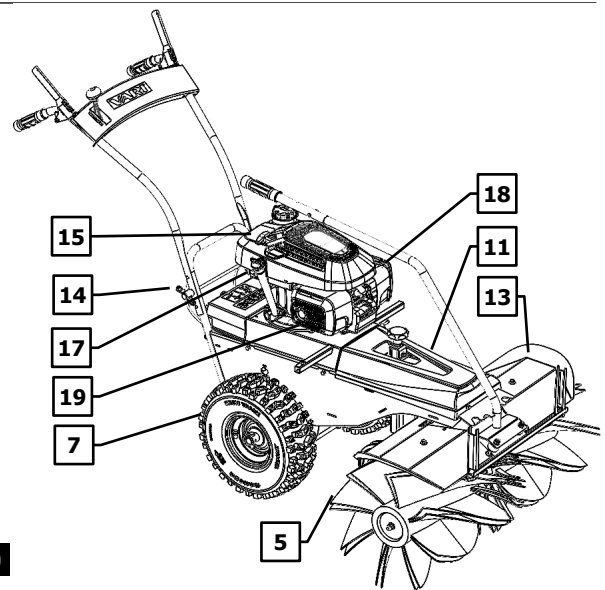
i Make sure the Bowdens are not crossed!

- >3**: Fit the handlebars **7** to the handlebar tubular bracket **8**, insert the bolt from the left **9**, insert the flat washer 8.4 mm **10**, lightly lubricate the bolt tread end. Screw on the plastic star **11** and tighten it securely.
- Secure the Bowdens via two plastic tie straps **12** to the handlebar handles **7** at the point before the first tube bend. Jointly fasten the throttle Bowden and brush drive actuation Bowden to the right handlebar handle.
- >4**: Lubricate the thread in the support wheel. Insert the support wheel **13** from below into the square tube **14** to the extreme position. Turn the control knob a few times **15** to the right, so the support wheel engages with the control knob screw. The machine will stand on its own now.
- >5**: To the support plate on the brush drive **16** via screws **17** with nuts **18** and inserted rubber columns **19** attach the brush position setting lever **20**. Tighten the screw connection, so the rubber columns **19** get only slightly compressed.
- >6**: To the support plate on the brush drive **16** Using the screw connection, **B** attach the connecting sheet metal part **23**.
- >6**: Depending on the selected brush width (see **Fig. 31**) Screw the fenders onto the brush drive support plate **16** **21** and **22** via the screw connections **A** and **B**. The flat washer in screw connection **B** must always be under the screw head on the plastic fender side.
- >7**: Slide the bolt into the hole in the square **24** drift tube **25**. Slide the bolt into the hole in the hexagonal output shaft **26** of the brush drive. Slide the square drift tube **24** onto the hexagonal output shaft **26**. Slide the other drift square tube **27**, screw on the self-locking collar nut **28**. Tighten securely.
- Follow the procedure in **Chap. 2.7.5 Brush change** on page **35** and **Fig. 27** Attach your selected brush width.

6 **CZ** OBRÁZKY **EN** PICTURES **DE** BILDER **SK** OBRÁZKY **PL** RYSUNKY

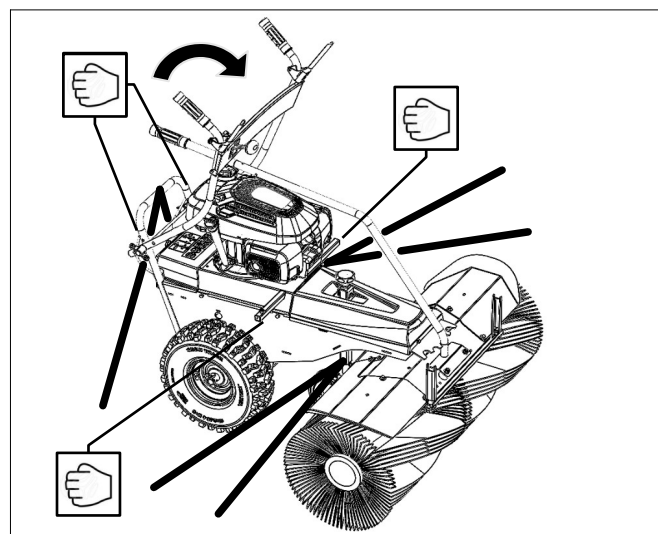
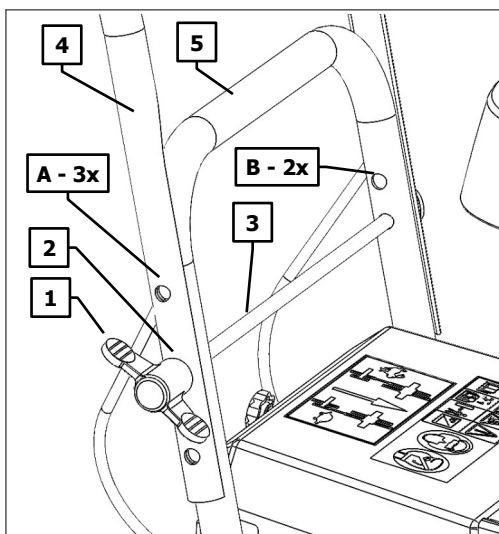


CB-800

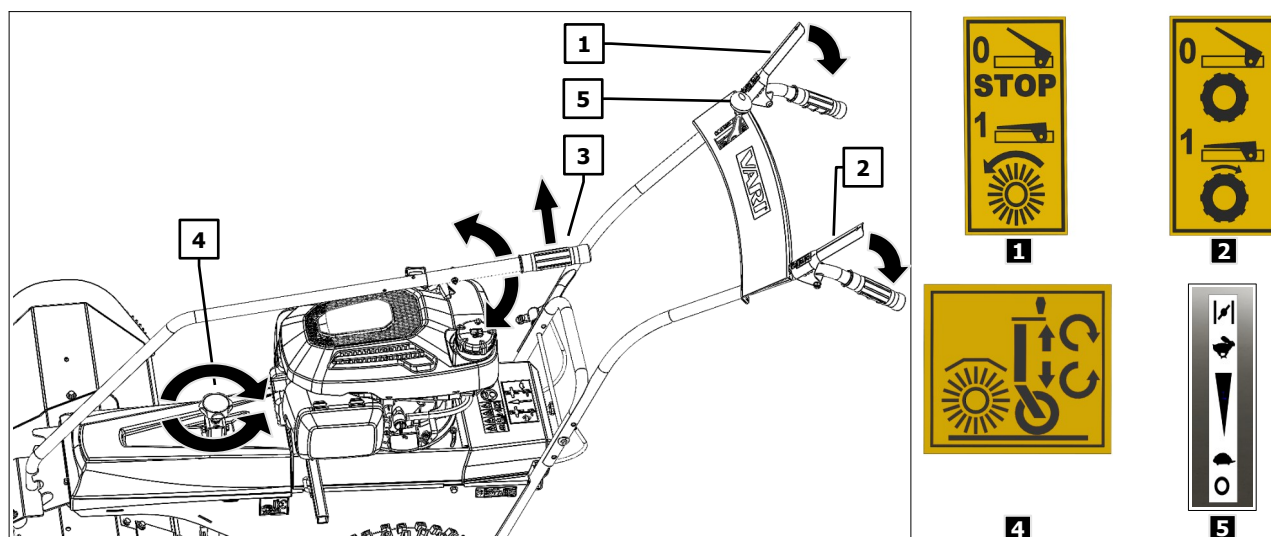


CB-1000

Obr. 1: Hlavní části stroje



Obr. 2: Nastavení řídítek, vázací a úchopová místa


Obr. 3: Ovládací prvky stroje
1 Poloha STOP

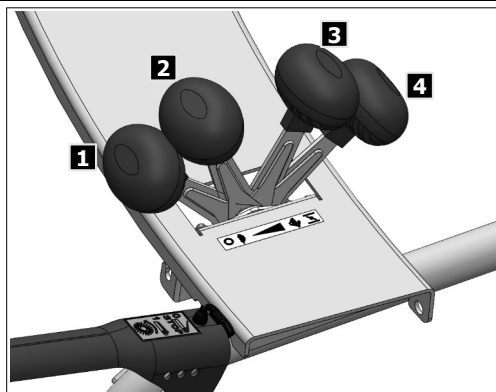
Motor neběží.

