STIGA

WORKSHOP MANUAL

IMPORTANT NOTICE

The information contained herein is intended for Service Operations and professionals only, able to competently perform the operations described herein, using the appropriate equipment in order to safeguard se-curity and performance of the machine.

The manufacturer is not liable for damages or injuries arising from operations performed by individuals or inadequate facilities.

NJ 92 - NJ 92 Hy - Edition 2018--->.....

ALPINA Mountfield ATCO CASTELGARDEN

GENERAL INFORMATIONS

The purpose of this manual is to assist Service Centres with service, disassemble and repair the versions of the machines:
– mechanical driven **(NJ 92)**;
– hydrostatic driven **(NJ 92 Hy)**.

The manual has left out the simplest and quickest operations that can be handled by a good mechanic, while concentrating more on specific aspects with tips and advice on the best servicing procedures.

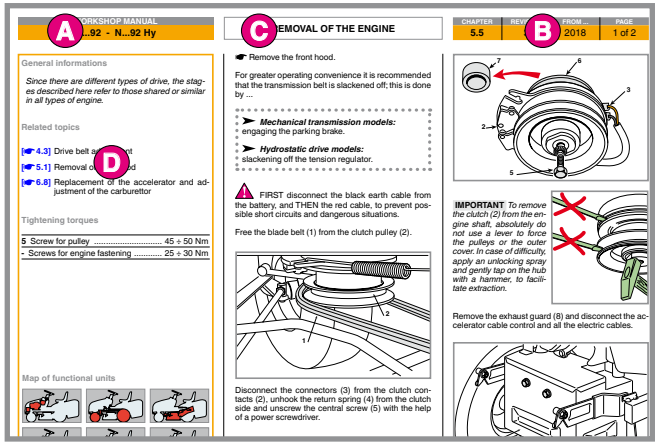
Please take time to read through this manual to acquire a basic understanding of the machine, which is necessary for working rationally without making errors or wasting time.

All problems related to the use of the machine are fully covered in the User manual.

STRUCTURE OF THE MANUAL

The manual is divided into sections and chapters.
Each page of this manual states the following information:

A) Machines or series of machines to which the contents of the chapter are applicable.



B) Identification and number of the page based on the following criteria:
– the first field indicates the section and chapter;
– the second field indicates the revision index;
– the third field indicates the chapter validity start date, i.e. the year of manufacture of the machine;
– the fourth field indicates the page number and total number of pages dedicated to the subject.

C) Chapter title.

D) General information, references to other chapters in the manual, technical information related to the topic, and buttons with links to the machine operating units map can be found in the left column on each initial page.

SECTIONS OF THE MANUAL

The content of the manual is divided into sections which correspond to the various subjects and the different types of servicing.

1. Rules and procedures for Service Centres
This chapter covers all the main aspects of the relationship between the manufacturer and the service centres.
A close collaboration between the manufacturer and the service centres is conclusive for solving problems in the most effective way as well as maintaining an image of efficiency and reliability.
Compliance with these brief and simple guidelines will facilitate this task and prevent general misunderstandings and time-wasting for both the manufacturer and the service centre.

2. General regulations
This chapter covers the main aspects of a servicing procedure and the general rules for guaranteeing a successful service which protects the environment and respects the safety of both the serviceman and the user of the apparatus.

3. Maintenance
This chapter covers the main aspects of a servicing procedure.
A specific chapter is dedicated to a quick troubleshooting guide on the most frequent questions and the chapter references providing information on the interventions required to resolve the same.

4. Adjustments and tuning
his chapter deals with the adjustments to be made to remedy the more frequent performance failures and are usually resolved by quick checks and tunings.

5. Removal of external parts and main assemblies
For doing more difficult jobs, greater accessibility may be required. This can be done by taking the unit concerned off and working at the bench, or by removing the cover or other external parts.
Whether or not this will be useful is at the discretion of the mechanic's experience.

6. Repairs
This chapter deals with all the more complex work connected with the replacement or repair of malfunctioning or worn parts.
The descriptions must follow a logical sequence and can include operations not specifically connected to a particular type of repair.
In this case, careful reading of the entire procedure can help you omit all those operations not connected with the case in hand without, however, overlooking anything that may be necessary.

7. Electrical system
This chapter deals with the problems and checks connected with the electrical system.
All work can be done using a tester without having to use special equipment.
The electrical diagrams can be useful to you for

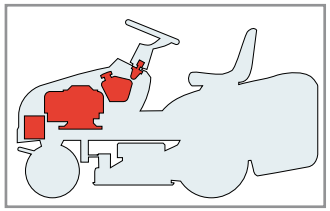
understanding how the system functions and to facilitate the pinpointing of any problems.

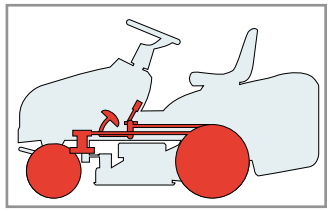
8. Technical specifications

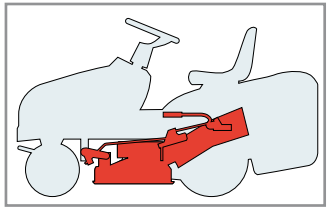
This chapter summarises all the main information regarding the machine.

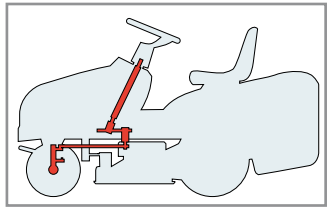
FUNCTIONAL UNITS MAP

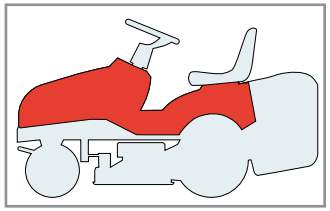
The map is a search tool that provides instant access to all information concerning machine operational unit or element.
Identification is simplified by the use of icons resembling the various units, each of which is linked to a table of contents that lists all related topics.

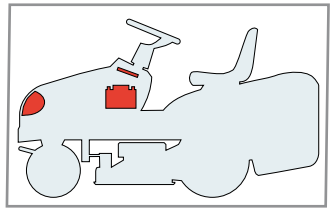

ENGINE - FUEL TANK


TRANSMISSION - BRAKE - WHEELS


CUTTING DECK


STEERING


BODY


ELECTRICAL SYSTEM

SYMBOLS

In the manual some symbols are present. They are used to draw the attention of the operator, reminding him to perform the interventions with the necessary attention and caution.

Indicates operations that should be carried out with utmost care to avoid impairing the functionality and safety of the machine.

Indicates operations that should be carried out with utmost care to avoid injury to operators.

Highlights all those operations that require different working methods depending on the type of machine, subsequent modifications and the accessories fitted.

Indicates cross-reference to other parts of the manual, followed by the number of the relevant chapter, paragraph or sub-paragraph.

TERMINOLOGY AND ABBREVIATIONS

Some paragraphs are preceded by a definition that highlights their importance:

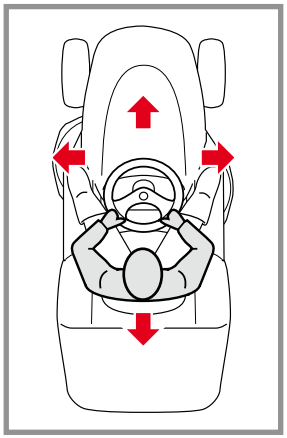
NOTE *General reference for the correct maintenance execution and methods..*

IMPORTANT *Specific procedures or information necessary to avoid damage to the machine or equipment.*

WARNING! ***Non-observance will result in the risk of injury to oneself or others.***

DANGER! ***Non-observance will result in the risk of serious injury or death to oneself or others.***

Whenever reference is made to a position on the machine “front”, “back”, “left” or “right” side, this refers to the positions of the seated operator.



The following abbreviations are used in this manual

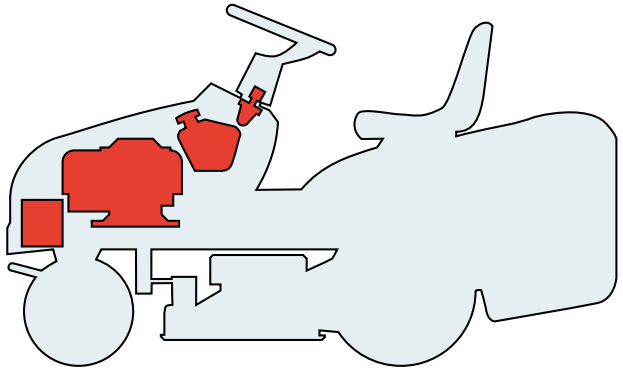
Dx / Sx	= Right / LeftV
Min / Max	= Minimum / Maximum
Chap.	= Chapter
PTO	= Power Take Off
HST	= Hydrostatic Transmission

General informations

Different fittings are foreseen for this machine which can imply the use of different engines within the same.
This manual only describes the operations relating to the application of the machine engine; reference to the engine's Manufacturer's Manual is recommended for information regarding servicing, disassembly and replacement of components.

Related topics

[☛ 1.1] Identification of components



RELATED TOPICS:

Adjustments and tuning

Removal of external parts and main assemblies

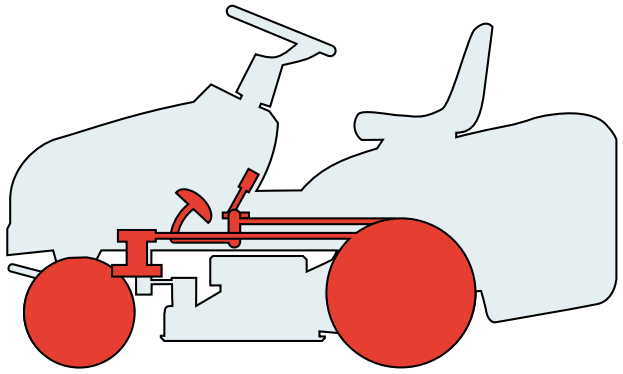
Repairs

General informations

The use of outsourced third-party mechanic or hydrostatic drive units is foreseen on this machine.
This manual only describes the operations relating to the application of the machine units; reference to the drive unit's Manufacturer's Manual is recommended for information regarding servicing, disassembly and replacement of components.

Related topics

[☛ 1.1] Identification of components



RELATED TOPICS:

Adjustments and tuning

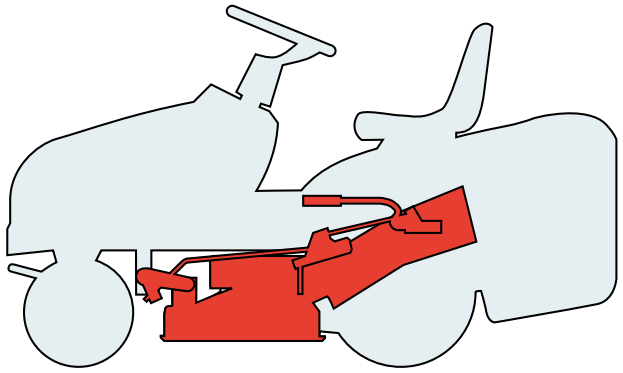
Removal of external parts and main assemblies

Repairs

General informations

The terms “Cutting deck” or “Equipment” refer to the cutting-means assembly, connected to the machine PTO by means of a belt.

Related topics



RELATED TOPICS:

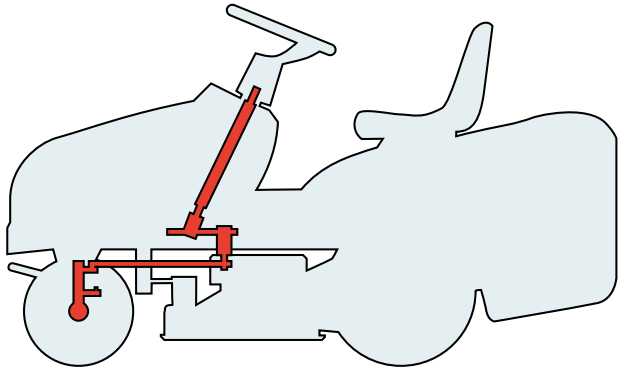
Adjustments and tuning

Removal of external parts and main assemblies

Repairs

General informations

Related topics



RELATED TOPICS:

Adjustments and tuning

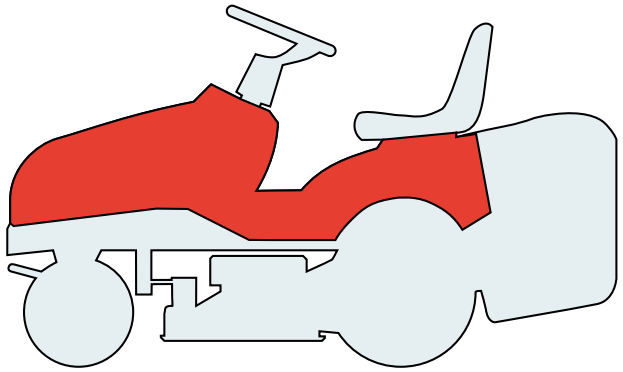
Removal of external parts and main assemblies

Repairs

General informations

Different outfittings are foreseen for this machine which can imply the use of different bodywork designs.
The operations described herein are applicable to all versions, except for instructions provided for each specific outfitting.

Related topics



RELATED TOPICS:

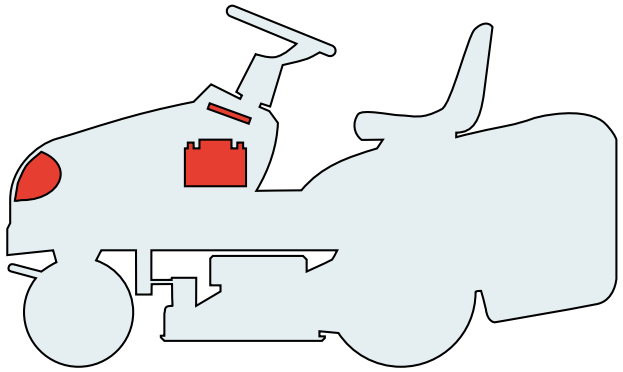
Adjustments and tuning

Removal of external parts and main assemblies

Repairs

General informations

Related topics



RELATED TOPICS:

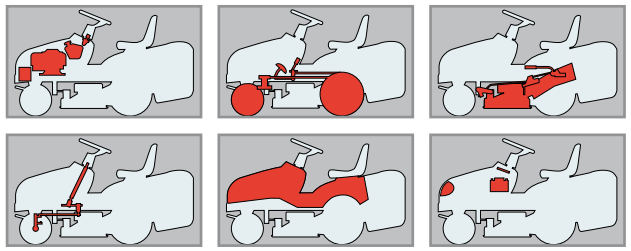
Information and Verifications

General informations

This chapter covers all the main aspects of the relationship between the Manufacturer and the Service Centres.
A close collaboration between the Manufacturer and the Service Centres is conclusive for solving problems in the most effective way as well as maintaining an image of efficiency and reliability.
Compliance with these brief and simple guidelines will facilitate this task and prevent general misunderstandings and time-wasting for both the manufacturer and the service centre.

Related topics

Map of functional units

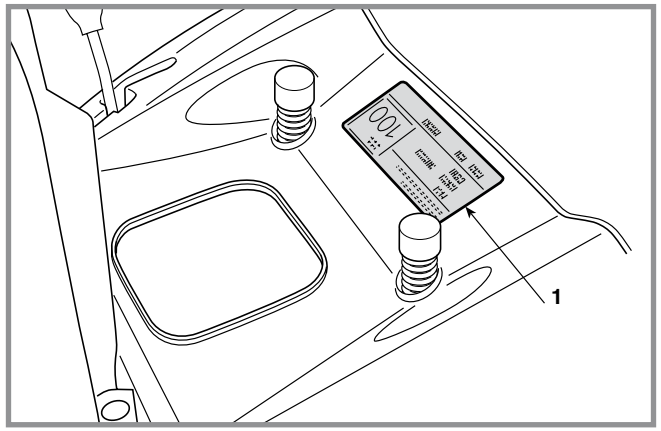


A) Identification

1) Machine

Each machine has a label attached (1) under the driver's seat which shows the technical specifications, the model and the serial number..

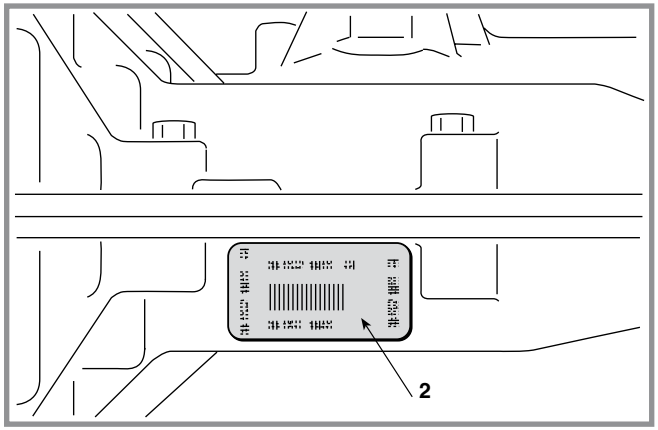
The model and serial number must be shown on each repair sheet when requests are made under guarantee, and are indispensable for spare part orders.



2) Transmission

The transmission unit (both mechanical and hydrostatic) is made up of an engine block including the rear axle. This unit is made by another manufacturer to our precise technical specifications which differentiate it from similar items by this same Manufacturer.

The serial number on the label (2) clearly identifies the product and its specifications. This number must always be quoted when requesting spare parts or any information from the Manufacturer.



3) Engine

The engine is made to precise technical specifications which differentiate it from similar items by this same Manufacturer.

The serial number on the label clearly identifies the product and its specifications. This number must always be quoted when requesting spare parts or any information from the Manufacturer.

B) Guarantee validity

The guarantee is supplied under the terms and the limits of the contractual relations in being. As far as the engine and the transmission unit are concerned, the conditions given by their respective manufacturers apply.

C) Service repairs after guarantee period

The Service Centre has to make out a report containing the machine's serial number, a summary of the problem, the repairs carried out and any spare parts used for each repair done on the machine.

A copy of this report must be retained to be made available to the Manufacturer together with the parts in case of any subsequent disputes with Customers.

D) Fault notification

The Manufacturer welcomes any notifications of faults that recur with particular frequency. It gives the opportunity for a careful inspection of the problem and the implementation of corrective action at production level.

Similarly, the Manufacturer will notify of any faults discovered on the machines produced, with recommendations for the most suitable procedures for their remedy.