- Vypnutí motoru.
- Odstavení stroje.
- Doplnění paliva.
- Přeprava stroje.

2 Poloha „želva“ MIN

Motor běží ve volnoběžných otáčkách.

- Krátkodobá přestávka.


Obr. 4: Polohy páčky akcelérátoru
3 Poloha „zajíc“ MAX

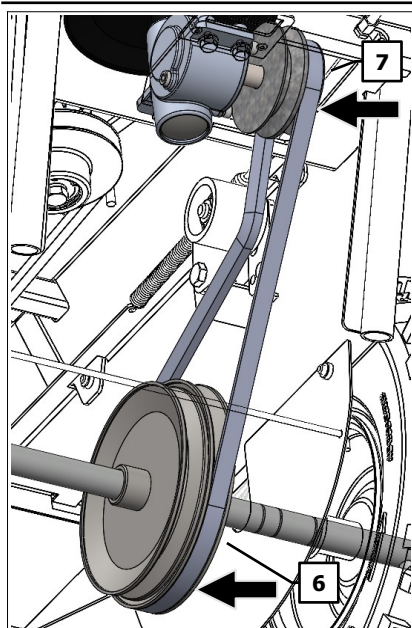
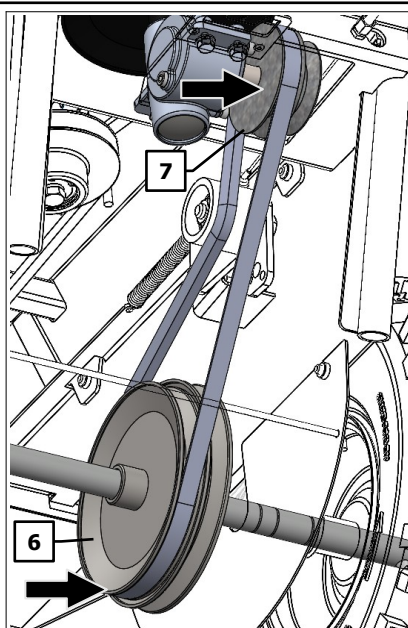
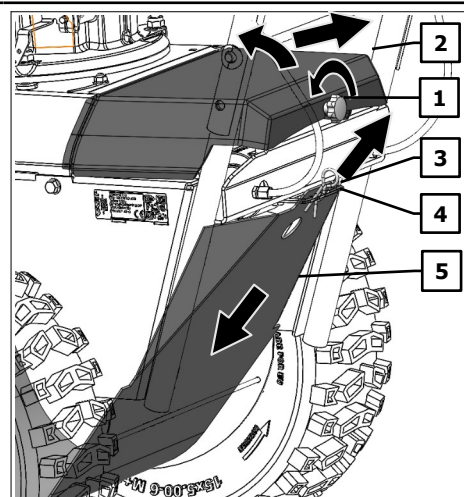
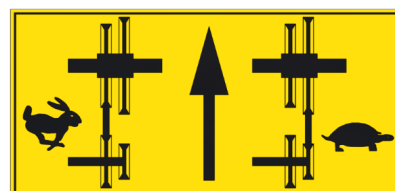
Motor běží v maximálních otáčkách.

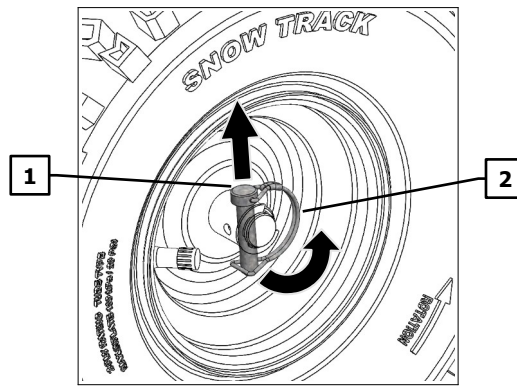
- Pracovní poloha

4 Poloha SYTIČ

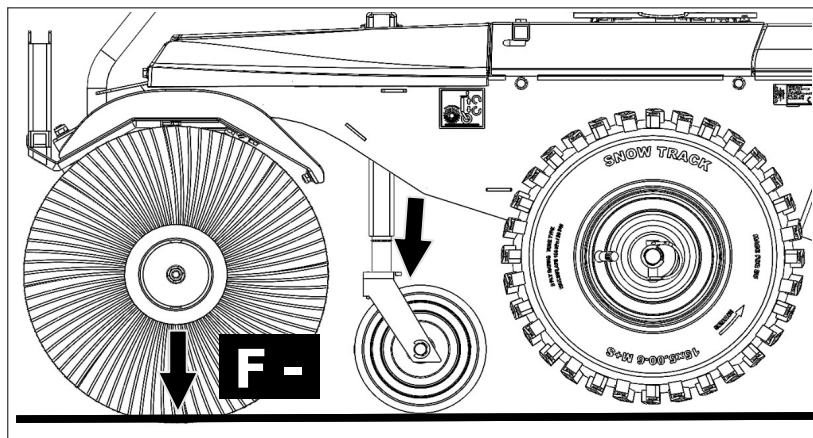
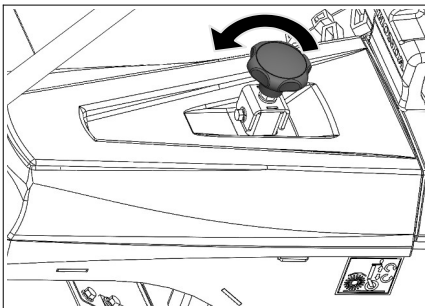
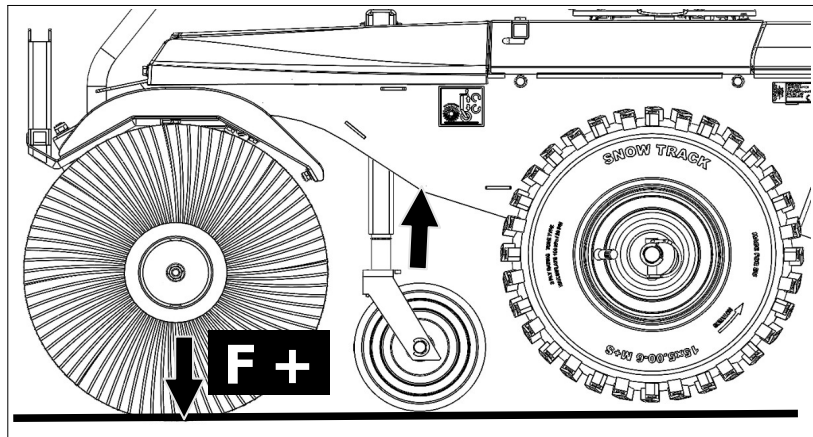
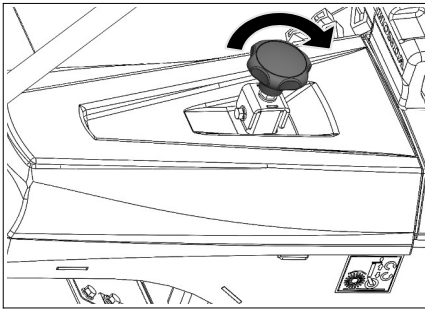
Motor běží na sytič.

- Studený start motoru.

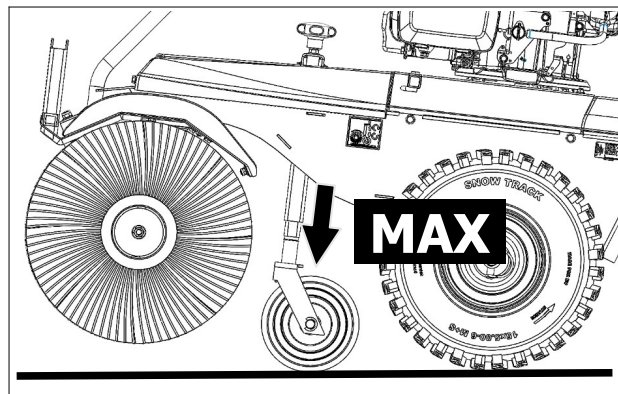
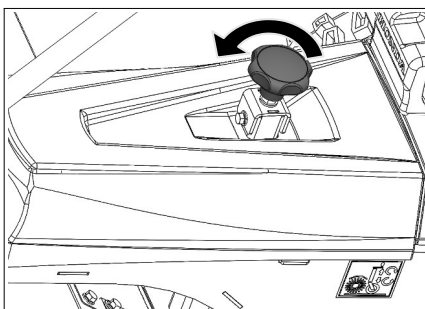

Obr. 5: Pomalejší pojezd - želva

Obr. 6: Rychlejší pojezd - zajíc

Obr. 7: Demontáž krytů

Obr. 8: Samolepka - volba rychlostí



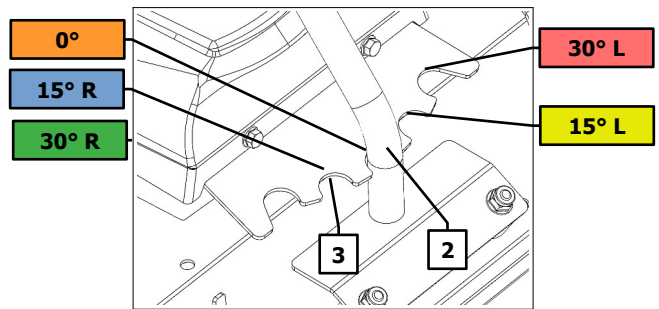
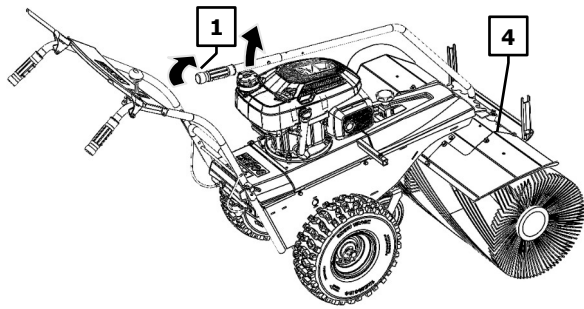
Obr. 9: Odpojení pohonu kol



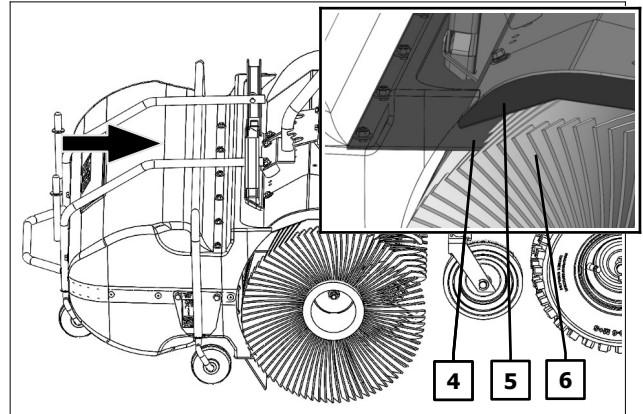
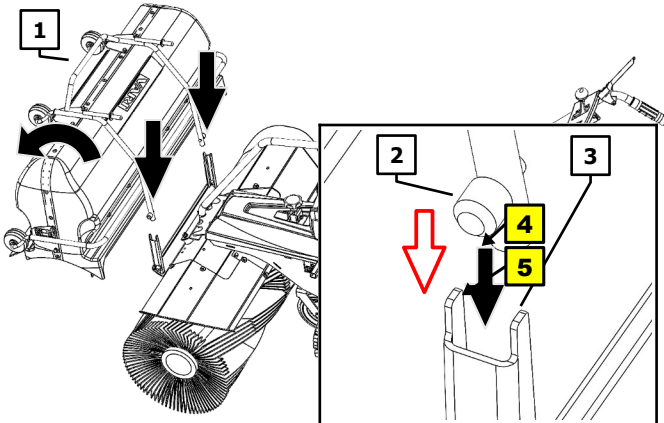
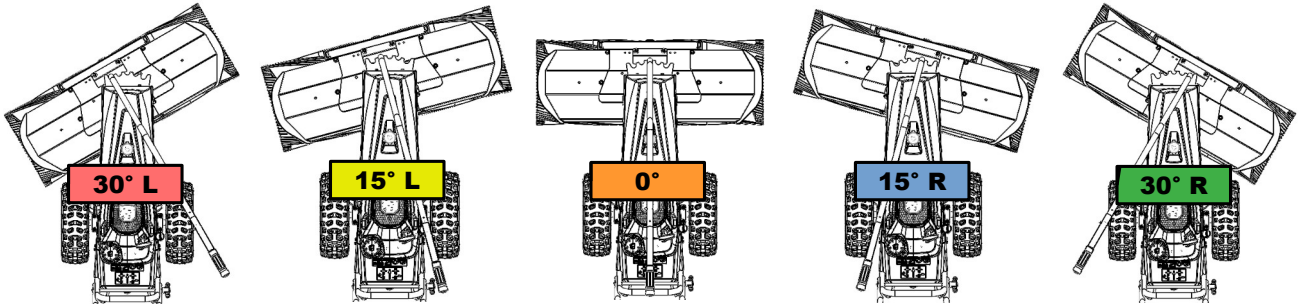
Obr. 10: Nastavení přítlaku kartáčů



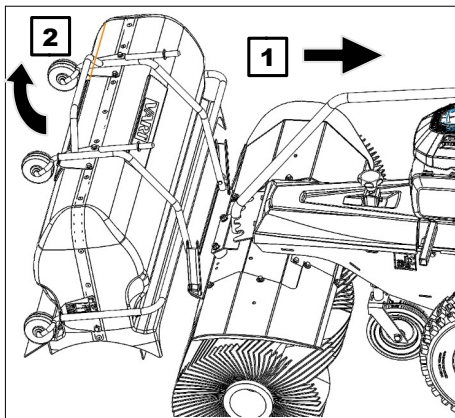
Obr. 11: Nastavení při parkování/skladování stroje



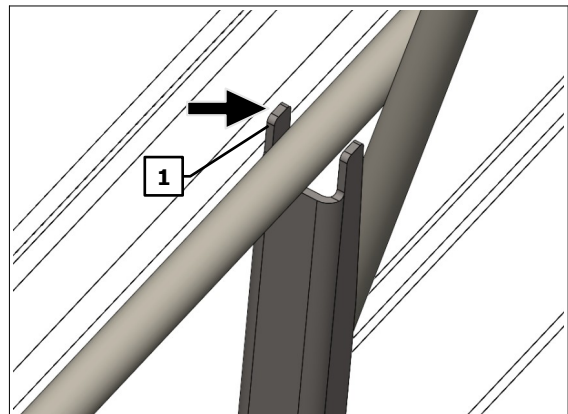
Obr. 12: Nastavení polohy zametacích válců



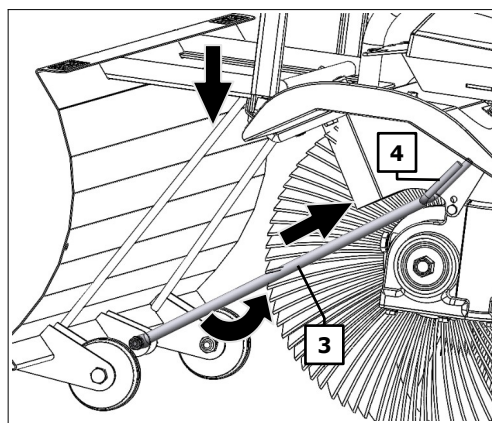
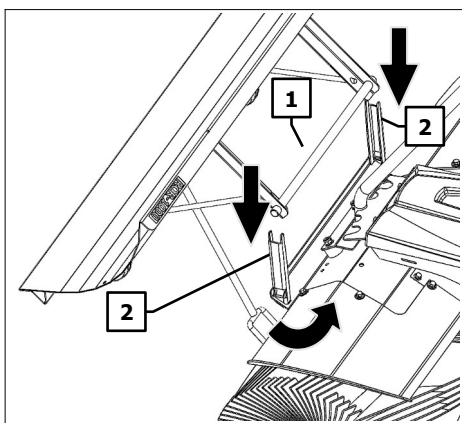
Obr. 13: Nasazení sběracího boxu