E) Spare parts request

When requesting spare parts, the code number must be given, referring to the exploded charts for the year of manufacture, shown on the identification label.

General informations

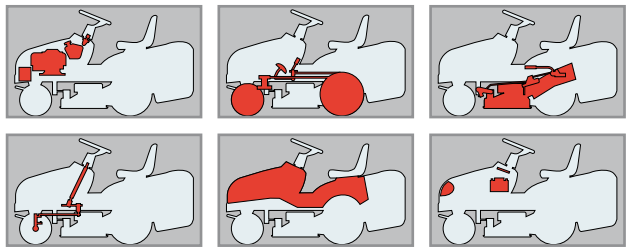
This chapter covers the main aspects of a servicing procedure and the general rules for guaranteeing a successful service which respects the safety of the machine.

Related topics

[☛ 2.2] Tools

[☛ 7.3] Safety microswitches operation check

Map of functional units



A) Qualification of operators

All maintenance, disassembly and repairs must be carried out by expert mechanics who are familiar with all the accident prevention and safety regulations after reading through the procedures in this manual.

B) Safety measures

All the machines are manufactured in accordance with the strict European safety regulations in force.

To maintain these levels of safety in the longer term, the Service Centres should work to this end by making appropriate checks every time there is the chance to do so.

Particularly, every time there is work done on the machine the Service Centre should:

1) check:

- that safety microswitches are working correctly;
- that the casings and protection covers have not been removed;
- that the labels with instructions or provisions have not been removed or have become illegible (these form an integral part of the safety system).

2) they should also:

- restore to proper working order any safety devices which have been manipulated or removed;
- reattach inefficient, damaged or missing casings and protection covers;
- replace illegible labels;
- not endorse any repair or modification on the machine or the engine which results in a change in performance or use that is incorrect or different from the purpose for which it was designed and approved;
- warn the Customer that the failure to comply with the above points results in the automatic annulment of the Guarantee and the Manufacturer declines all responsibility, as also shown in the Instruction Booklet.

C) Precautions during servicing

The operations described in this manual do not entail particularly hazardous situations besides the normal hazard related to mechanical operations and that can be avoided by taking the necessary care and attention normally required for this type of work.

As well as following the usual accident prevention regulations that apply to most repair shops, we recommend you:

- taking out the ignition key before beginning any repair work.
- protect hands with suitable working gloves, especially when working near the cutting unit;
- check that you do not cause accidental petrol leaks or other losses;
- do not smoke when working on the tank or when handling petrol;
- do not inhale oil or petrol fumes;
- clean up all traces of spilt petrol immediately;
- test the engine in a well-ventilated environment or where there are adequate exhaust fume extraction systems;
- do not pollute the environment with oil, petrol or other waste and dispose of all waste in accordance with the laws in force;

– ensure that other persons cannot accidentally carry out actions that may physically endanger those working on the machine.

D) Necessary equipment

All the operations can be carried out with the tools normally used in a good garage.

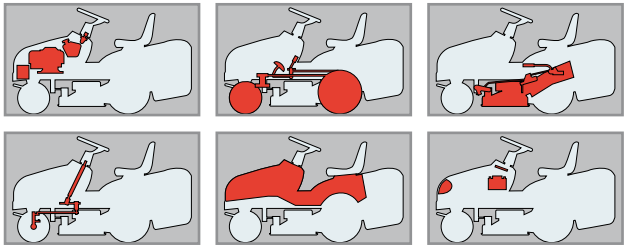
Some operations require special equipment and tools.

General informations

This chapter covers the main aspects of a servicing procedure and the general rules for guaranteeing a successful service which respects the safety of the machine.

Related topics

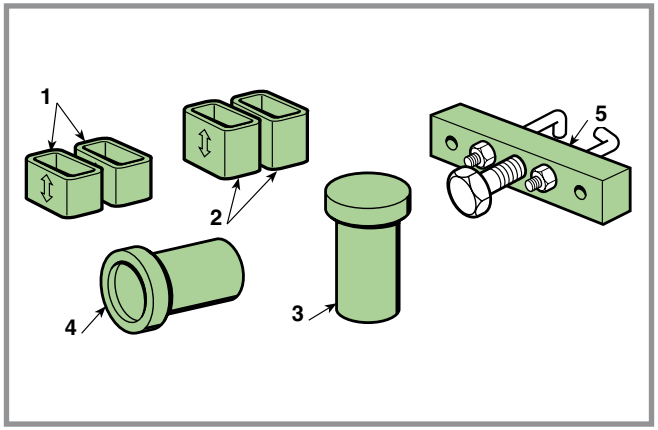
Map of functional units



All work can be carried out using the tools normally available from a good workshop. However, it is advisable to have a set of special tools.

These tools are to be used whenever is given in the text.

1. Blocks H = 26 mm for adjusting the cutting deck
2. Blocks H = 32 mm for adjusting the cutting deck
3. Bush for assembly of blades bearings
4. Stopper for assembly of wheel bearings
5. Pulley extractor

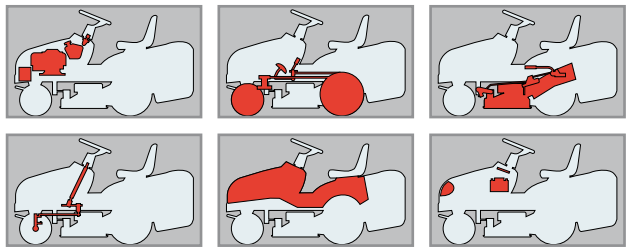


General informations

This chapter covers the main aspects of a servicing procedure and the general rules for guaranteeing a successful service which respects the safety of the machine.

Related topics

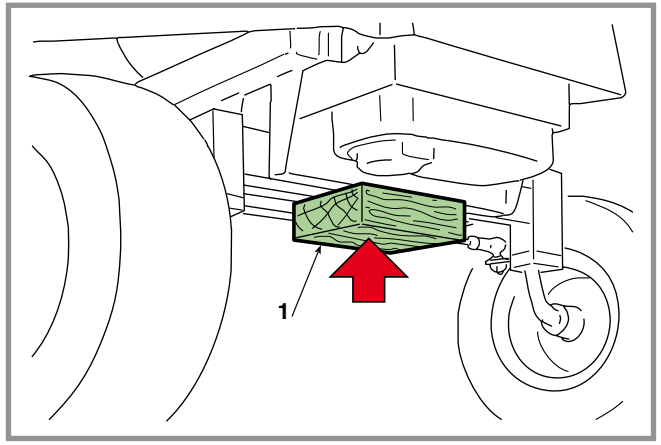
Map of functional units



DANGER! ***The machine must never be lifted using a hoist or other lifting equipment which uses cables.***

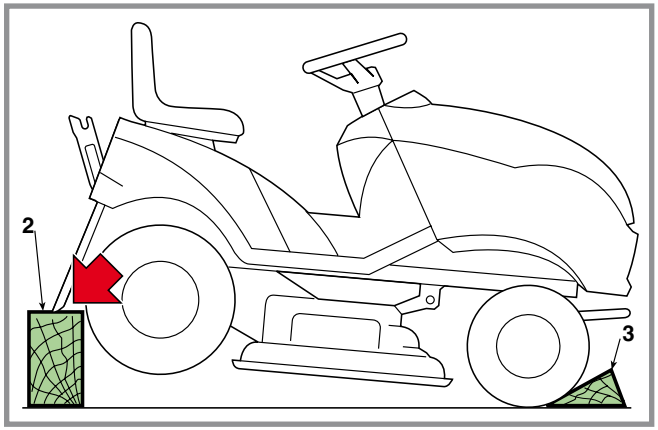
A) Front

Once the parking brake has been engaged, the machine can be lifted using a jack which pushes on the underside of the frame, placing a wood block (1) between the base of the jack and the frame and checking to see that the free movement of the front spring equaliser has not been obstructed.



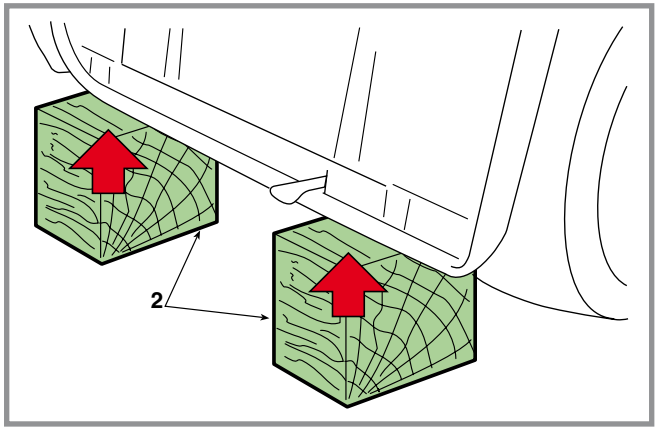
B) Rear

Position two suitably sized wedges (3) in front of the front wheels to prevent all uncontrolled movement of the machine.



Position a jack under the transmission unit and lift it enough to place two suitable blocks (2) beneath the lower edge of the rear plate.

Release the jack and make sure the machine is stable before starting any work.

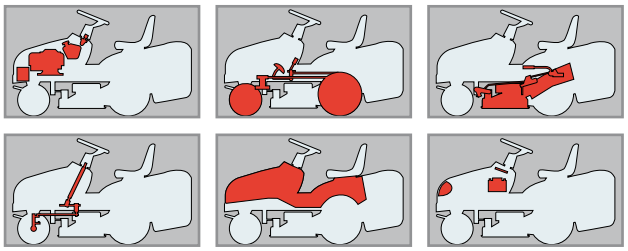


General informations

This chapter covers the main aspects of a servicing procedure and the general rules for guaranteeing a successful service which respects the safety of the machine.

Related topics

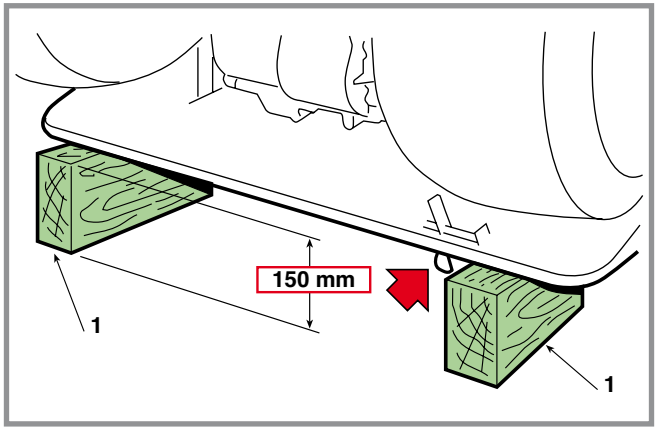
Map of functional units

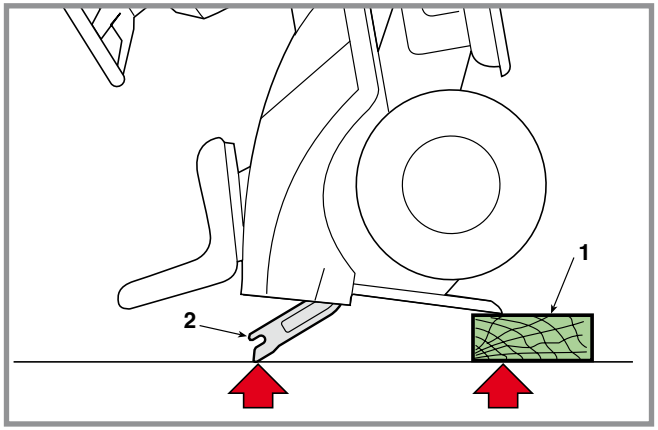


WARNING! ***Two people will be needed for this operation. When lifting and tipping backwards, only solid parts should be gripped (steering wheel, frame, rear plate, etc.) and NEVER parts of the bodywork in plastic.***

The tank must be checked before putting the machine in a vertical position to make sure that there is no more than 2 litres of fuel inside.

To assure full stability, the machine must only be rested on the points shown, inserting two blocks (1) of about 150 mm under the lower edge of the plate and taking care not to damage the parts in plastic and the grass-catcher mounts (2).





WARNING! ***Before carrying out any type of work make sure that the machine is completely stable, and avoid operations that could cause it to fall over.***

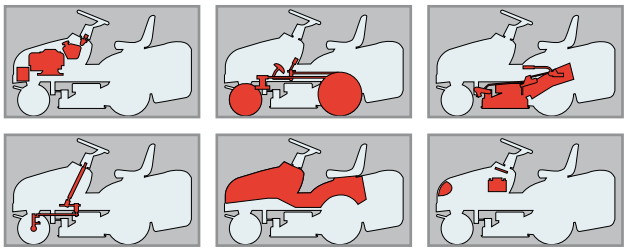
WARNING! ***Be just as careful when putting the machine back on a flat surface; two people are needed for this operation.***

General informations

This chapter covers the main aspects of a servicing procedure and the general rules for guaranteeing a successful service which respects the safety of the machine.

Related topics

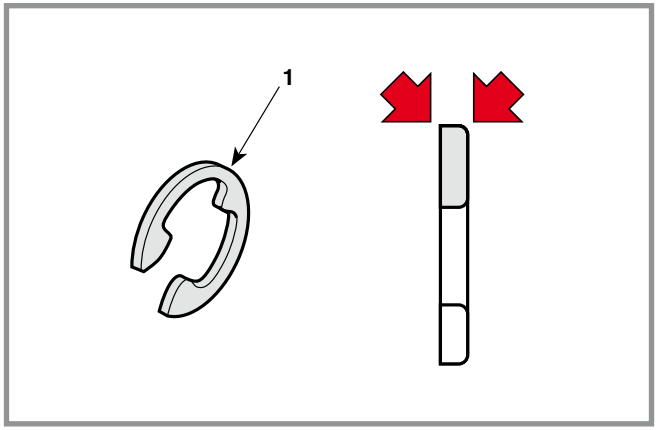
Map of functional units

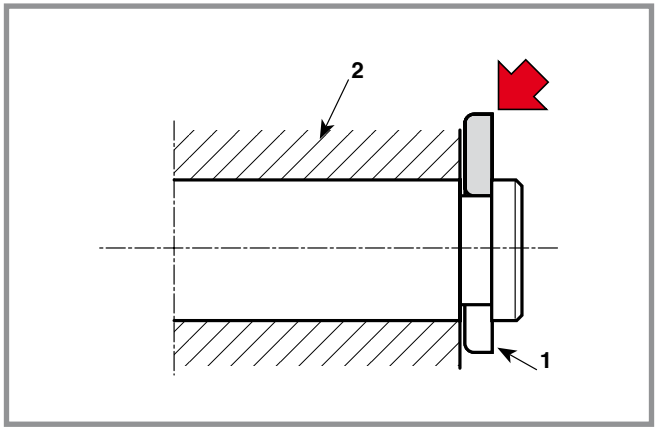


A) Fitting snap rings

One side of the “Benzing” snap rings (1) has a rounded edge and the other a sharp edge.

For maximum grip the rounded part needs to be facing towards the element to be held (2), with the sharp edges on the outside.



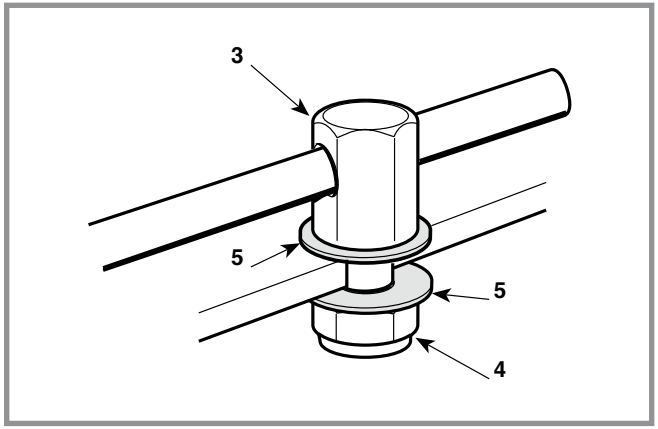


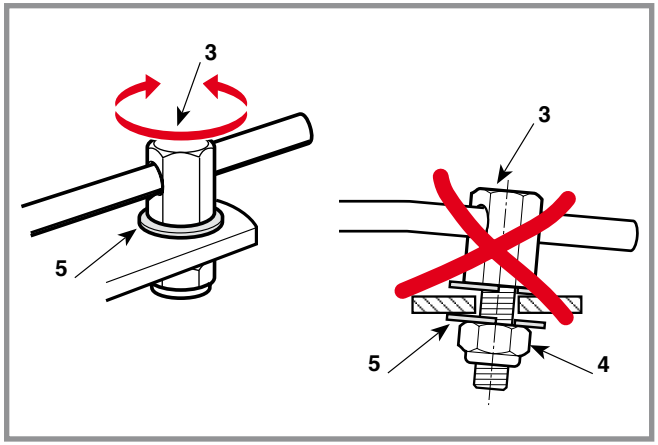
B) Joint pivot pins

There are a large number of pivot pins, usually connected to rods, that need to be able to move in various directions.

A typical situation has the pin (3) fixed by a self-locking nut (4) with two anti-friction washers (5) in between the pin (3) and the support element, and between this and the nut (4).

Since these are joints, the nut must never be tightened completely but only so much that it can ensure the free rotational movement of the pin on its axis without, however, creating excessive free play which could result in the parts concerned becoming misaligned and failing to work correctly.



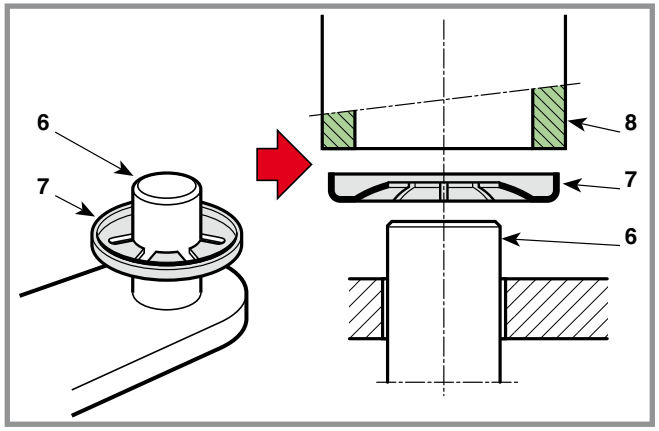


C) Crown fasteners

Some pin ends (6) are secured by crown fasteners (7). During dismantling, these fasteners are always damaged and lose their hold, so they should never be reused.