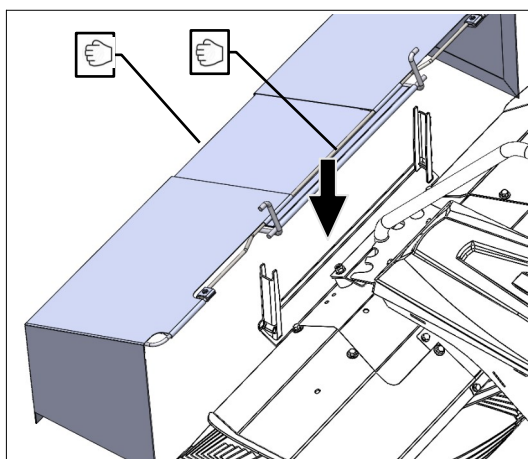
Obr. 14: Vysypání nečistot ze sběracího boxu



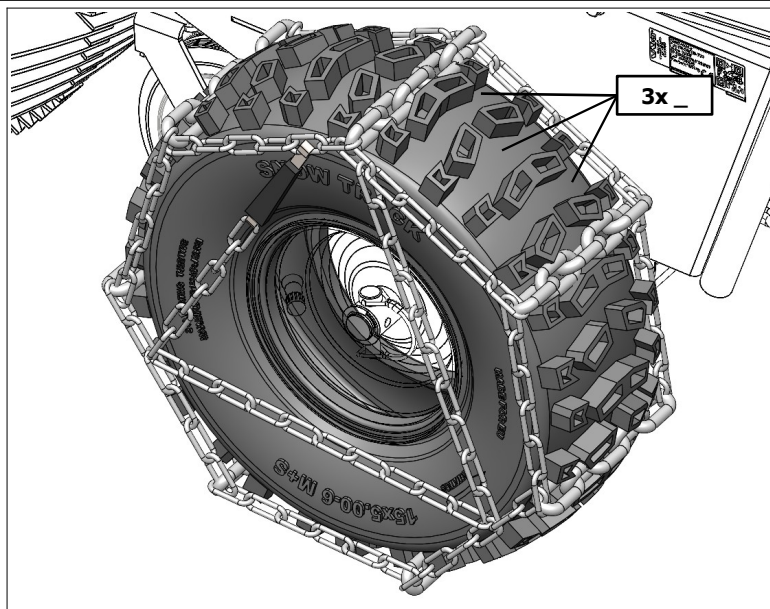
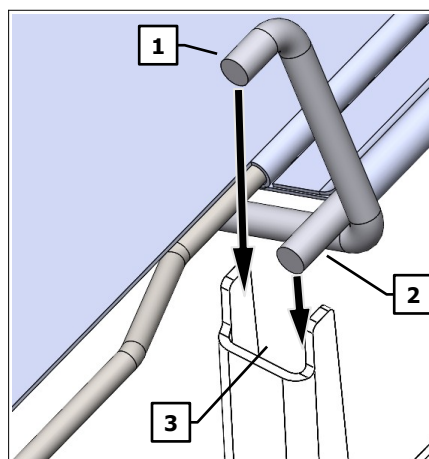
Obr. 15: Převrtní poloha sběracího boxu



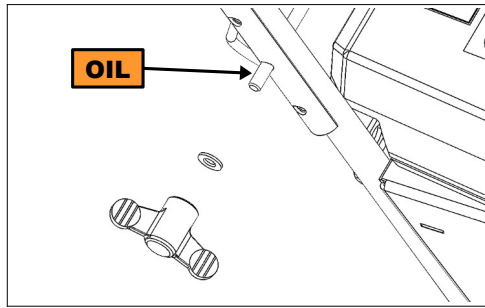
Obr. 16: Nasazení odhrnovací radlice



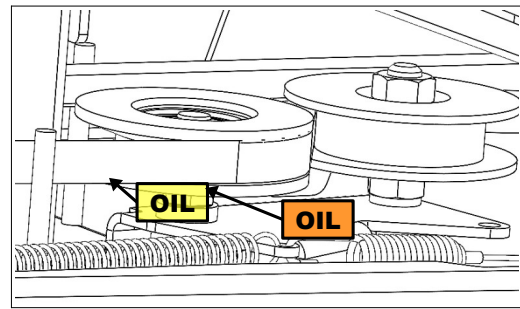
Obr. 17: Nasazení antiprachové plasty na stroj



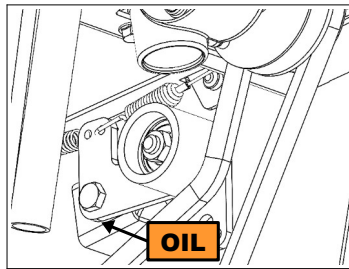
Obr. 18: Nasazení sněhového řetězu na kolo



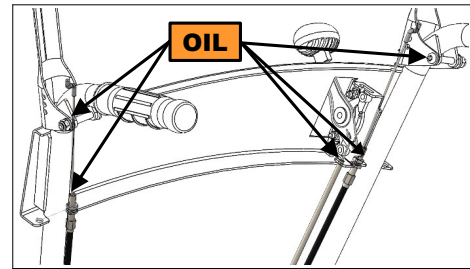
Obr. 19: Závít svorníku uchycení říditék