On assembly, make sure it is inserted in the right direction and push the fastener (7) onto the pin using a pipe or socket spanner (8) with the right diameter, so that it can be fitted without deforming the fastener “crown”.

IMPORTANT *A deformed fastener should always be replaced.*

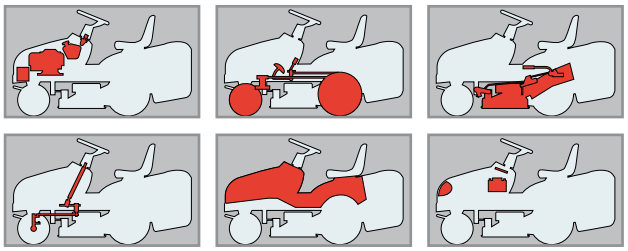


General informations

In questo capitolo vengono trattati i criteri di intervento per la manutenzione ordinaria.

Related topics

Map of functional units

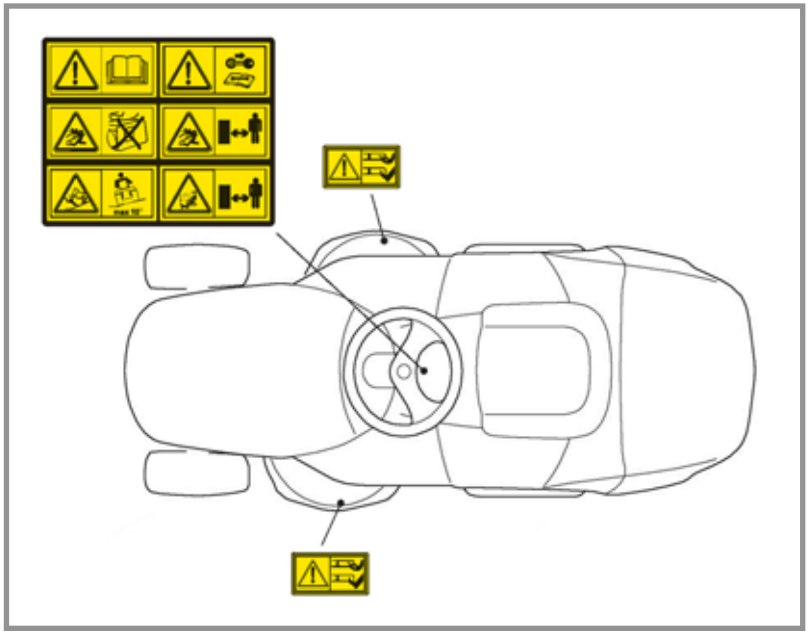


The Instruction Handbook has a number of operations to be carried out by the Customer for a minimum of basic maintenance, and other operations not always within his capacity.

For this reason the Service Centre should undertake to keep the machine in perfect working order in two ways:

A) Tuning the machine whenever possible.

B) Proposing a regular maintenance programme to the Customer to be carried out at prearranged intervals (for example, at the end of the summer or prior to a long period of inactivity).



A) Occasional tuning

- Check working order of safety devices and renew illegible or missing labels, following the layout below
- Check tyre pressures
- Clean air filter
- Check engine oil level
- Check for fuel leaks
- Aligning the cutting deck
- Sharpen and balance the blades and check the condition of the hubs
- Check for wear in the belts
- Check the blade brake engagement
- Grease front wheels lever joint pins and bushes
- Check tightness of engine screws
- Check all those items indicated in the engine manual

B) Routine maintenance

- All work carried out in section a), plus:

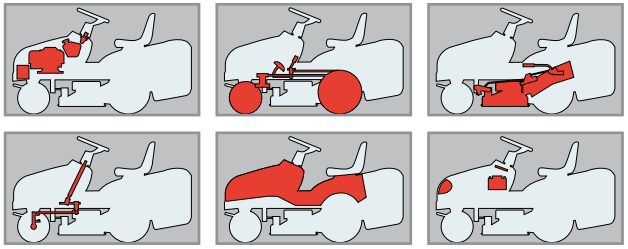
- Check battery charge
- Check tension of belts
- Adjust drive engagement (➤ *mechanical drive models)*
- Adjust brake
- Adjust blade engagement
- Adjust blades brake
- Check steering allowance
- Check front bearings
- General lubrication
- Clean away grass cuttings and wash exterior
- Clean and wash inside cutting deck and collector chnnel
- Clean and wash grass-catcher
- Touching up of any damaged paint

General informations

This chapter helps achieve a rapid identification and solution to the most recurrent problems, classified according to the operating unit in question.

Related topics

Map of functional units



1. Engine and Tank

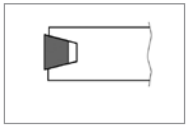
Problem	Probable cause	Solution	☛
Starter motor does not run	Low battery	Recharge	[7.9]
	No starter relay contact	Check	[7.6]
	Faulty connector and/or starter motor failure	Check and/or replace	[*]
The starter motor runs but the engine does not start	Blown spark plug electrode	Replace the spark plugs	[*]
	Uncertain connections	Check the connectors	–
	Coil failure	Check and/or replace	[*]
	The carburettor solenoid valve does not open	Check	[*]
	No fuel is pumped to the carburettor	Check the filter, fuel pump (if applicable) and the carburettor	[*]
The engine runs irregularly and/or lacks power Dense and/or blue exhaust fumes	Faulty ignition	Check the spark plugs and ignition system	[*]
	Low fuel level in the tank	Top up	–
	Dirty or old fuel	Empty the fuel tank and add fresh fuel	–
	Clogged carburettor filter	Check and clean	[*]
Black exhaust fumes	Excessively oily carburetion	Check the starter and command cable	[*]
Engine overheating	Spark plugs with inadequate heat rating	Check	[*]
	Carburetion problems	Check the carburettor	[*]
	Insufficient oil level	Check and top up	[*]
	Clogged suction system	Check and clean the air filter and the suction pipe	[*]
	Dirty cooling flaps	Clean	[*]
	Broken cooling fan	Replace	[*]
Engine idling speed is too high or too low.	Incorrect cable adjustment	Adjust	[6.8]
Abnormal noise and vibrations	Loose bolts and screws	Check and tighten to the prescribed values	[5.5]

[*] Check the engine Manufacturer's Manual

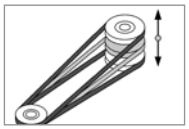
Important informations

Characteristics of the original belts

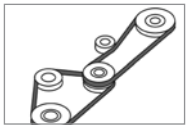
The standard belts on the market have different characteristics compared to the requirements of the original spare belts, supplied by the authorised dealer. The latter are designed and manufactured in close cooperation with the belt supplier and the machine manufacturer.
Here are the reasons why it is important to choose an original belt, useful when making such decisions..



a) Adhesion on the pulley. *The belt rests with the sides inclined against the walls of the pulley. There must be a gap between the belt and the bottom of the groove.*



b) Floating pulley on cutting equipment. *The original Power Take Off (PTO) belt is designed to work even if the pulleys move up and down and tilt at the same time.*



c) Curvature in two directions. *All the original belts, which work with tensioning arms acting on the external side, are equipped with reinforcements. The reinforcement is designed specifically for these specific cases..*

2. Transmission - Brakes - Wheels

Problem	Probable cause	Solution	☛
The machine moves slowly, looses power or doesn't move at all	Slack belt	Adjust	[4.3]
	Worn or oily belt	Replace	[6.4]
	Broken pulleys	Replace	[5.5] [*]
	The brake is not adjusted correctly	Check and adjust	[4.2]
	Hydrostatic unit failure [1)]	Check the Manufacturer's Instruction Manual.	[*]
The machine will not move in either direction	Pulley splines broken	Replace	[*]
	Hydrostatic unit failure [1)]	Check the Manufacturer's Instruction Manual.	[*]
The machine does not reach the foreseen speed in forward drive [1)]	Incorrect pedal adjustment [1)]	Adjust	[4.4]
Uncertain or ineffective braking	The brake is not adjusted correctly	Check and adjust	[4.2]
Hydrostatic unit over-heating [1)]	Insufficient oil level [1)]	Top up	[*]
	Clogged oil filter [1)]	Clean and/or replace	[*]
Abnormal noise and vibrations	Slack or worn belt	Check and/or replace	[6.4]
	Irregular fan rotation	Check the condition of the fan, that it is securely fastened in place and that nothing interferes with the rotation movement	[*]
	Incorrect positioning of the by-pass valve [1)]	Check and adjust	[*]
	Loose bolts and screws	Check and tighten to the prescribed values	[5.6] [5.6a] [5.6b]
The machine moves in neutral gear [1)]	Incorrect micro-switch adjustment [1)]	Adjust	[4.4]
	Slack or worn linkage system [1)]	Check and/or replace	[4.4]
Pushing the machine by hand is difficult [1)]	By-pass partially enabled [1)]	Check	[*]
The parking brake does not stop the machine on a 30% slope	Incorrect brake adjustment	Adjust	[4.2]
Excessive clearance on the front wheels	Worn bearings	Replace	[6.2]

[1)] Hydrostatic drive models

[*] Check the transmission unit Manufacturer's Instruction Manual.

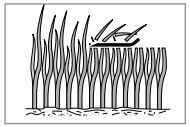
Important informations

Characteristics of the original blades

The original blades have design, material and processing characteristics optimised for use on the equipment for which they were designed; these characteristics are not present in so-called "compatible" spare parts.
Here are the reasons why it is important to choose an original blade, useful when making such decisions.

a) No breakage of the blade ends. *Using steel balls, the manufacturer simulates what can happen when mowing over any foreign bodies on the lawn. This can ruin the blade edge, but no component can come loose, fall off or be hurled away.*

b) No breakage of the blades. *The impact test is the most severe durability test that any lawnmower can be subjected to. An iron tube is placed exactly inside the blades when the mower is running. The blade may deform but it will never, under any circumstances, fall off or break. This test verifies that blades and other components meet the high safety requirements.*



c) Excellent cutting result. *The blades and blade ends supplied by the authorised dealer are optimised for the application for which they are intended. In short, this means that the blades are suitable for the shape of the casing and to the number of revolutions to provide the best possible cutting result.*

3. Cutting deck

Problem	Probable cause	Solution	☛
The blades do not engage or do not stop promptly within 5 seconds when they are disengaged	Slack belt	Adjust the engagement	[4.1]
	Incorrect adjustment of the engagement spring	Adjust the engagement	[4.1]
	Electromagnetic engagement problems	Check and/or replace	[7.5]
Uneven mowing	Cutting deck not parallel to the ground	Check the tyre pressures	[6.1]
		Align the cutting deck with the ground	[4.5]
	Blades cutting badly	Check their condition and that they are well sharpened	[4.9]
	Misaligned blades	Check the blade shafts and flanges	[4.8]
Abnormal noise or vibrations	Loose joint bolts and screws	Check and adjust	[5.7]
	Pulleys or guide pulleys are worn and do not rotate correctly	Check and/or replace	–

4. Steering

Problem	Probable cause	Solution	☛
Excessive clearance on the steering wheel	Worn pinion and crown teeth	Adjust and/or replace	[4.6] [6.3]
The machine does not maintain a straight line when the steering wheel is straight	Incorrect tie-rod adjustment	Adjust	[4.7]

ADJUSTING THE ENGAGEMENT AND CHECKING THE BLADE BRAKE

General informations

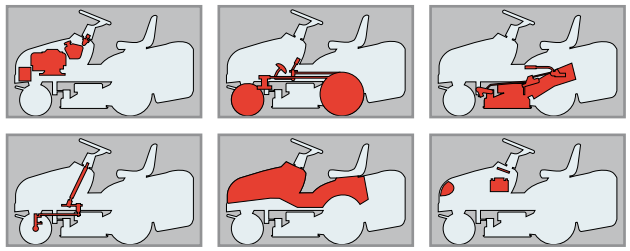
The blades are driven by the engine by means of a "V" belt and are engaged by an electromagnetic clutch.
After a certain amount of use the belt can become longer which can result in malfunctioning, i.e.:
– *belt slipping = belt stretched*
– *difficulty in disengaging, with the blades continuing to run = belt shortened*
In both cases the stretcher needs to be adjusted.
Disengaging the blades causes the cutting in of a brake, incorporated in the electromagnetic clutch, whose task is to stop the blades from rotating within five seconds.

Related topics

[☛6.6] Replacement of the blades control belt

[☛7.5] Electromagnetic clutch check

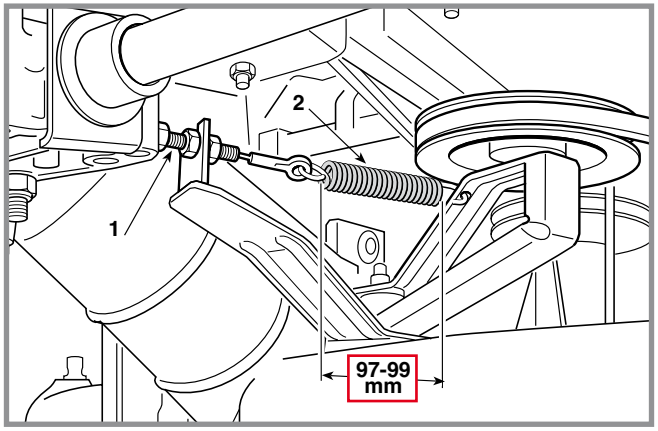
Map of functional units



A) Adjusting blade engagement

WARNING! ***When adjusting the engagement it could be necessary to remove the belt guards; in this case the guards must always be replaced after adjustment.***

With the cutting deck in its lowest position, look for the adjuster (1) which can be reached from the wheel arch of the right-hand rear wheel. Turn the nuts until the spring (2) reaches the length 97 ÷ 99 mm, measured from the outer edge of the eyelet with the blades engaged.



B) Checking the blade brake

WARNING! ***Correct operation of the brake, which must ensure that the blades stop within 5 seconds from disengagement; longer stopping times do not comply with the safety standards.***

If the blades do not stop within 5 seconds from disengagement, appropriate checks must be made to the electrical system and the clutch must be replaced if no result is achieved.

General informations

Reduced braking power is corrected by adjusting the spring on the brake rod.

Related topics

[☛1.1] Identification of transmission unit

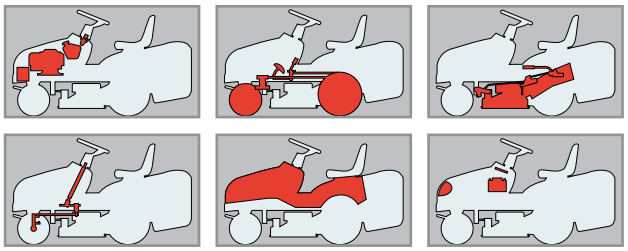
[☛5.6] Removal of the rear axle (Peerless MST 205-535 E)

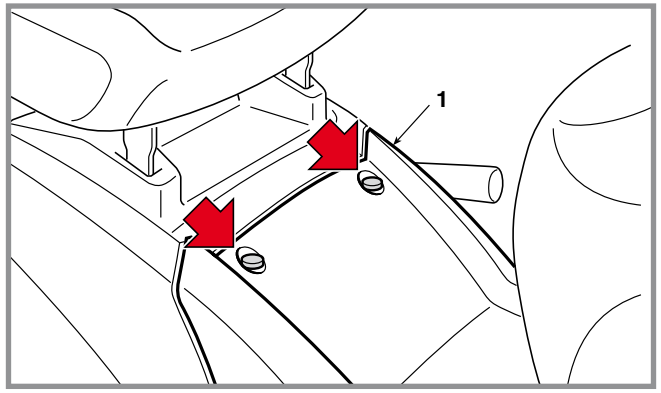
[☛5.6a] Removal of the rear axle (Hydro-Gear T2-ADBF-2X3C-17X1)

[☛5.6b] Removal of the rear axle (Tuff Torq K46S)

[☛6.9] Replacement of the brake pads and disc

Map of functional units





The brake adjustment spring can be accessed by removing the inspection hatch (1).

The adjustment is to be made with the parking brake engaged and consists of altering the length of the spring (2) to the best measurement. The braking capacity is increased by screwing the nut down on the rod (and thus shortening the length of the spring).

Loosen the nut (4) which retains the bracket (5) and then turn the nut (6) so that the length «A» of the spring (2) is:

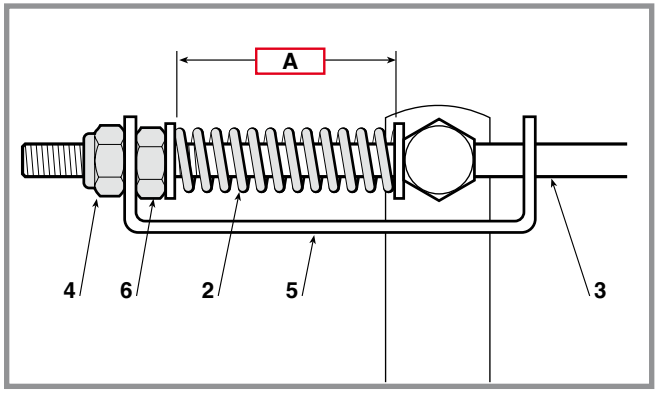
➤ ***mechanical drive models***
43,5 - 45,5 mm (Peerless MST 205-535 E)

➤ ***hydrostatic drive models***
45 - 47 mm (Tuff Torq K46S)
45 - 47 mm (Hydro-Gear T2-ADBF-2X3C-17X1)

measured from the inside of the washers. When the adjustment has been made, tighten the nut (4).

NOTE *Never go under these amounts to avoid overloading the brake unit.*

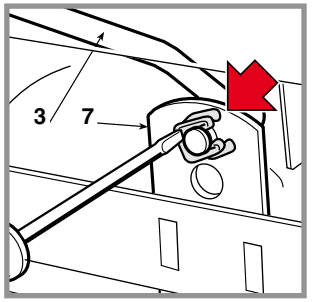
WARNING! ***When the adjustments have been made, the parking brake should prevent the machine from moving on a slope of 30% (16°) with the driver in position.***

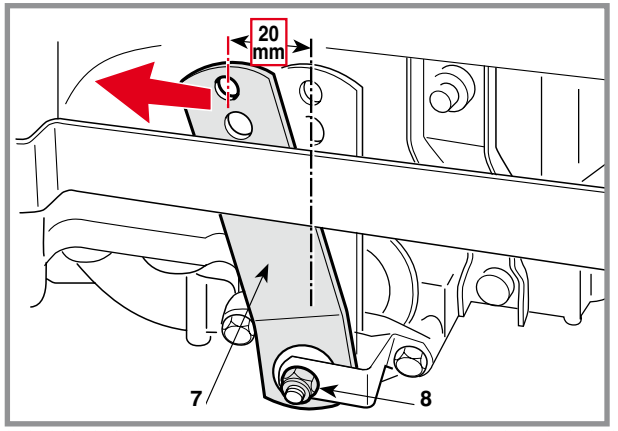


If braking is still poor or uneven even after having made the adjustment, proceed as under indicated, according to the type of transmission fitted on the machine.