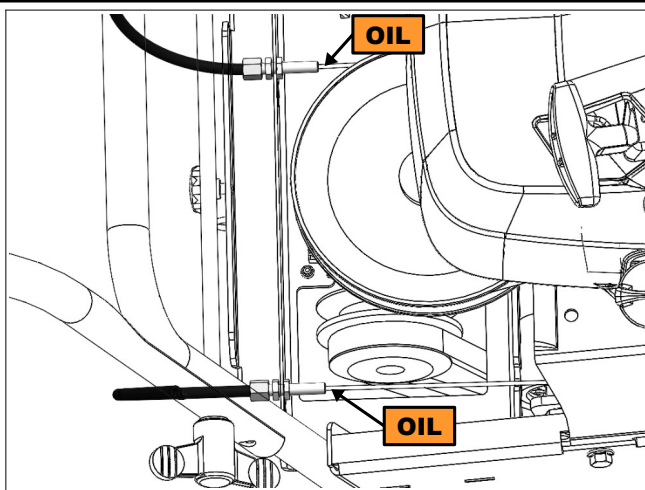
Obr. 20: Kladka pohonu zametacích válců



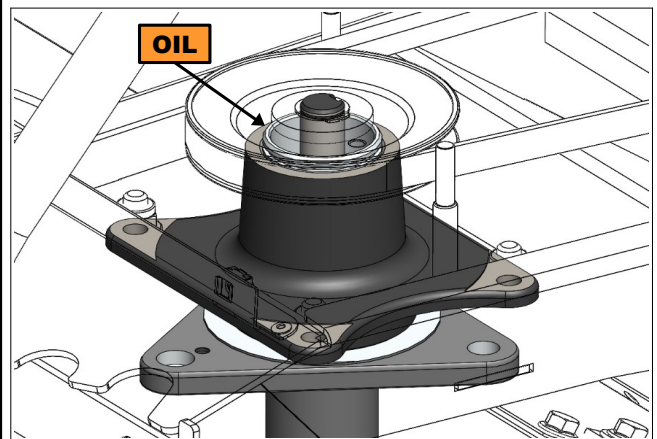
Obr. 21: Kladka pojezdu



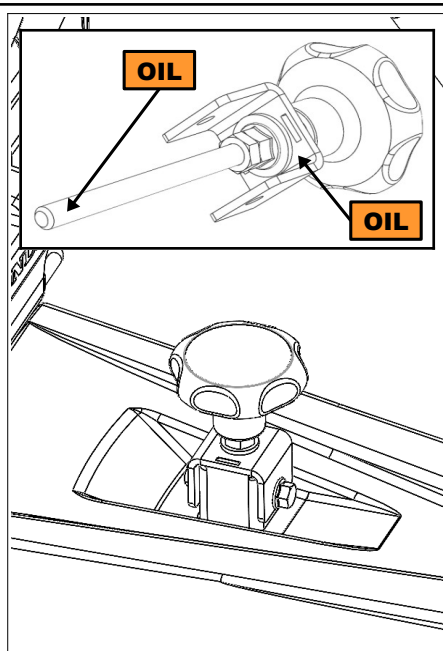
Obr. 22: Bowdeny na říditkách



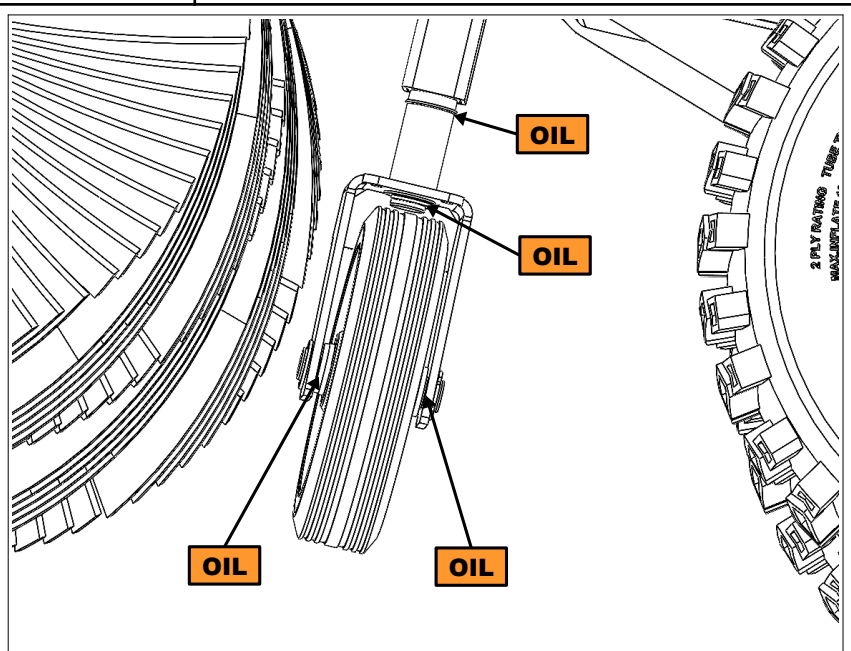
Obr. 23: Bowdeny vzadu na rámu



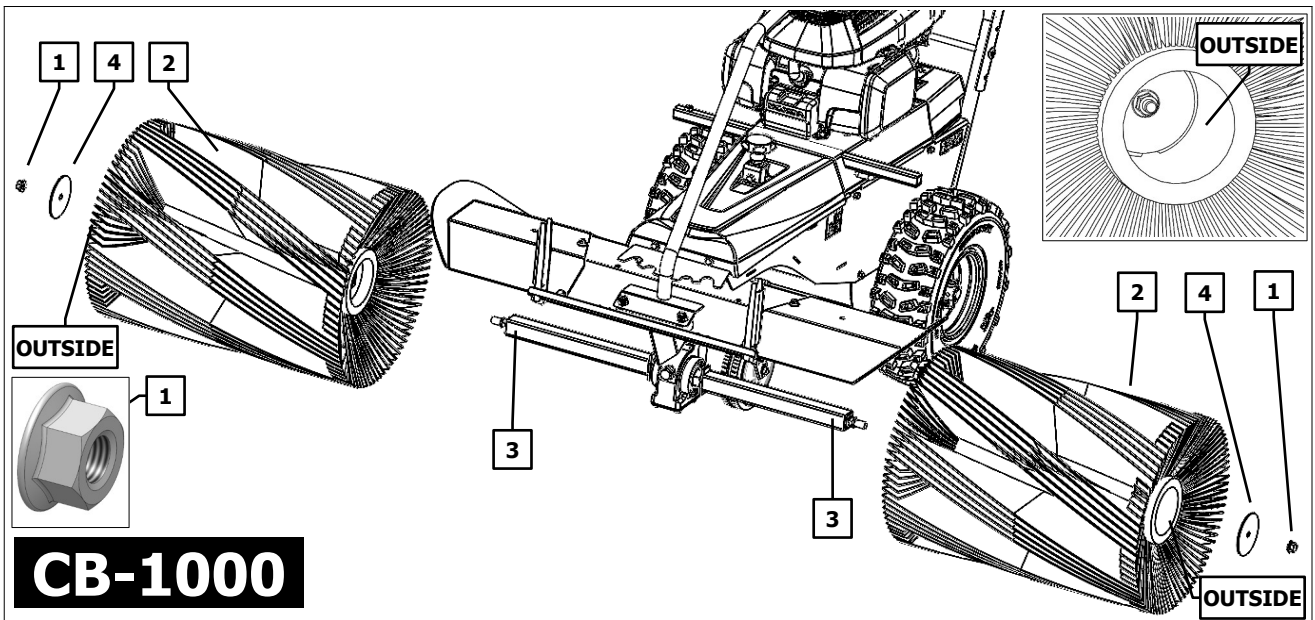
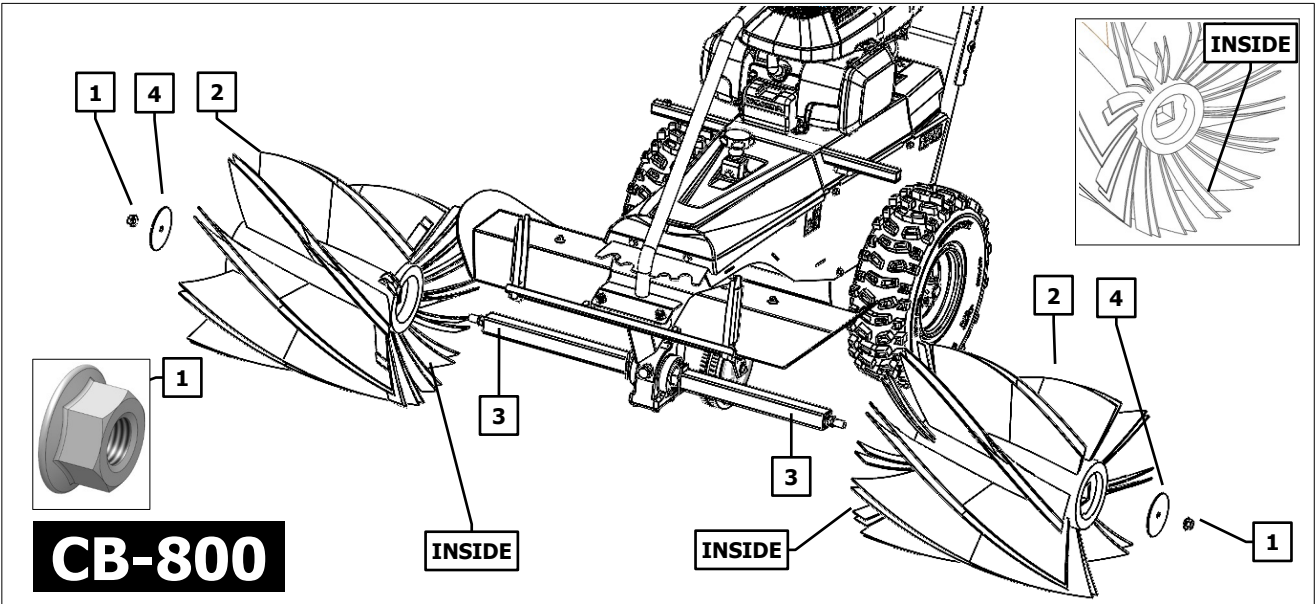
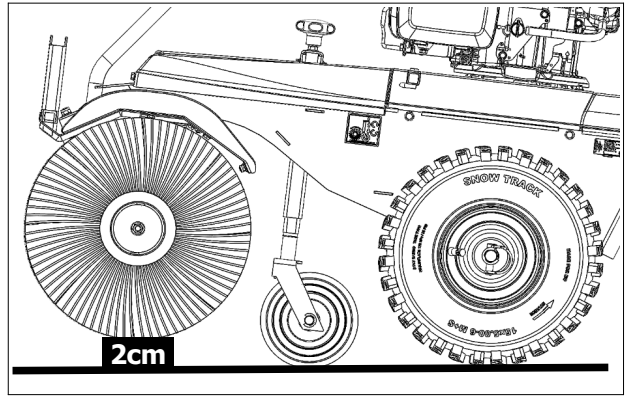
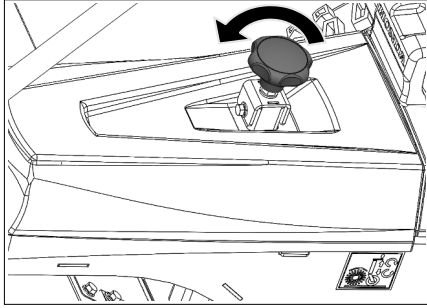
Obr. 24: Uložení převodovky zametacích válců