➤ ***mechanical drive models***

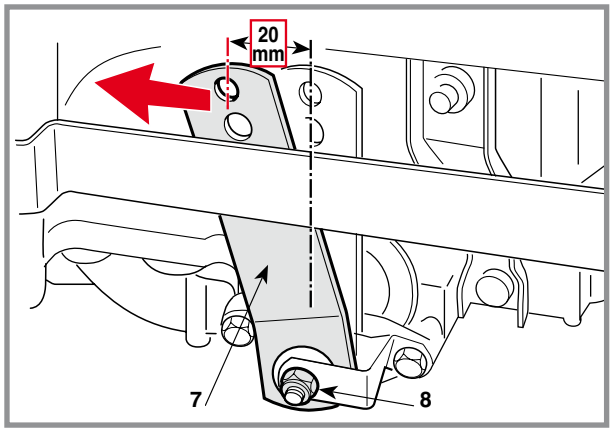
Remove the control rod (3) from the lever (7) and check that this lever has a free movement of 20 mm (measured vertically next to the pin rod) before beginning the braking action. If this is not the case, the free move-





ment can be adjusted with the screw (8), unless the brake pads or discs are so worn that they need replacing.

When connecting the rod (3) be sure to use the uppermost hole in the lever (7) and then check the length of the spring again (2).



➤ ***hydrostatic drive models***

You cannot make any further adjustments from the outside. Therefore you need to dismantle the whole rear axle of the machine and contact one of the manufacturer's Service Centres.

DRIVE BELT ADJUSTMENT

General informations

If it seems that the forward drive is not working properly after a long period of use or after replacing the belt, this may be caused by a change in the length of the belt.

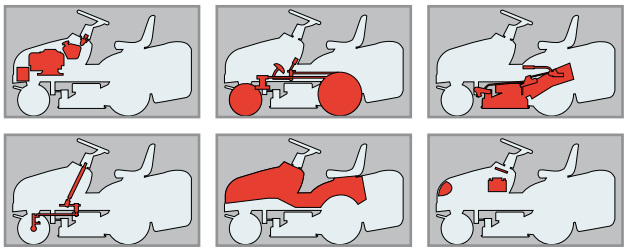
- *A loose belt reduces output from the drive and limits forward movement power;*
- *a belt which is too tight increases noise and results in jerky movements or tipping up when engaging the drive.*

In both cases the stretcher needs to be adjusted.

Related topics

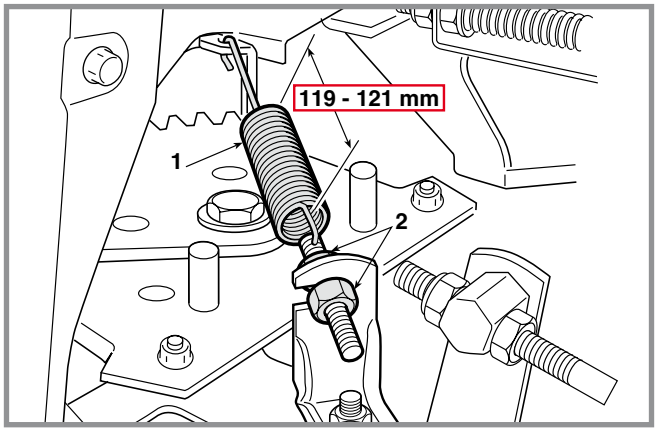
[☛6.4] Replacement of the drive belt

Map of functional units



The stretcher can be accessed from the inspection hatch beneath the seat.

Adjust the tension of spring (1) using nuts (2) to set length «A» of 119 ÷ 121 mm, measured from the outer ends of the springs with the drive commands disengaged.



Following adjustment, fully tighten the nuts (2).

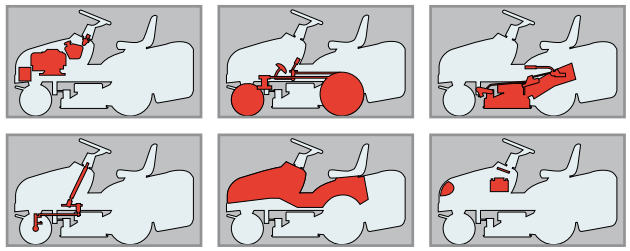
General informations

This operation should be carried out every time the rear axle, pedal or control rod is removed, in order to get the correct travel for the pedal and to reach the envisaged speeds both forwards and in reverse.

Related topics

[☛7.10] Fitting safety microswitches

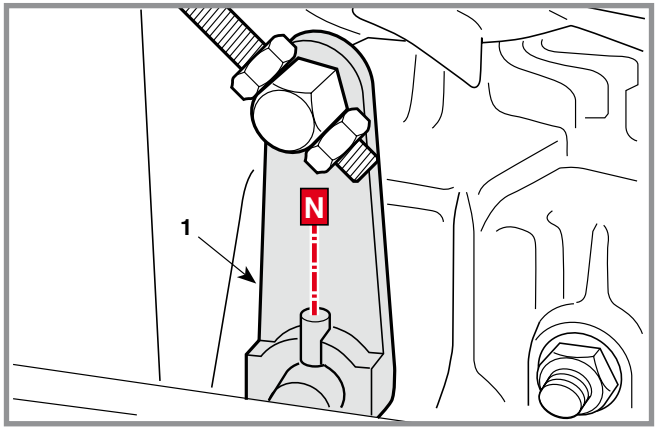
Map of functional units



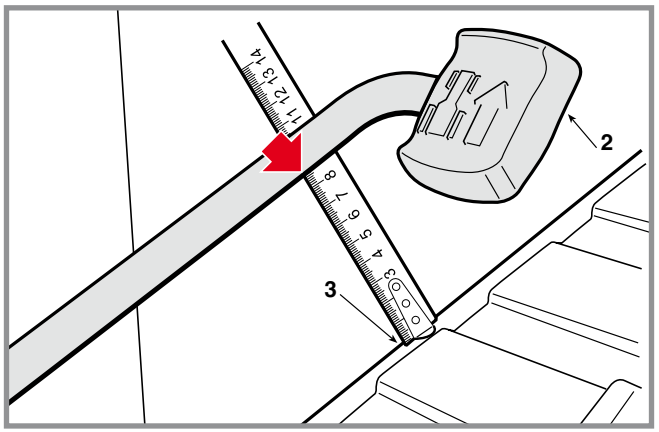
➤ ***hydrostatic drive models only***

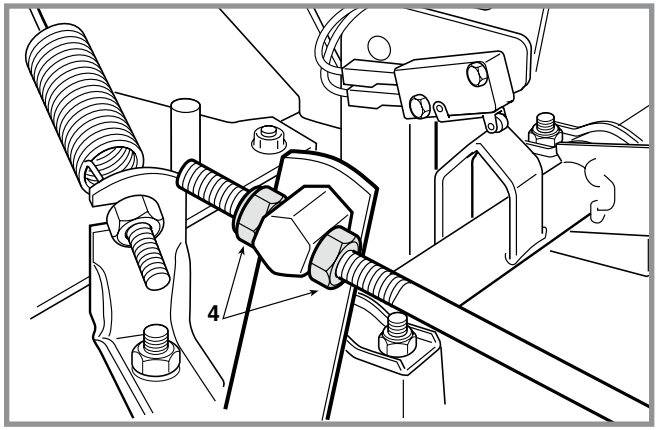
A) Adjusting the pedal in the “neutral” position

The pedal position is to be adjusted starting with the lever (1) of the hydrostatic unit in the “neutral” position. This position «N» is easily recognised, since it is held fast by a check ball.



The pedal (2) is in its best position when, with the hydrostatic group lever (1) in “neutral”, the lower edge of the front inclined section of the pedal itself is at 85 mm from the metal edge of the footboard (3).



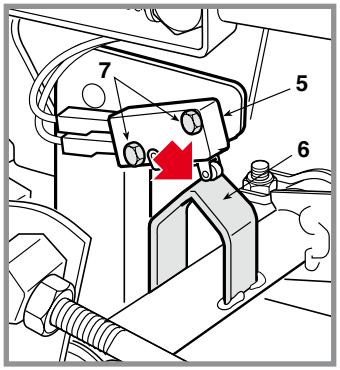


This is obtained by opening the inspection hatch beneath the seat and by turning the nuts (4) appropriately until the required measurement is reached. Take care not to accidentally modify the position of the lever (1) during the adjustment.

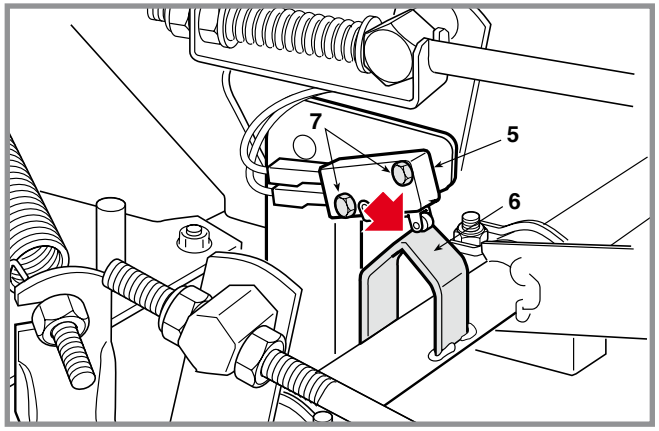
B) Adjusting the “neutral” position of the microswitch

IMPORTANT *This is a very important adjustment for the correct operation of the safety devices for starting and stopping of the machine during work.*

The “neutral” position «N» is indicated by the microswitch (5) of the cam (6), which is reached by the inspection hatch beneath the seat.



After having ensured that adjustment “A” has been made correctly, with the pedal released and thus



in neutral position «N», slacken off the microswitch fixing screws (7) and position it in line with the tip of the cam, so that it remains pressed.

By moving the pedal in the forward, neutral and reverse positions, make sure that the push-button clicks at every position change before the wheels start moving.

General informations

Lowering of the cutting deck is controlled by a linkage activated by the lever and is moved by two connecting rods at the front.
In order to get a good cut it is essential that the cutting deck is parallel with the ground crosswise, and slightly lower at the front.
There are two types of possible adjustments:

a) a combined adjustment to the parallel and the minimum front and back height, to be carried out if the cutting is irregular;
b) adjusting the regularity of raising and lowering.

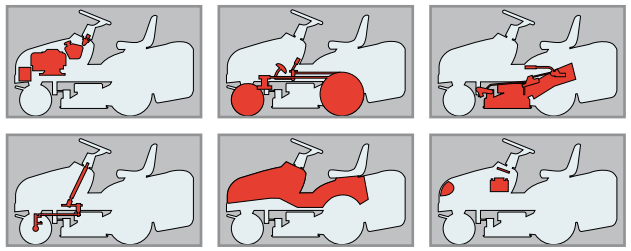
Related topics

[☛ 2.2] Tools

Tightening torques

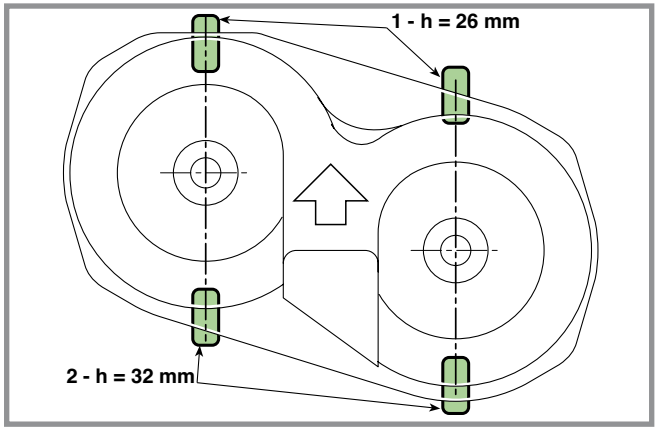
Front	(Tyres 13 x 5.00-6)	1,5 Bar
.....	(Tyres 15 x 5.00-6)	1,0 Bar
Rear		1,2 Bar

Map of functional units



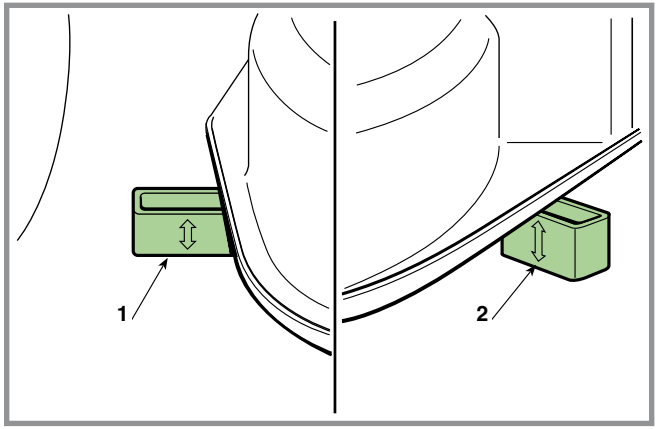
WARNING! ***When aligning the cutting plate it could be necessary to remove the belt guards; in this case the guards must always be replaced after adjustment.***

Check the tyre pressures. If one or more tyres have been replaced or you find differences in diameter, do **not attempt to compensate these differences by giving different tyre pressures**, but make the adjustments as in point "A".



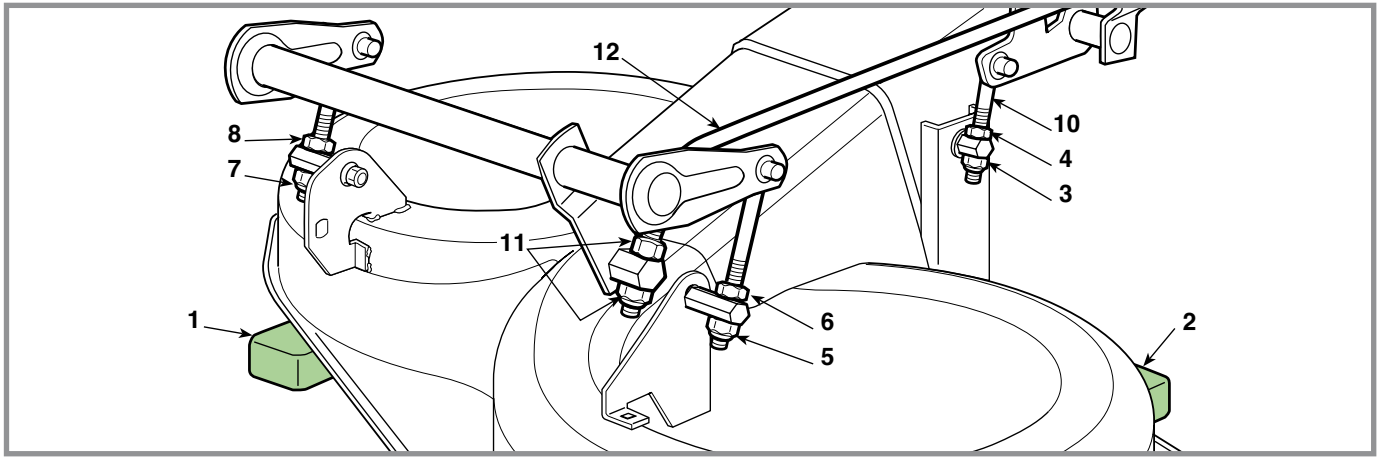
A) Combined adjustment to the parallel and the minimum front and rear height

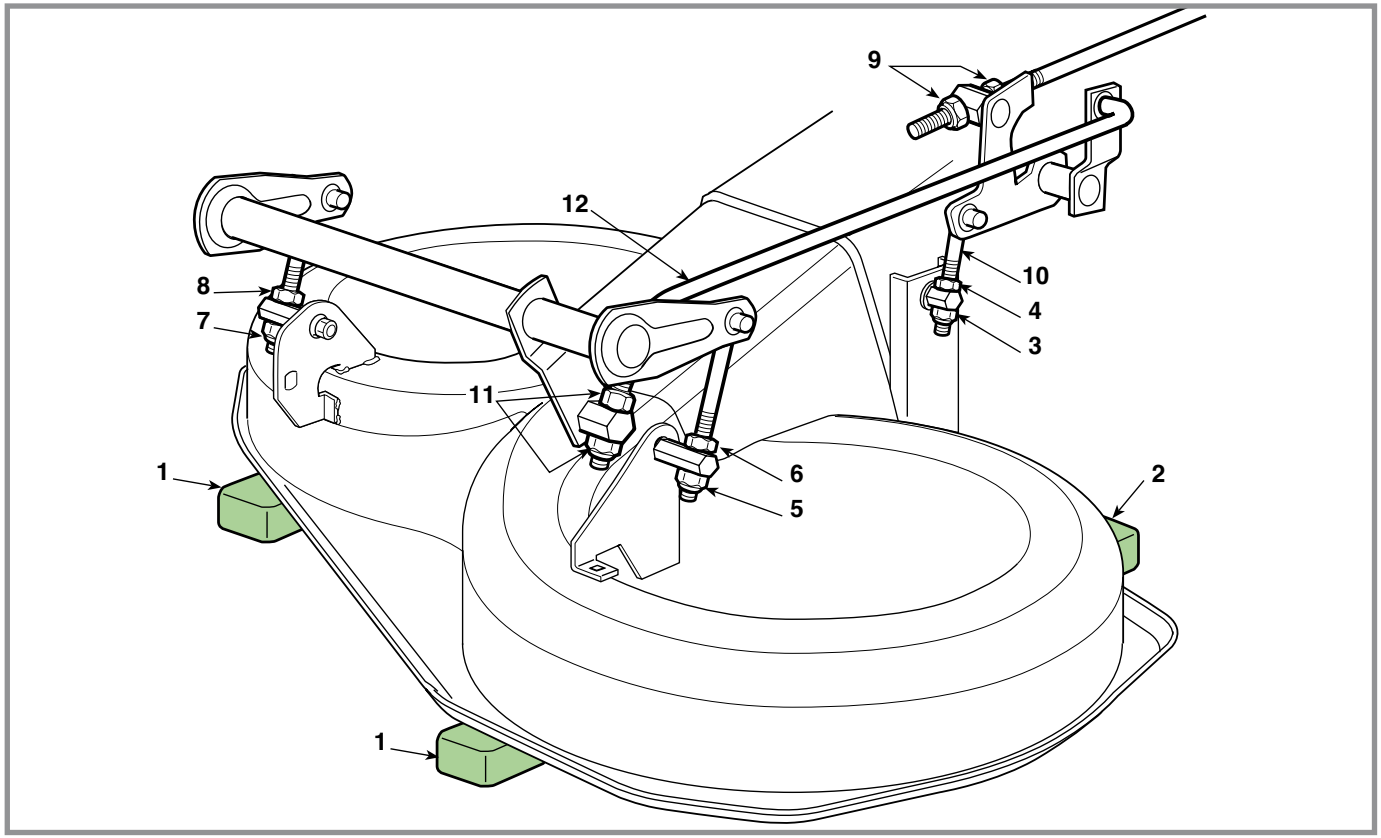
Put the lawn-tractor onto a flat and stable surface (such as a work bench) and put blocks beneath the cutting deck in line with the centre lines of the blades:
- at the front 26 mm (1)
- at the rear 32 mm (2)



Put the height lever in position «1».

Unscrew the nuts (3 - 5 - 7) and locknuts (4 - 6 - 8) so that the deck rests on the blocks.





Turn the nuts (9) (first remove the central covering) so that the rear left connecting rod (10) starts moving at the slightest movement of the lifting lever, and then secure it in place.

Screw down the rear left nut (3) until the rear edge of the cutting deck begins to rise,

Screw down the front nuts (5 - 7) until the front edge of the cutting deck begins to rise evenly, both on the right and left side.

Screw down the three locknuts (4 - 6 - 8).

Check that the deck rises and lowers regularly as indicated in point “B”.

B) Adjusting the regularity of rising and lowering

When the adjustment as at point “A” has been made, put the control lever in 2 or 3 different positions and check that the deck rises evenly and that at each position it constantly maintains the difference in height from the ground between the front and back edges.

If the front edge tends to rise before or after the back edge, turn the nuts (11) on the connecting rod (12); tighten the nuts, the front edge will rise first, while if you loosen them, the back edge rises first.

When you have finished the adjustment, always check that all the nuts and locknuts are tightened securely.

ADJUSTING THE STEERING PLAY

General informations:

Steering play must never be excessive in order not to effect driving precision.

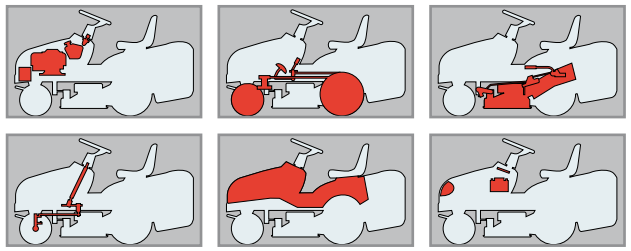
Related topics:

[☛ 4.3] Drive belt adjustment

Tightening torques

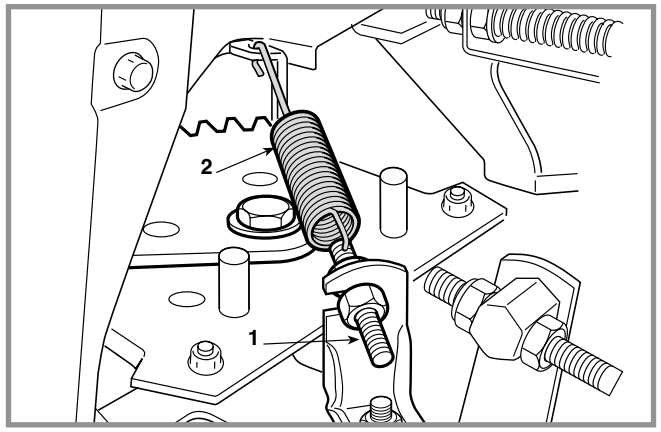
3	Nut for ring gear	45 ÷ 50 Nm

Map of functional units



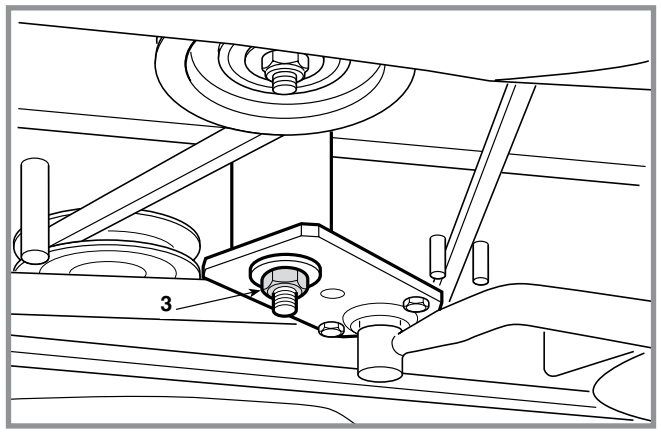
Check that the steering play is not caused by the slackening off of the tie-rod system and fully tighten all the tie-rod and ball joint nuts.

If the play is due to the crown wheel/pinion pairing, the position of the spacer, fitted to lift the crown wheel and reduce the gap between the teeth, must be changed.



To make the adjustment, remove the inspection hatch, slacken off the register (1) and unhook the spring (2) of the traction guide pulley.

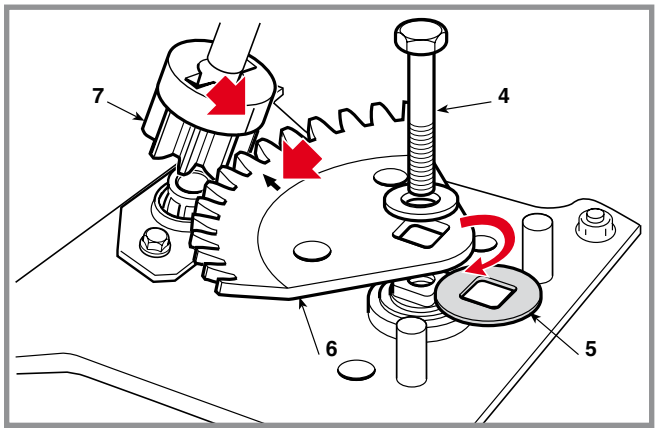
Working from the bottom of the machine, unscrew the nut (3), being careful to adequately support the



crown wheel axle components to prevent them from unthreading themselves completely.

Remove the screw (4) below which the spacer (5) is located.

Remove the crown wheel (6) and fit the spacer (5) under it so as to place it in a higher position with respect to the pinion (7), reducing the gap between the teeth.



⚠ Refit the crown wheel (6), matching up reference (⇒), punched in the centre, with reference (|) of the pinion (7).

Refit screw (4) and nut (3), tightening it to the prescribed value.

Replace the traction guide pulley spring (2) and ...

☛ Adjust the traction engagement

General informations

The correct steering geometry is given by the values of the centre distance between the joints of the tension rod and the wheel connecting rod. Any faults caused by knocks or accidents result in reduced driving precision and increased wear on the tyres. These can be overcome as follows:

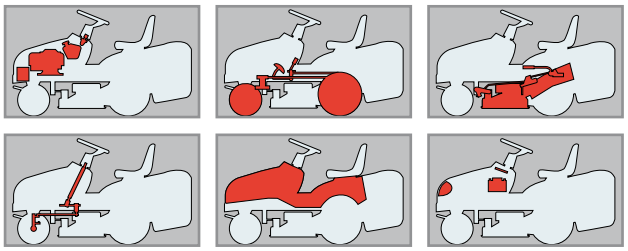
- *uneven or excessive wear on the front tyres = toe-in adjustment*
- *the machine does not maintain a straight line when the steering wheel is straight = adjustment of tie-rods.*

Related topics

Tightening torques

3-4-5-6 Nuts and Locknuts ..... 18 ÷ 20 Nm

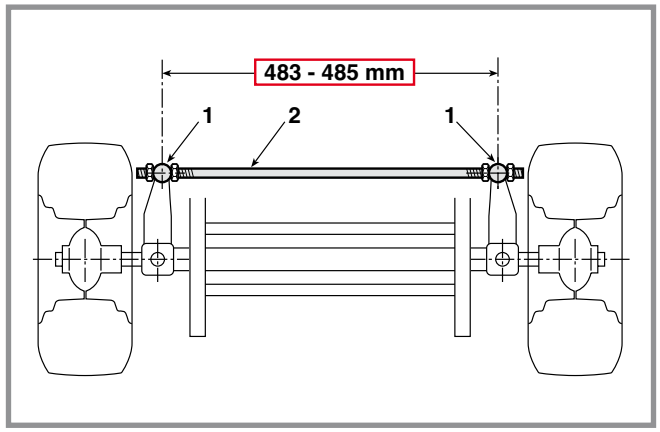
Map of functional units



NOTE *Before any other action, check that the joint fastenings have not worked loose.*

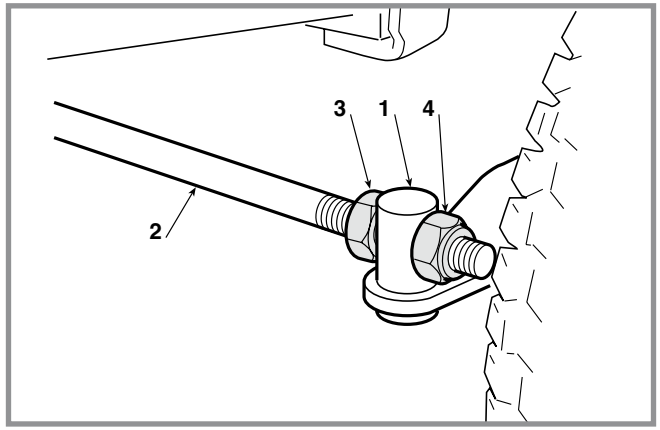
A) Toe-in adjustment

The exact toe-in is obtained with a track of 483-485 mm, measured between the centres of the pins (1) of the wheel connection rod (2).



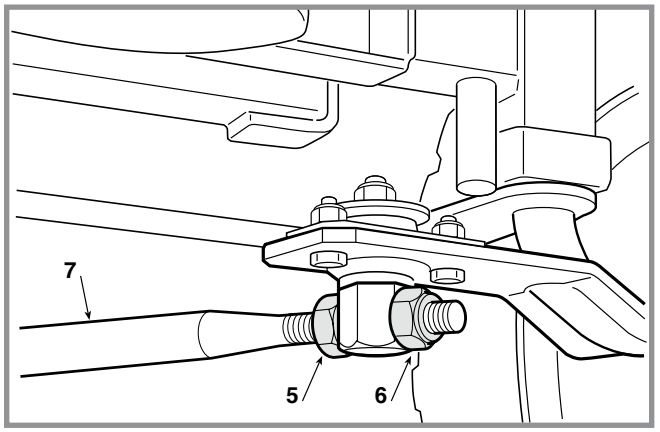
If a different value is detected, suitably adjust the nuts and locknuts (3 – 4), from one or both sides, screwing them in or out on the rod by the amount needed.

Having made the adjustment check that the nuts and locknuts (3 – 4) are fully tightened.



B) Adjustment of the steering wheel

First check the toe-in (point “A”) and align the front wheels.



If the steering wheel is not straight, suitably adjust the nuts and locknuts (5 – 6), screwing them in or out on the rod (7) by the amount needed.

Having made the adjustment check that the nuts and locknuts (5 – 6) are fully tightened.

CHECKING BLADES ALIGNMENT

General informations

Excessive vibration when cutting and an uneven cut can be due to misalignment of the blades owing to deformation of the flanges or the shafts as a result of accidental knocks.

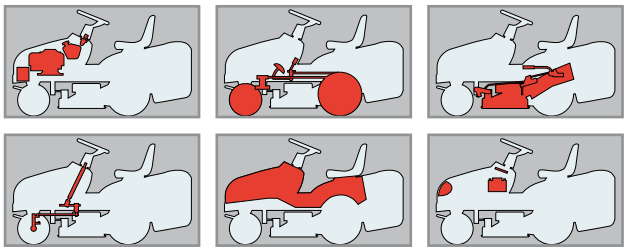
Related topics

[☛ 2.4] Vertical positioning

[☛ 5.7] Removal of the cutting deck

[☛ 6.8] Replacement of the supports and shafts of the blades

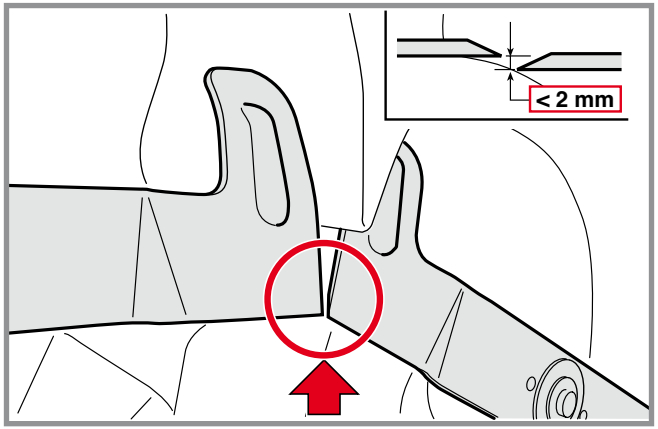
Map of functional units



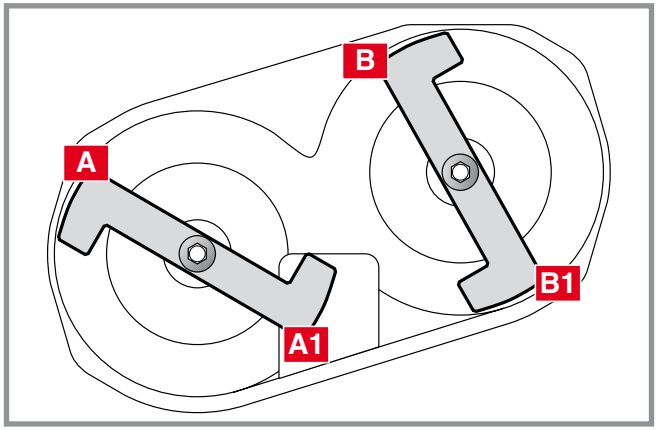
☛ Put the machine into a vertical position
or:
☛ Remove the cutting deck.

WARNING! ***Always wear strong gloves when handling the blades.***

WARNING! ***The blades are connected to each other, the rotation of each blade engages the rotation of the other.***



With the blades disengaged, firmly hold each blade and bring the cutting edges together in the various positions possible (A-B; A-B1; A1-B1; A1-B); at each position they should be aligned to within 2 mm.



If higher amounts are found, check that the blades are not distorted. If this is not the case, check the supports or the shafts for the blades [see 6.9], replacing if necessary, and check the condition of the point where the flanges rest on the cutting deck.

IMPORTANT *Always replace damaged blades and do not attempt to repair or straighten them. Always use manufacturer's genuine spare parts!*

REMOVING, SHARPENING AND BALANCING THE BLADES

General informations

A badly sharpened blade causes grass to become yellow and reduces grass collection capability. If not balanced, excessive vibration can be caused during use.
Fins on broken, bent or damaged blades reduce the grass expulsion force and can cause damage and injuries.

Related topics

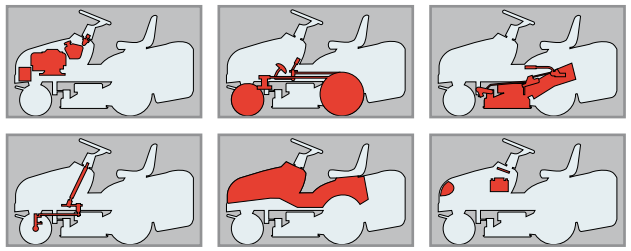
[☛2.4] Vertical positioning

[☛5.7] Removal of the cutting deck

Tightening torques

1a	Screw for left blade	45 ÷ 50 Nm
1b	Screw for right blade	45 ÷ 50 Nm

Map of functional units



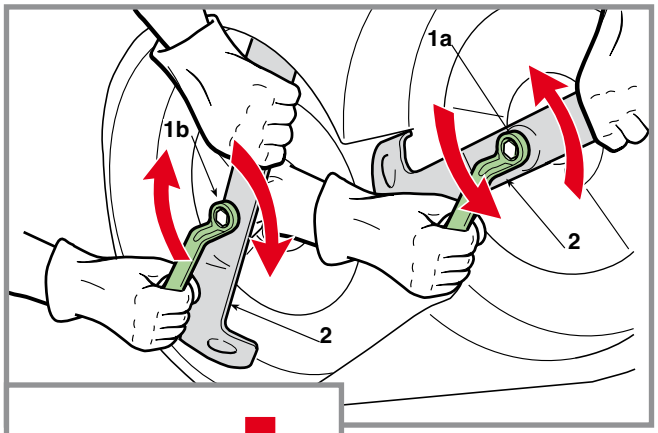
☛ Put the machine into a vertical position
or:
☛ Remove the cutting deck.

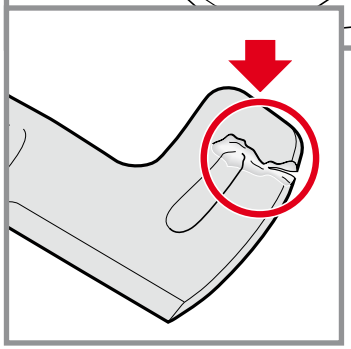
WARNING! ***Always wear protective gloves when handling the blades and protect eyes when sharpening.***

WARNING! ***The blades are connected to each other, the rotation of each blade engages the rotation of the other.***

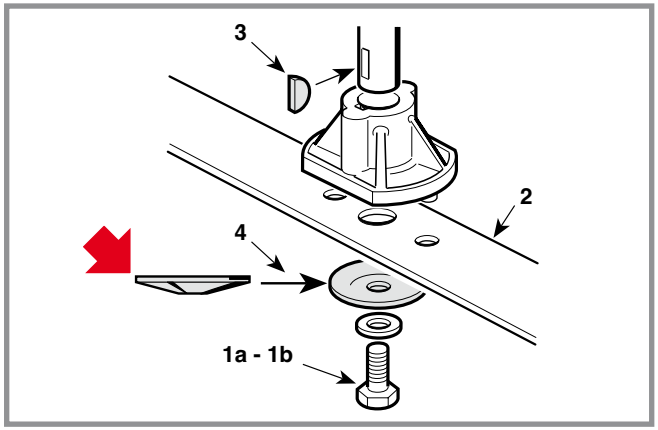
A) Removing and reassembling

For removing a blade it must be firmly held and the central screw (1) undone, bearing in mind that:
– the screw on the left blade (1a) is unscrewed anti-clockwise
– the screw on the right blade (1b) is unscrewed clockwise.