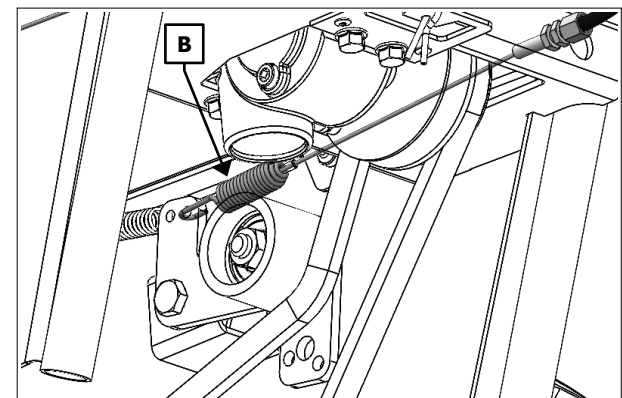
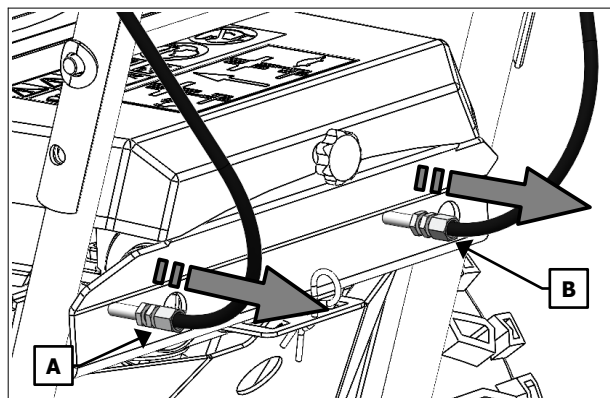
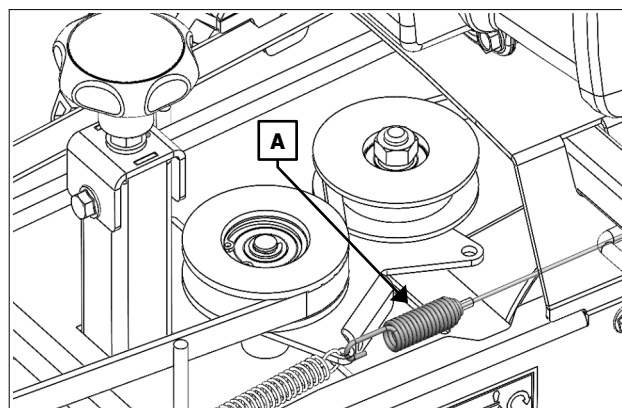
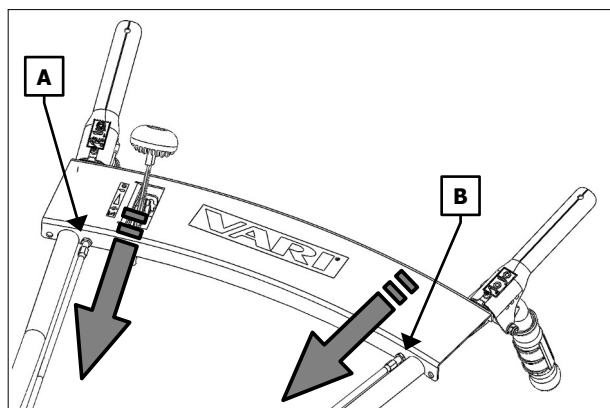
Obr. 25: Ovládání vysouvání opěrného kola



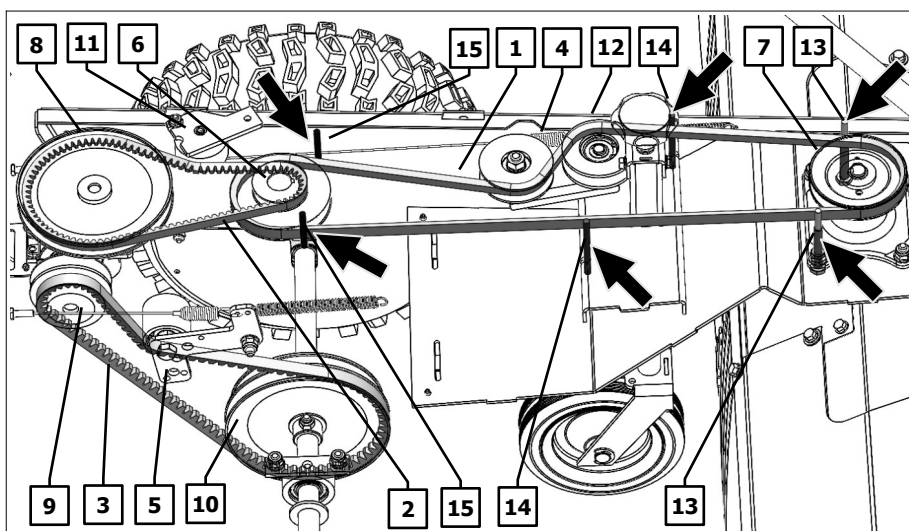
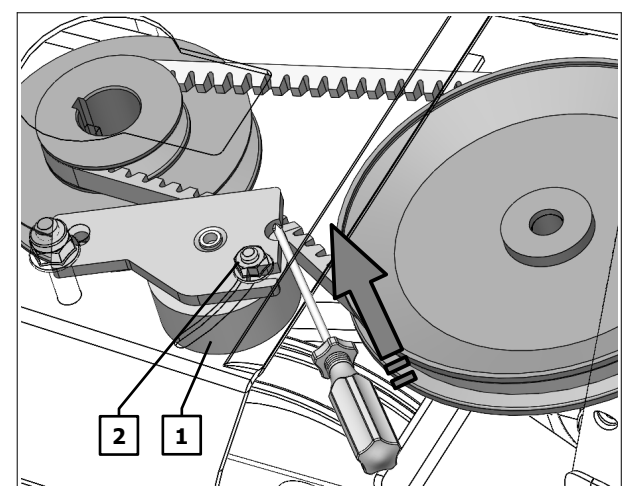
Obr. 26: Opěrné kolo



Obr. 27: Výměna zametacích válců

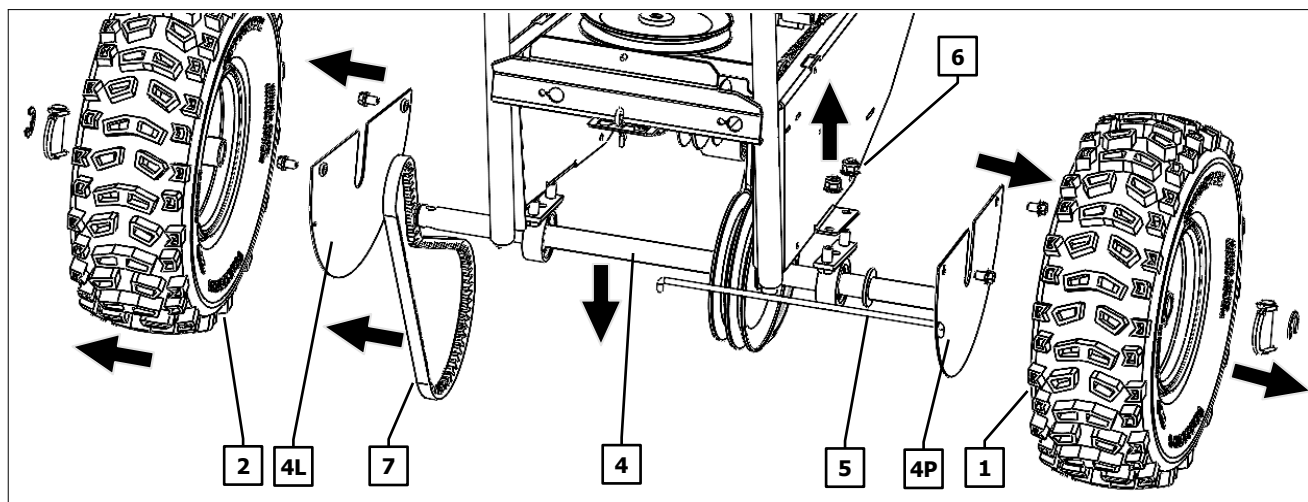


Obr. 28: Seřizovací šrouby bowdenů a napínací kladky



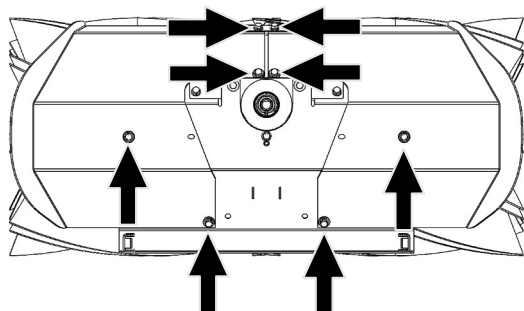
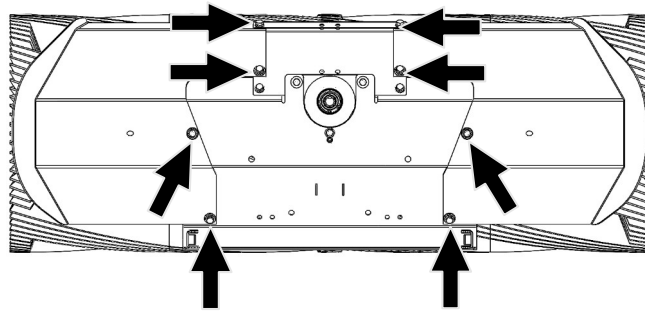
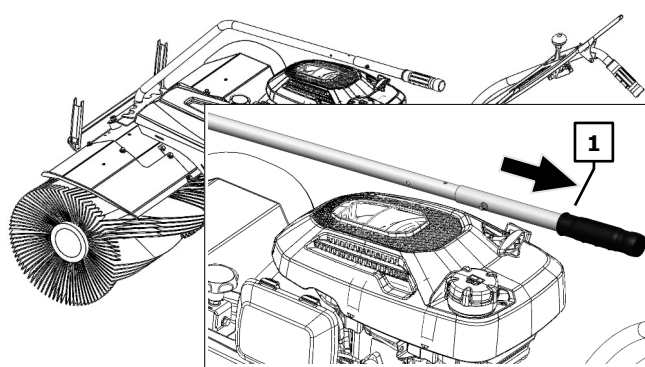
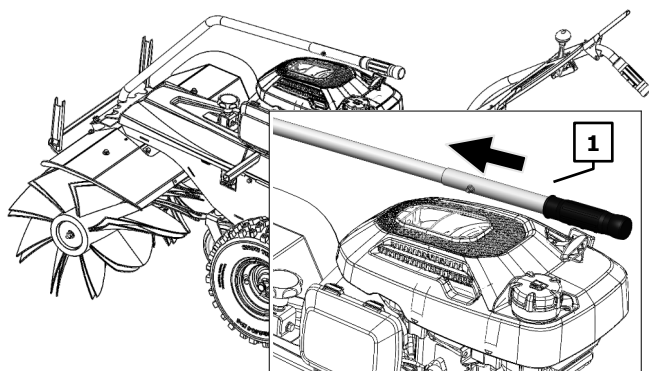
Obr. 29: Trasy klínových řemenů a vodící kolíky