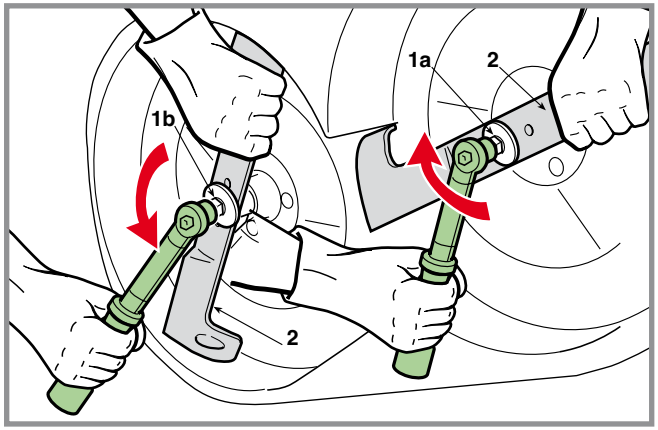


Always check that the fins are intact with cracks or breaks. Always replace damaged blades.



On assembly, be careful to:

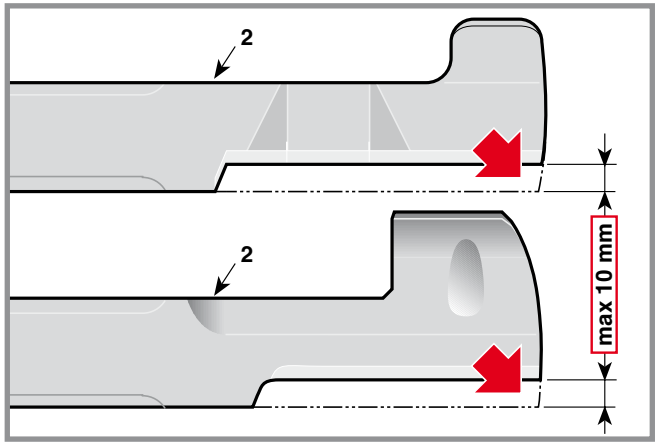
– correctly position the keys (3) on the shafts;
– correctly locate the right and left blades, with the fins facing towards the inside of the plate;
– fit the flexible disc (4) so that the concave part is pressing against the knife;
– tighten the screws (1a – 1b) with a torque wrench set to 45-50 Nm.



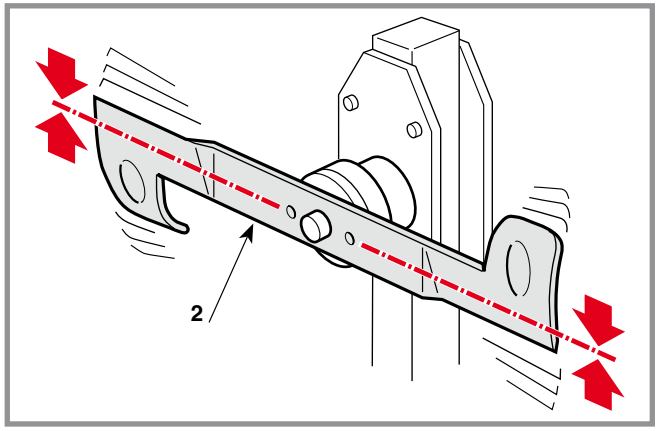
B) Sharpening and balancing

Always sharpen both cutting edges of the blade (2) using a medium grade grinder. Sharpening must only be done from the rounded side, removing as little material as possible.

The blade is to be replaced when the cutting edge has worn down to 10 mm.



Using the appropriate equipment, check the balance to make sure that there is a maximum difference of 2 grams between one side and the other.

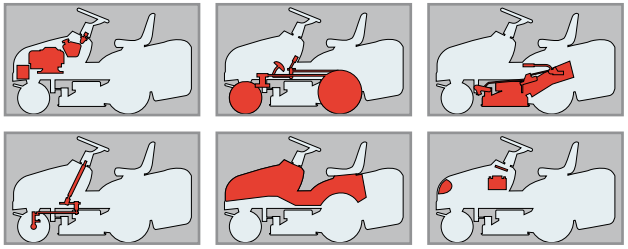


General informations

The removal of the front hood gives greater accessibility to:
- *the engine and its accessories*
- *the silencer and protection devices*

Related topics

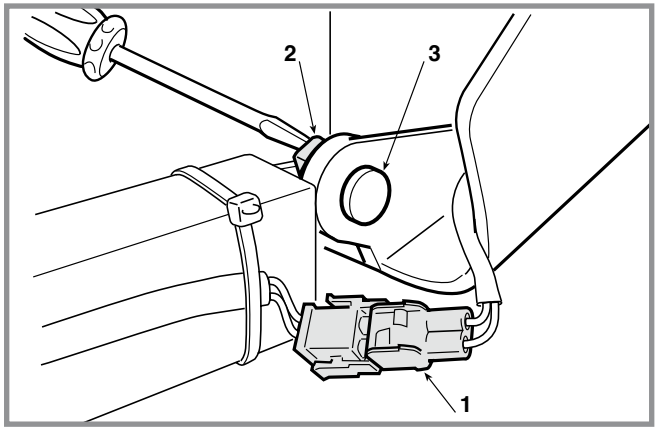
Map of functional units



➤ ***models with lights***
The hood can be secured in two ways.

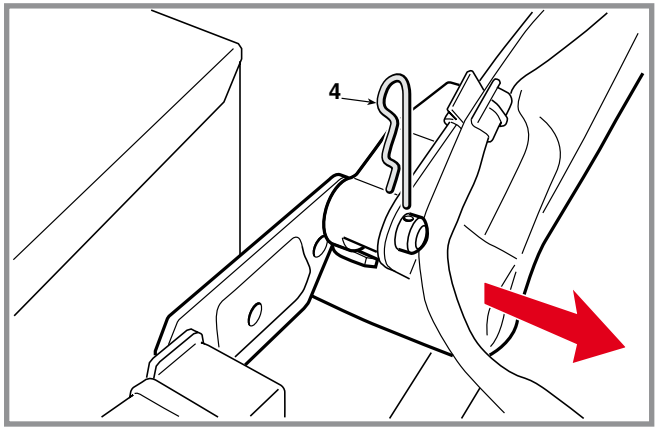
A) Fixing with springs

Unhook the two fastener springs (2) and pull out the pins (3).



B) Fixing with a cotter pin

Take out the cotter pin (4) from the right-hand side and remove the hood by moving it to the right.



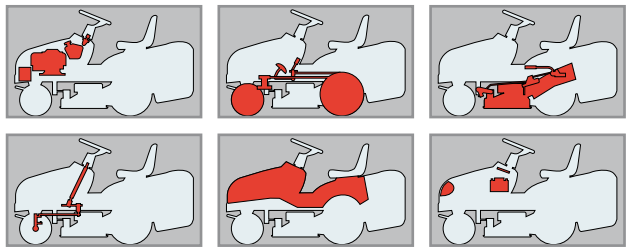
REMOVAL OF THE WHEEL COVER

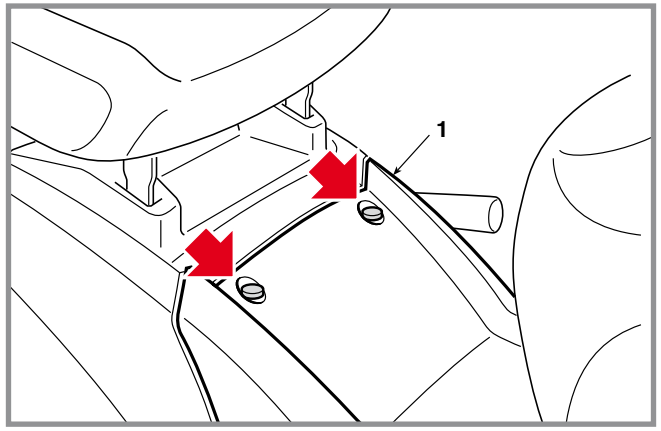
General informations

Removal of the wheel cover is only necessary for its replacement or particular operations..

Related topics

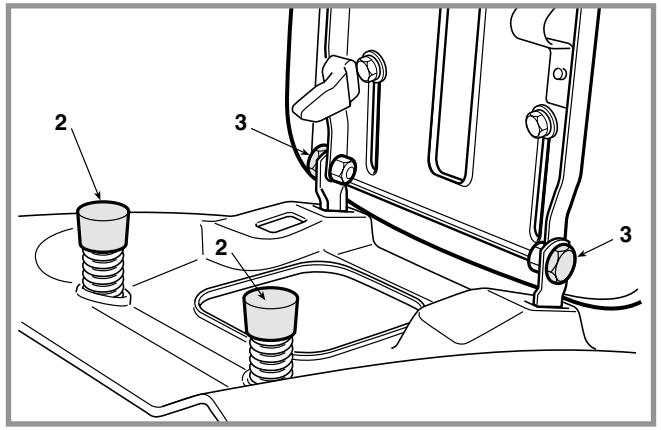
Map of functional units

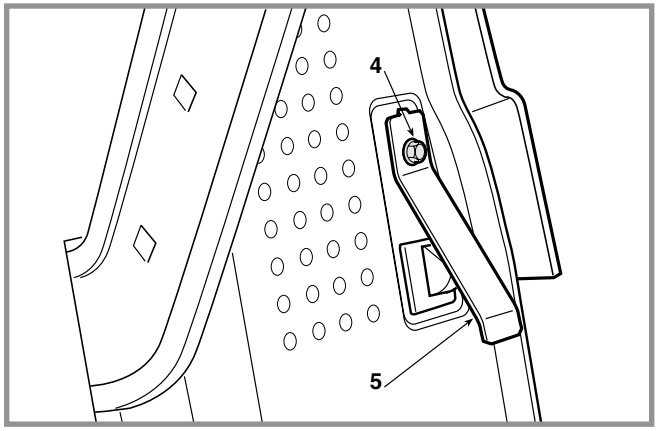




Remove the inspection hatch (1).

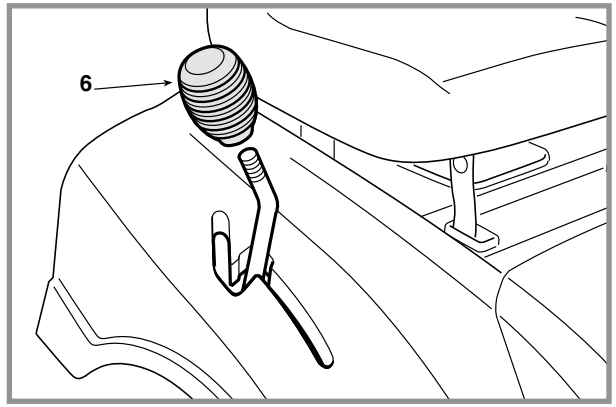
Remove the spring covering plugs (2) and dismantle the two pins (3) to remove the seat.

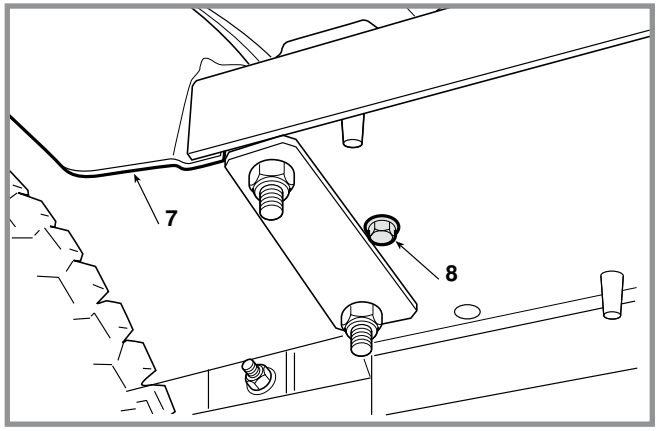




Unscrew the screw (4) and remove the bag present signal microswitch guard (5).

➤ ***models with mechanical transmission:*** unscrew the gear lever knob (6).



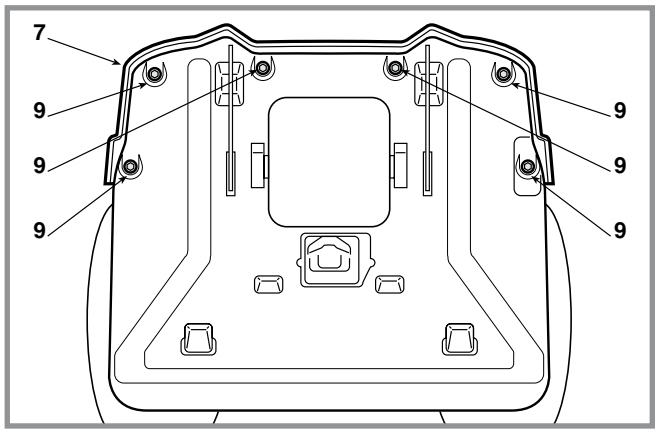


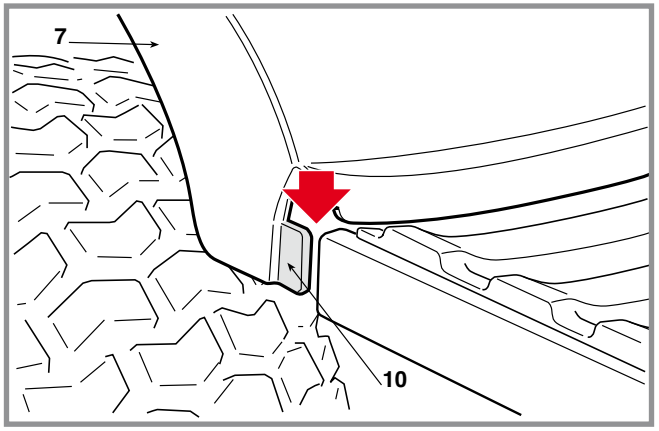
The cover (7) is fixed by:

– 2 lower screws (8) (1 for each side) located under

– 6 rear screws (9) (3 for each side), for fixing on the rear plate.

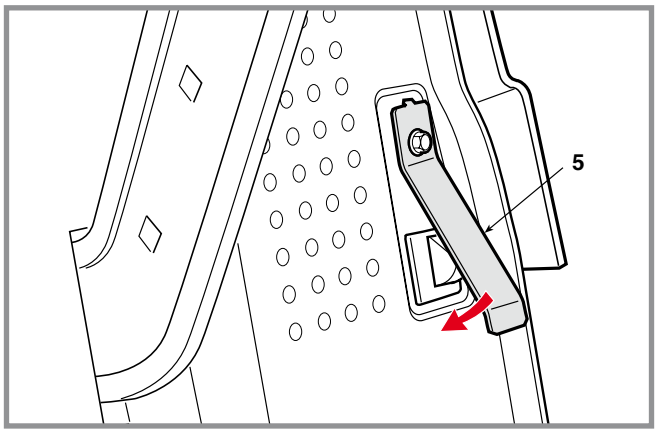
The cover can be removed after the cutting height adjustment lever has been set to position «7».





For reassembly, follow the procedure described above in reverse, being careful to correctly insert the two side tongues (10) of the cover in the housings in the footboards.

IMPORTANT *Check the correct assembly of the bag present microswitch guard (5), so as to ensure regular operation of the safety systems.*



REMOVAL OF THE EJECTION CONVEYOR

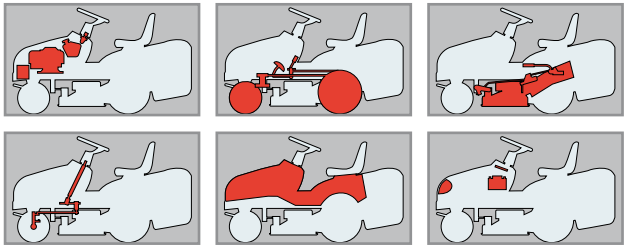
General informations

Removing the conveyor gives access to:
- *the small side wheels and the transmission belt,*
- *the joints of the cutting plate lifting lever.*

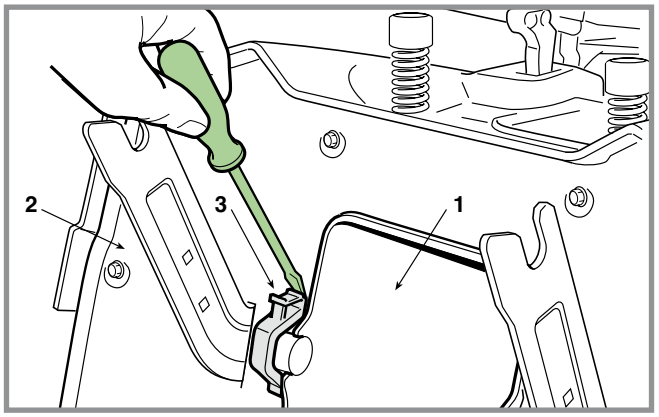
Removing the collector channel is necessary to dismantle the cutting deck and if the rear plate is removed.

Related topics

Map of functional units



The conveyor (1) is connected to the rear plate (2) by two plastic clamps (3), removable with the help of a screwdriver.



On assembly, ensure the free vibration of the conveyor at each plate height variation.

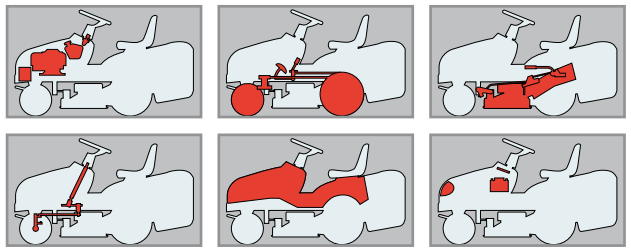
REMOVAL OF THE TANK AND REPLACING THE FUEL PIPE

General informations:

Removing the tank is only necessary for its replacement; part of this procedure must be followed in the case of fuel pipe replacement.