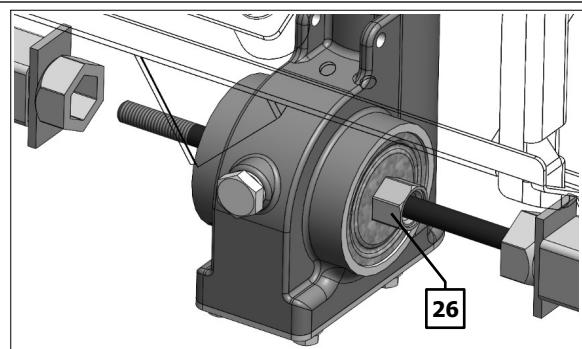
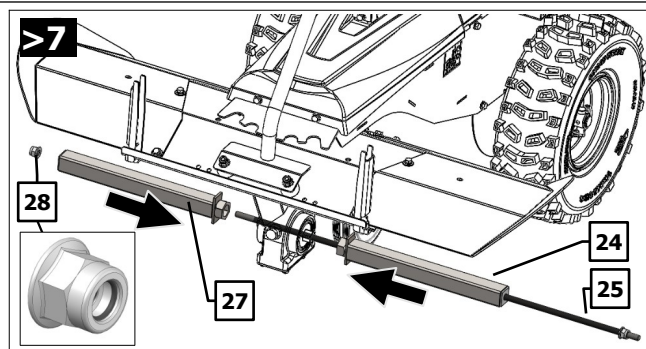
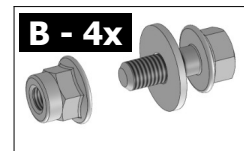
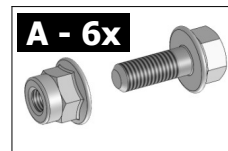
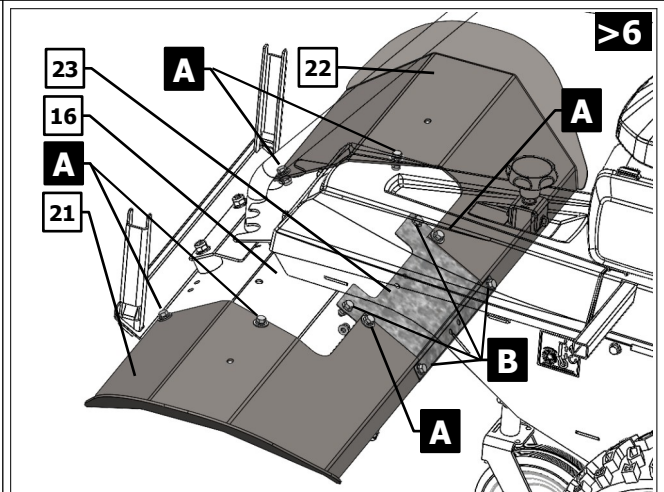
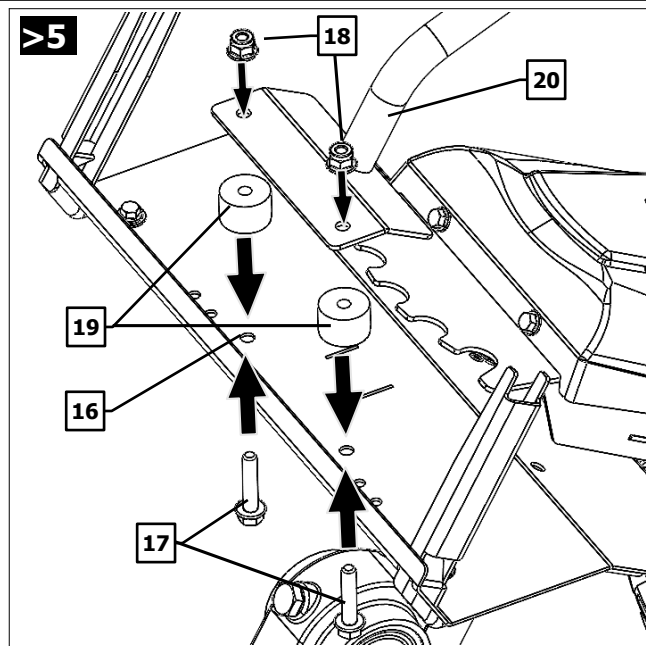
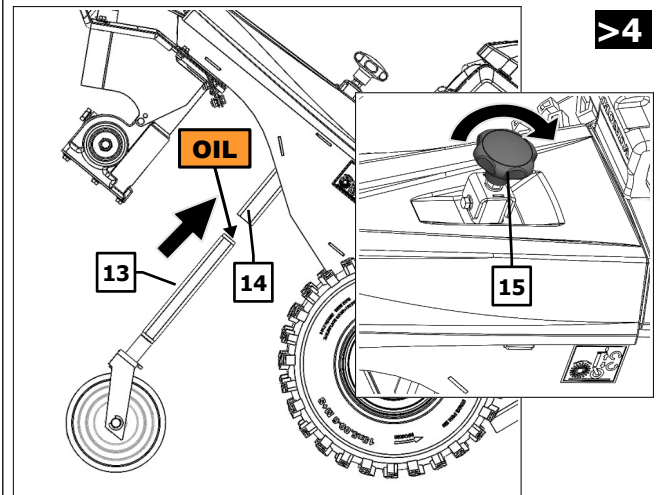
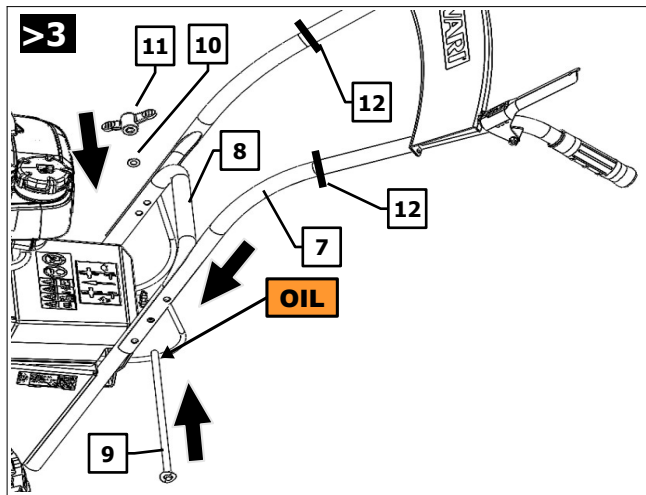
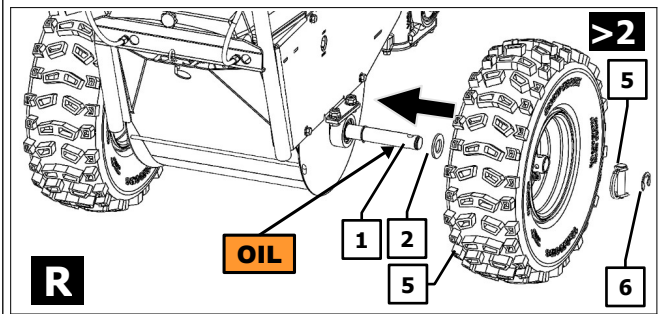
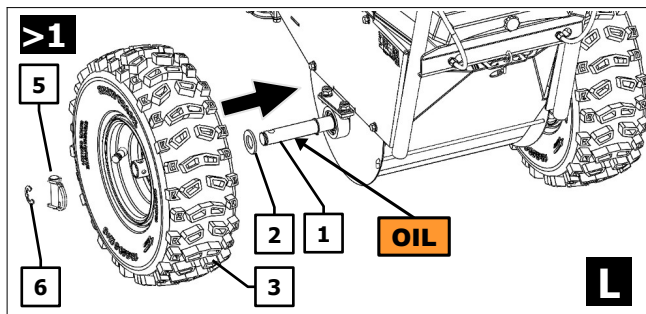
- 1** Klínový řemen pohonu kartáčů
- 2** Klínový řemen pohonu převodovky
- 3** Klínový řemen pohonu nápravy
- 4** Kladka pohonu kartáčů
- 5** Kladka pojezdu
- 6** Hnací řemenice na motoru
- 7** Hnaná řemenice na náhonu kartáčů
- 8** Hnaná řemenice na převodovce
- 9** Hnací dvouřemenice pojezdu
- 10** Hnaná dvouřemenice pojezdu
- 11** Napínák řemene převodovky
- 12** Směrovací kladka
- 13** Vodítka řemene vpředu
- 14** Vodítka řemene na příčce
- 15** Vodítka řemene pod motorem


Obr. 30: Výměna klínového řemene pojezdu

- 1** Pravé kolo
- 2** Levé kolo
- 4** Náprava

- 4L 4P** Boční ochranné kryty
- 5** Spojovací příčka
- 6** Matice ložiskových těles nápravy
- 7** Klínový řemec


CB-800

CB-1000

Obr. 31: Přestavba na jinou šířku záběru

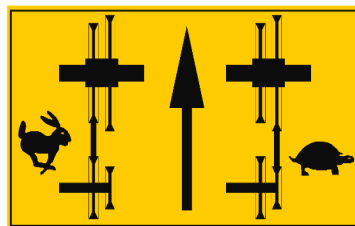


Obr. 32: Sestavení stroje

1 2 3 4 5 6



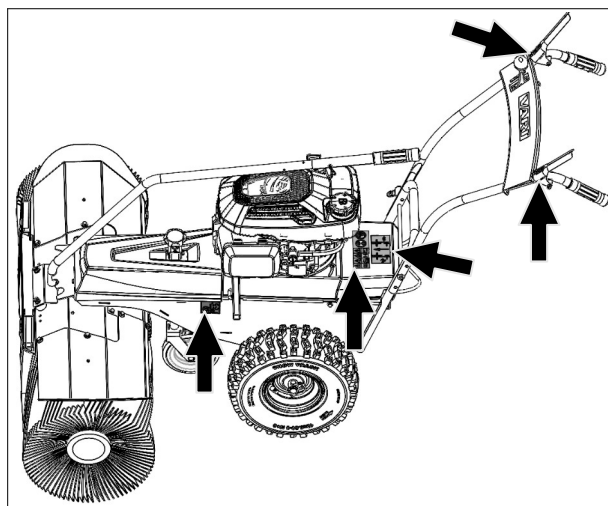
Obr. 34: Sdružená samolepka



Obr. 33: Samolepka - volba rychlostí



Obr.35: Samolepka - nastavení přítlaku kartáčů



Bezpečnostní samolepky – umístění na stroji



Obr. 36: Samolepka - zapínání pohonu kartáčů



Obr. 37: Samolepka - zapínání pojezdu



10 mm – 2x



15 mm – 1x



Klíč na svíčku 21 mm (3/8")



Ráčna 3/8"



Hlavice 12 hraná 3/8" 15 mm



Kanistr VARI
obj.č. 3562



Stabilizátor paliva HONDA
obj.č. 08CXZ-FSC-250



Stabilizátor paliva Briggs & Stratton Fuel Fit™ (obj.č. 992381)



Počítadlo motohodin VARI
POWERMETER
obj.č.4227

Obr. 38: Nářadí a příslušenství - není součástí stroje