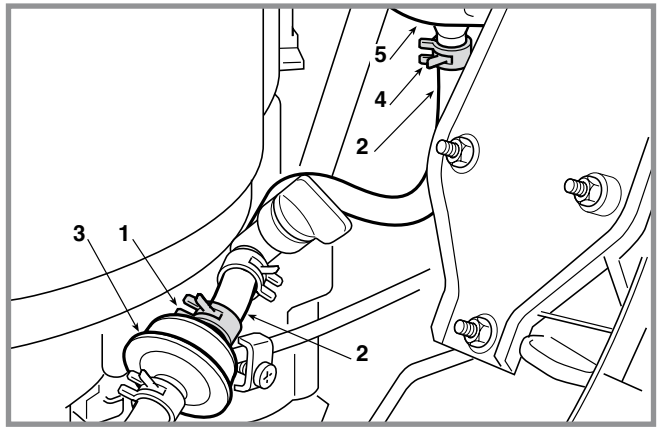
Related topics:

Map of functional units

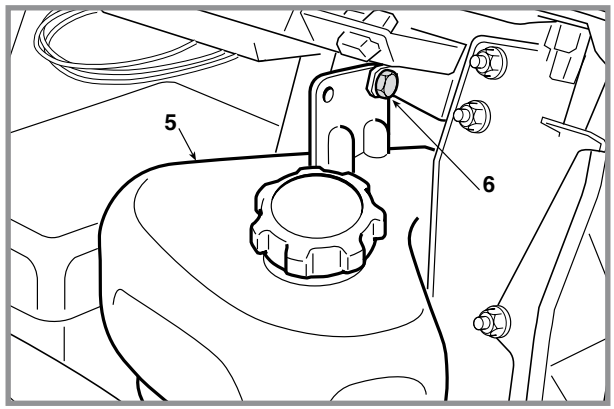


Remove the clip (1), unthread the pipe (2) from the fuel filter entry (4) and empty the tank completely, suitably saving all the petrol it contains and being careful not to leak it in the work area.

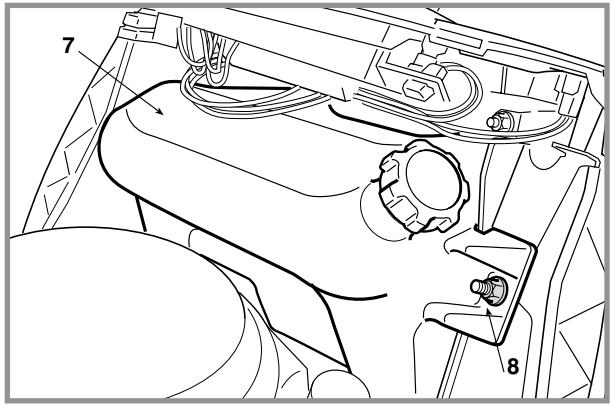
Remove the clip (4) and unthread the pipe (2) from the tank outlet union (5).



➤ ***with a 4.5 litre tank:***
Loosen the fixing screw (6) and remove the tank (5).



➤ ***with a 5.5 litre tank:***
Loosen the fastening nuts (8) and remove the tank (7).



For reassembly follow the operations described above in reverse, being careful to:

- always replace the fuel pipe;
- remember to reposition the fixing clips and to fix the pipe to the cable clamps;
- check that there are no fuel leaks.

NOTE *The fuel pipe is supplied in sections of 1 metre, which must be cut to the specific length required by the various types of engine, making sure the hose is not taut, bent, siphoned or choked.*

General informations

Since there are different types of drive, the stages described here refer to those shared or similar in all types of engine.

Related topics

[☛ 4.3] Drive belt adjustment

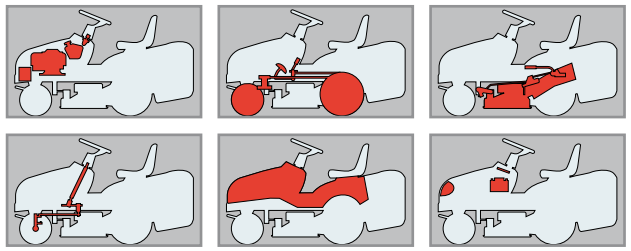
[☛ 5.1] Removal of front hood

[☛ 6.8] Replacement of the accelerator and adjustment of the carburettor

Tightening torques

5	Screw for pulley	45 ÷ 50 Nm
-	Screws for engine fastening	25 ÷ 30 Nm

Map of functional units



☛ Remove the front hood.

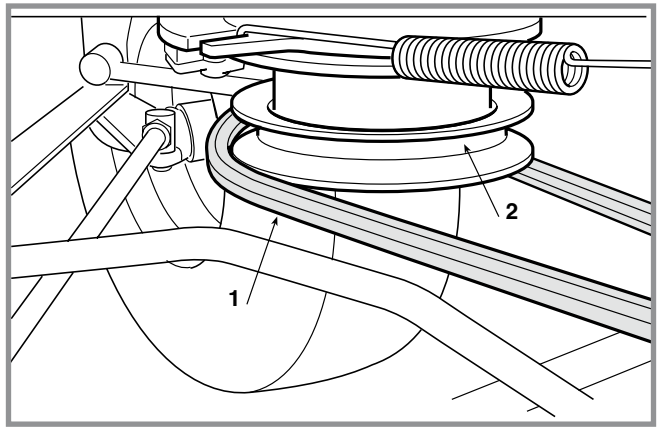
For greater operating convenience it is recommended that the transmission belt is slackened off; this is done by ...

➤ ***Mechanical transmission models:***
engaging the parking brake.

➤ ***Hydrostatic drive models:***
slackening off the tension regulator.

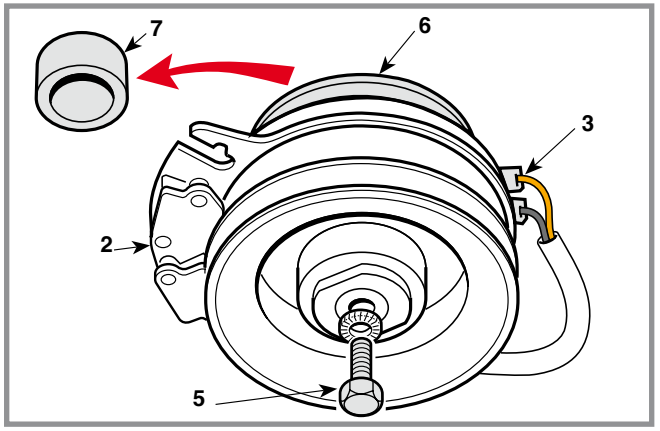
⚠ FIRST disconnect the black earth cable from the battery, and THEN the red cable, to prevent possible short circuits and dangerous situations.

Free the blade belt (1) from the clutch pulley (2).

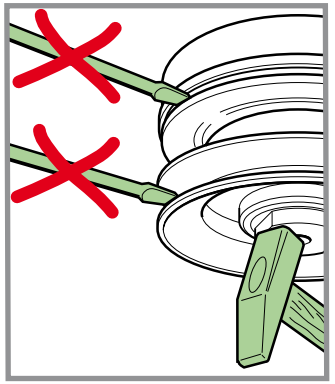


Disconnect the connectors (3) from the clutch contacts (2), unhook the return spring (4) from the clutch side and unscrew the central screw (5) with the help of a power screwdriver.

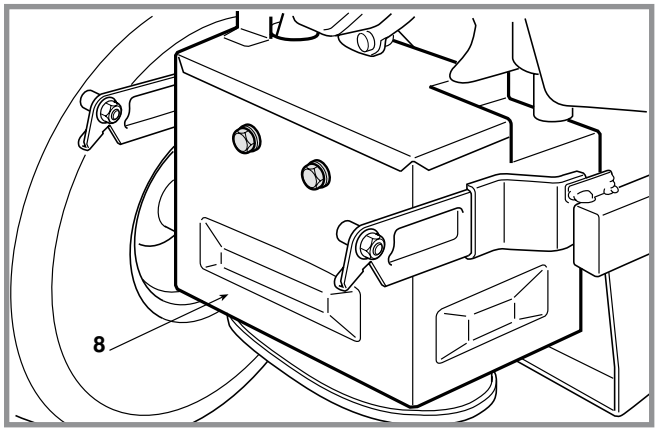
Remove the clutch (2) from the shaft, together with the transmission command pulley (6) and the spacer (7).

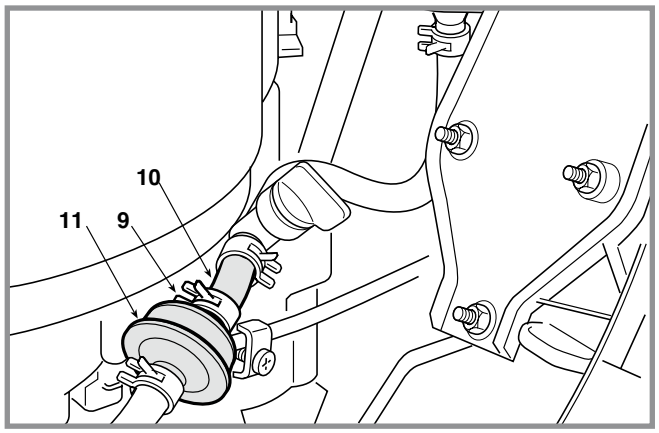


IMPORTANT *To remove the clutch (2) from the engine shaft, absolutely do not use a lever to force the pulleys or the outer cover. In case of difficulty, apply an unlocking spray and gently tap on the hub with a hammer, to facilitate extraction.*



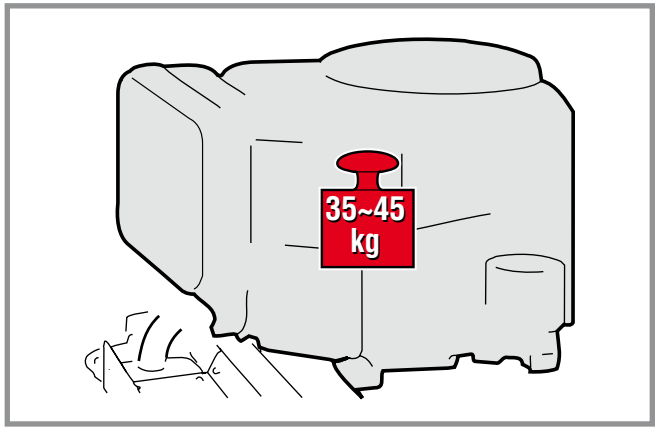
Remove the exhaust guard (8) and disconnect the accelerator cable control and all the electric cables.





Remove the clip (9), unthread the pipe (10) from the fuel filter entry (11) and empty the tank completely, suitably saving all the petrol it contains and being careful not to leak it in the work area.

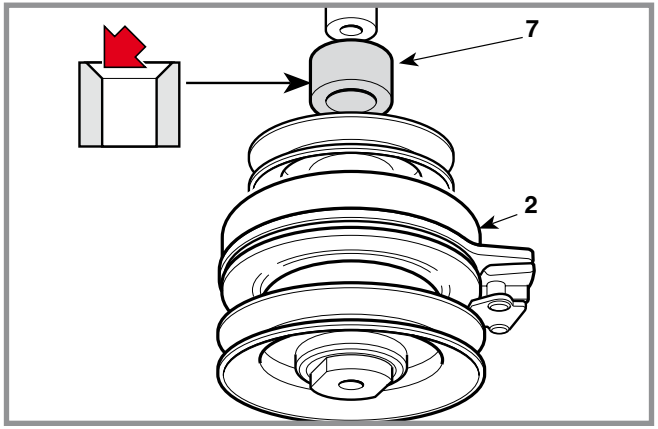
Identify and undo all the screws that fasten the engine to the chassis, then carefully lift and remove the engine using equipment suitable for the weight of the engine (about 35-45 kg) and the designated lifting points to guarantee safe working conditions.



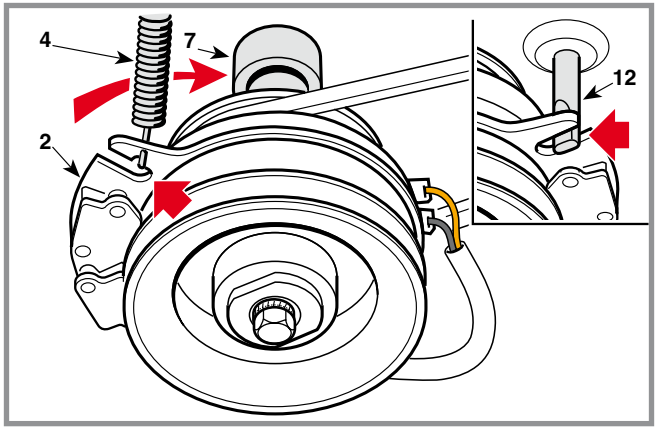
NOTE *Some engines are held with screws of different length and in different positions, so it is best to label them so that no errors are made on reassembly.*

For reassembly follow the operations described above in reverse.

Reassemble the spacer (7), with the countersink facing the engine.



Ensure that the pin (12) is inserted in the groove in the clutch (2) and remember to replace the spring (4).



Fully tighten the engine and pulley fixing screws to the prescribed values.

Remember to fit the clamps back on the fuel pipe and check that it does not leak.

Carefully restore all electric and earth contacts and always refit the exhaust guard (8).

Reattach the accelerator cable and ...

- ☛ Adjust the «MINIMUM» position.
- ☛ Refit the front hood.

➤ ***Hydrostatic drive models:***

- ☛ Reset the tension of the stretcher spring if it has been loosened.

REMOVAL OF THE REAR AXLE
Peerless MST 205-535 E

General informations

The rear axle (Transaxle) is made up of a single maintenance free sealed unit which includes the transmission unit (mechanical) and the differential and doesn't need any maintenance.
It only needs to be removed to be replaced or for an overhaul by the Manufacturer's Service Centre.

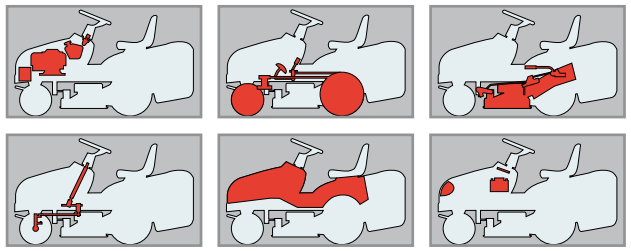
Related topics

[☛2.3] Lifting of the machine
[☛4.2] Brake adjustment
[☛5.3] Removing the ejection conveyor
[☛6.1] Removal of the wheels

Tightening torques

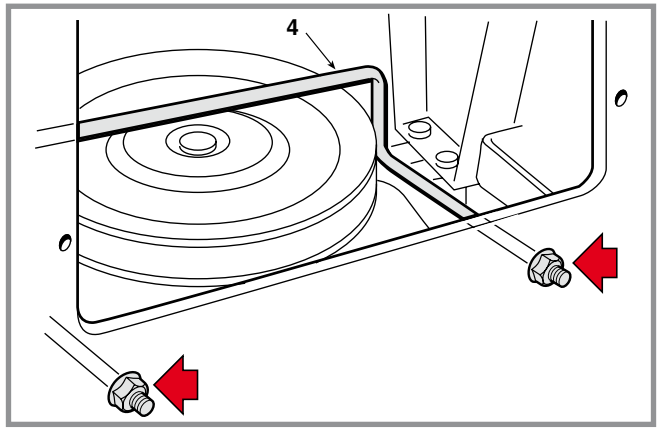
10	Screws for brackets	25 ÷ 30 Nm
11	Self-tapping screws	25 ÷ 30 Nm
12	Screws for rear axle fastening	25 ÷ 30 Nm

Map of functional units



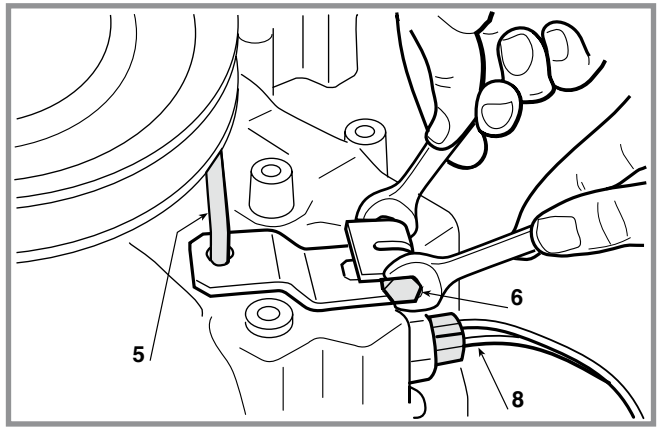
☛ Remove the collector channel
☛ Lift the rear part of the machine
☛ Remove the rear wheels.

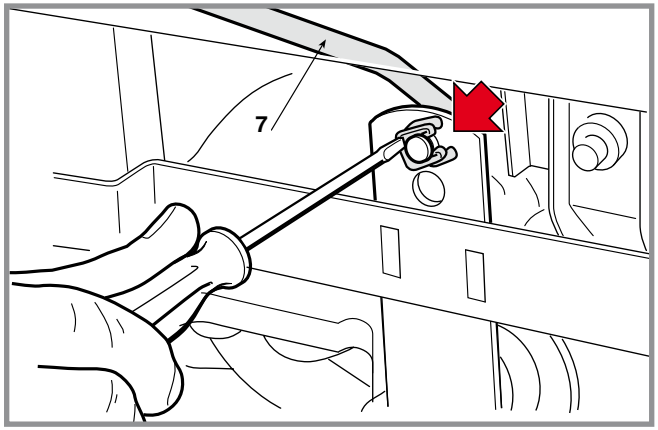
For greater operating convenience it is recommended that the transmission belt is slackened off; this is done by engaging the parking brake.



Dismantle the belt guide (4) from the rear plate and disconnect the gear control shaft (5) slackening off the brake control screw (6) and rod (7).

Disconnect the "neutral" signal microswitch (8) cables.

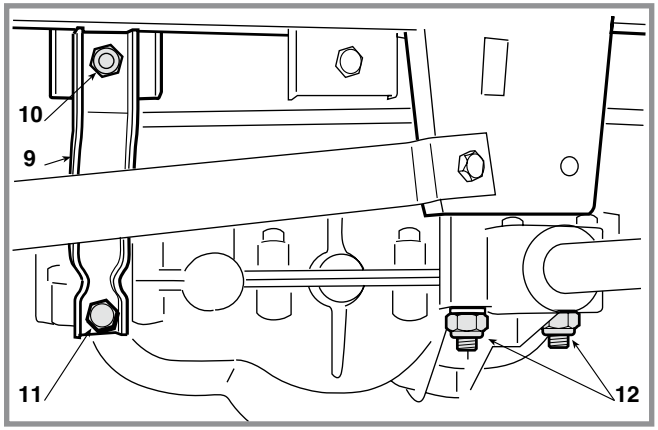




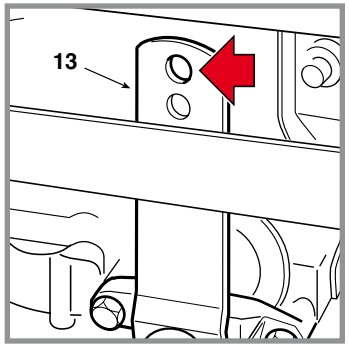
The unit is supported by two brackets (9) with their screws (10) and (11) and is attached to the frame by four screws (12).

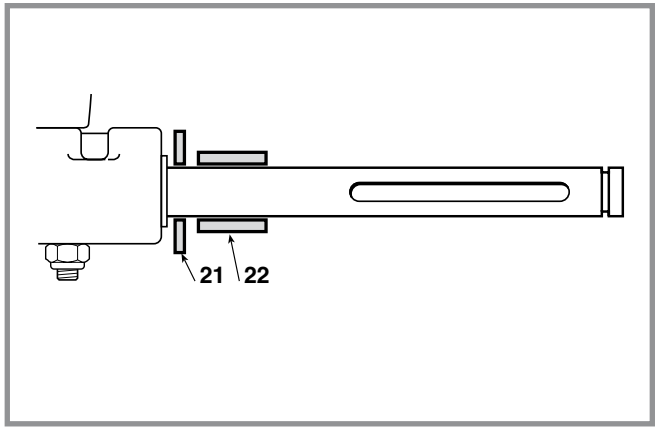
Loosen the two screws (10) to give a minimum of movement to the brackets (9) and undo the two screws (11). Then carefully loosen the four lower screws (12), holding up the unit so that it does not fall.

To reassemble, reverse the order of the previous operations, taking particular care with the two self-tapping screws (11) which, if not screwed in correctly, could damage the threads inside so preventing it from being fastened properly.



When connecting the rod (7) be sure to use the upper hole in the lever (13).





Check that the spacers (21 - 22) are correctly fitted to the shafts, in the sequence given.

IMPORTANT *If the Dana group needs to be replaced with a Peerless group or vice versa, ALWAYS also replace:*

- *the gear control shaft (5);*
- *the fastening screws (12);*
- *the spacers (21 - 22);*

as indicated in the Spare parts catalogue.

Reattach all the connections, and then …

☛ Check the brake.
☛ Refit the rear wheels.

REMOVAL OF THE REAR AXLE
Hydro-Gear T2-ADBF-2X3C-17X1

General informations

The rear axle (Transaxle) is made up of a single maintenance free sealed unit which includes the transmission unit (hydrostatic) and the differential and doesn't need any maintenance.
It only needs to be removed to be replaced or for an overhaul by the Manufacturer's Service Centre.

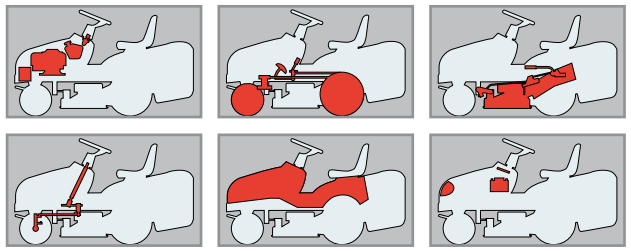
Related topics

[☛2.3] Lifting of the machine
[☛4.2] Brake adjustment
[☛4.4] Drive pedal adjustment
[☛5.3] Removing the ejection conveyor
[☛6.1] Removal of the wheels

Tightening torques

9-10	Nuts for bracket fastening	25 ÷ 30 Nm
11	Screws for rear axle fastening	25 ÷ 30 Nm

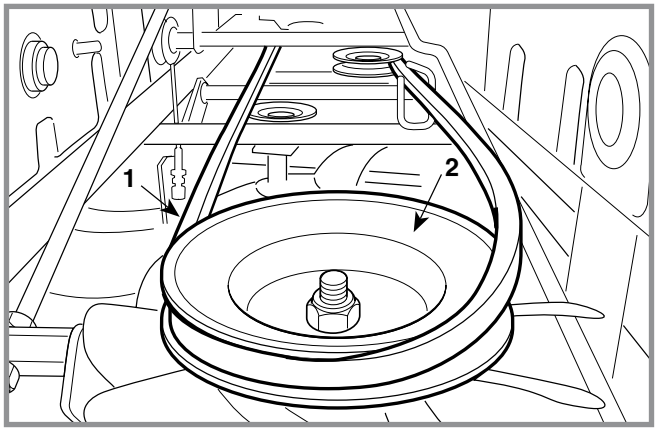
Map of functional units



☛ Remove the collector channel
☛ Lift the rear part of the machine
☛ Remove the rear wheels.

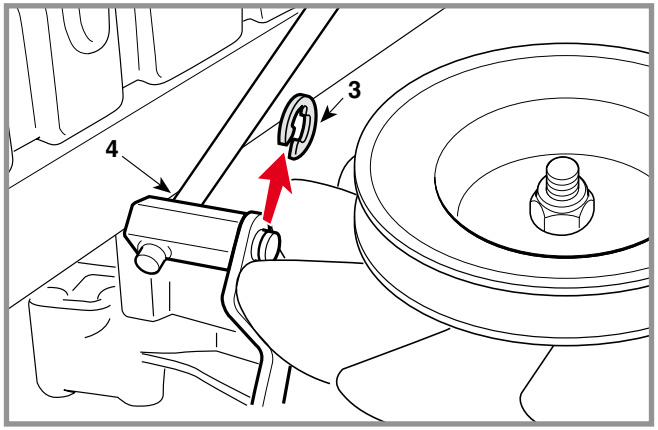
Engage the parking brake to slacken off the belt and obtain greater operating convenience.

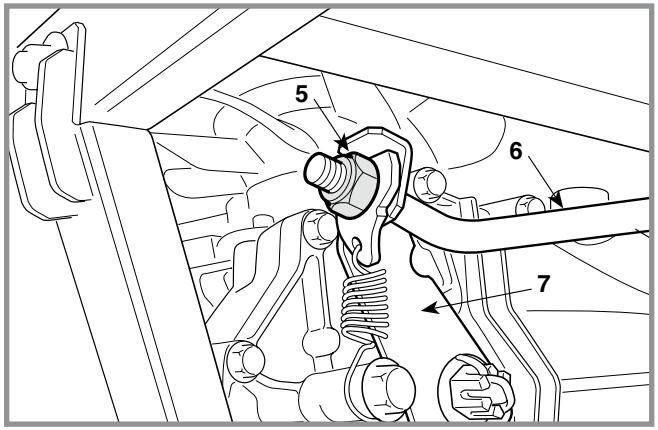
Bring the cutting deck to the highest position.



Hold the two parts of the belt (1) and release it from the pulley (2).

Remove the snap ring (3) and disconnect the drive control lever (4).

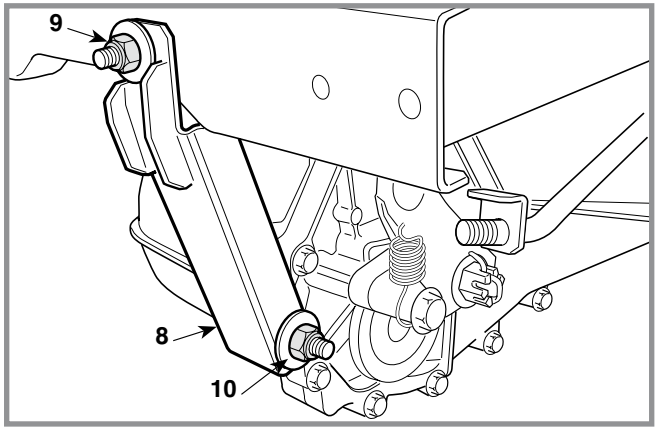


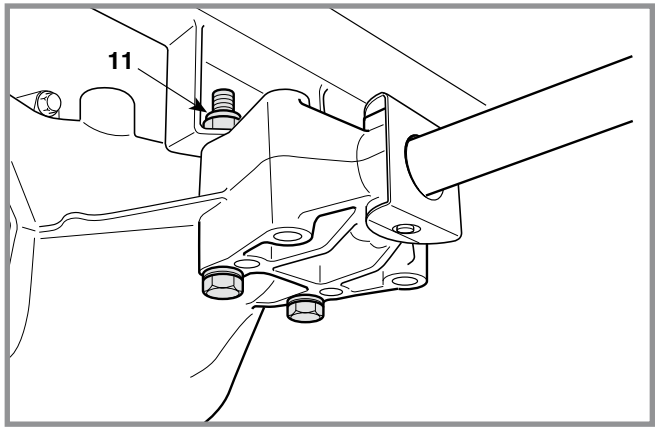


Release the parking brake to reduce spring tension on the rod, them remove the nut (5) and disconnect the brake control rod (6) from the lever (7).

The unit is supported by a bracket (8) from the rear right hand side.

Loosen the upper nut (9) to give a minimum of movement to the bracket (9), unscrew the nut (10) and slide out the relative screw.



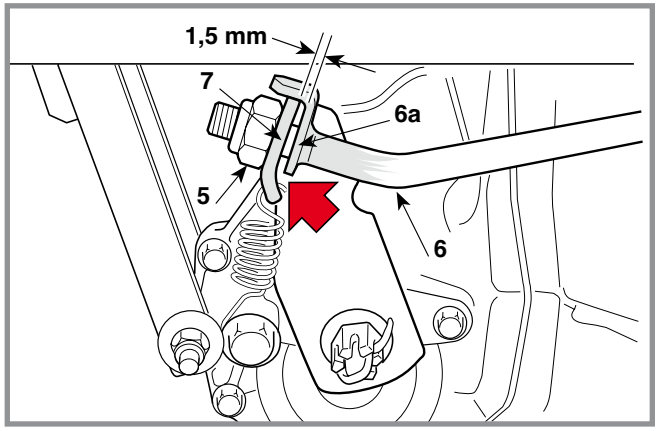


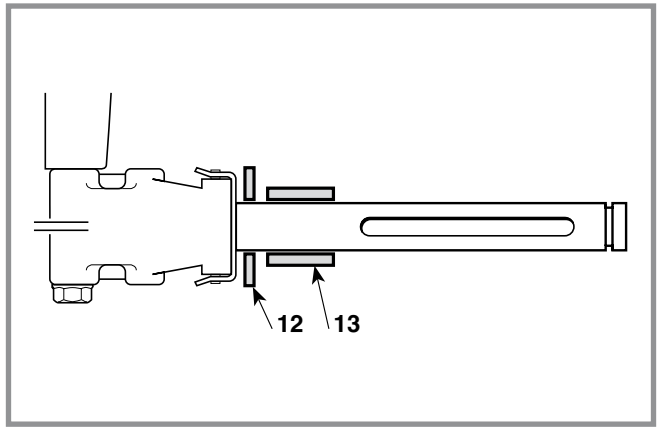
Carefully unscrew the four frame fastener nuts (11), adequately supporting the unit so it does not fall.

To reassemble, reverse the order of the previous operations.

When you come to connect the brake rod (6), it is necessary to screw the nut (5) on as far as possible, along the entire rod thread.

After completing the screwing phase, engage the parking brake and check that there is a 1.5 mm gap between the rod plate (6a) and the lever (7).





Check that the spacers (12 – 13) are correctly fitted to the shafts, in the sequence given.

Reattach all the connections, and then …
☛ Check the brake.
☛ Refit the rear wheels.

If the the drive control rod has been replaced or completely pulled down:
☛ Adjust the travel and the position of “neutral” for the pedal

REMOVAL OF THE REAR AXLE
Tuff Torq K46S

General informations

The rear axle (Transaxle) is made up of a single maintenance free sealed unit which includes the transmission unit (hydrostatic) and the differential and doesn't need any maintenance.
It only needs to be removed to be replaced or for an overhaul by the Manufacturer's Service Centre.

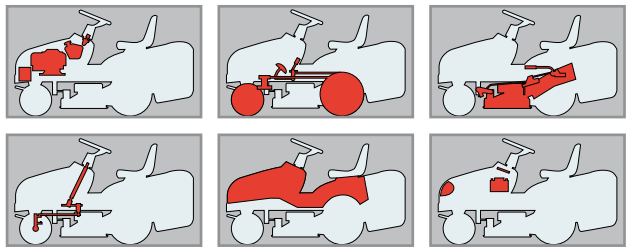
Related topics

[☛2.3] Lifting of the machine
[☛4.2] Brake adjustment
[☛4.4] Drive pedal adjustment
[☛5.3] Removing the ejection conveyor
[☛6.1] Removal of the wheels

Tightening torques

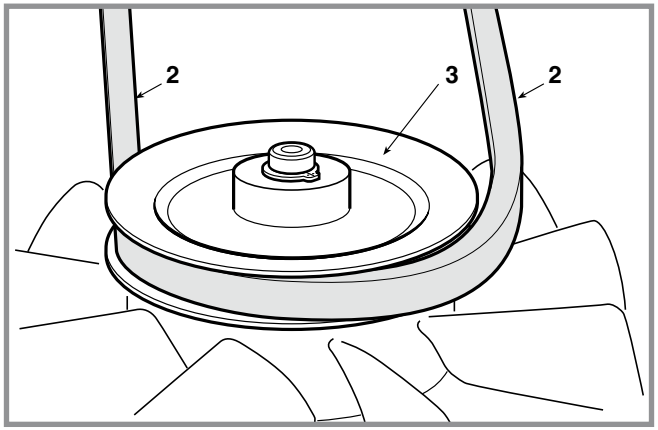
19	Rear axle locknut	25 ÷ 30 Nm
20	Screws for rear axle fastening	25 ÷ 30 Nm

Map of functional units

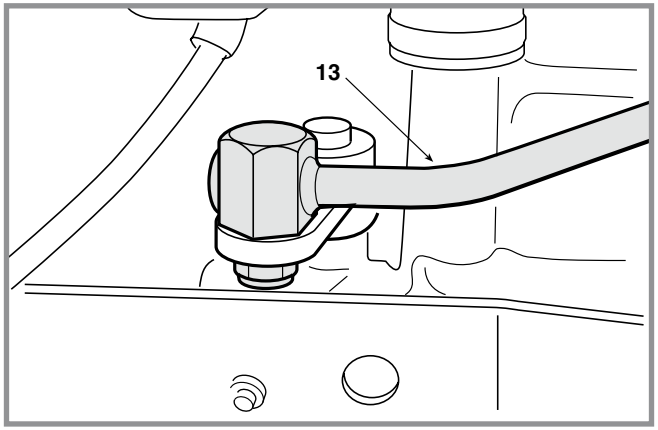


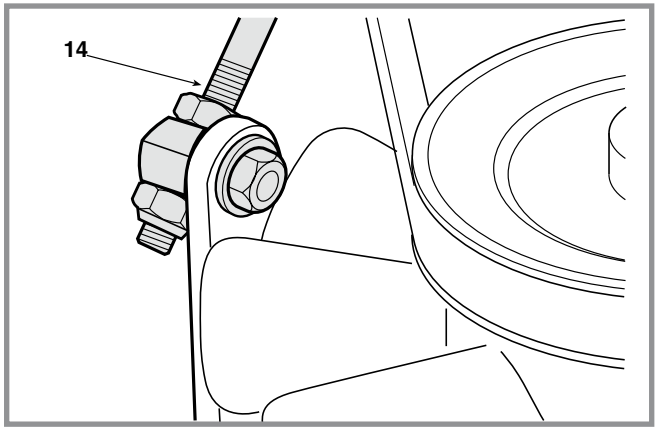
☛ Remove the collector channel
☛ Lift the rear part of the machine
☛ Remove the rear wheels.

For greater operating convenience it is recommended that the transmission belt is slackened off; this is done by grasping the two branches of the belt (2), pulling it just enough to free it from the pulley throat (3), overcoming the resistance of the tension regulator guide pulley.



Dismantle the pin of the brake control rod (13) and the pin of the drive engagement control rod (14).

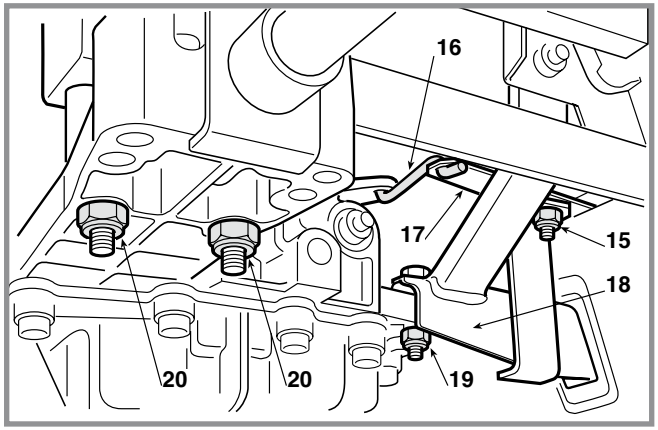


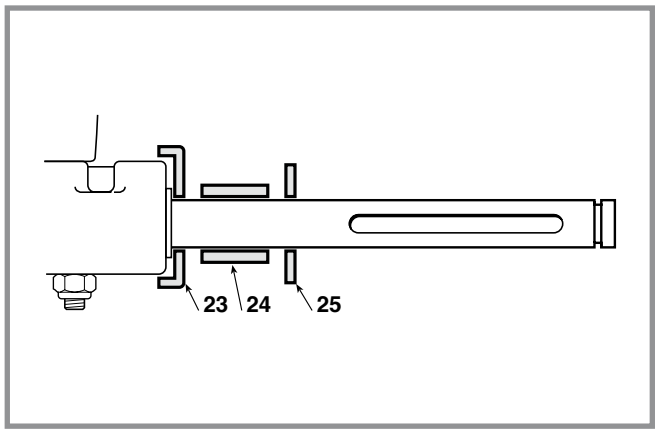


Loosen the nut (15) of the release lever to detach the rod (16) from the lever (17).

The unit is held up by a support (18) and fastened to it by a screw with a nut (19), and it is attached to the frame by four screws (20).

Undo the nut (19) and then carefully undo the four lower screws (20), holding up the unit so that it does not fall.





To reassemble, reverse the order of the previous operations

Check that the spacers (23 - 24 - 25) are correctly fitted to the shafts, in the sequence given.

Reattach all the connections, and then …
☛ Check the brake.
☛ Refit the rear wheels.

If the the drive control rod has been replaced or completely pulled down:
☛ Adjust the travel and the position of “neutral” for the pedal

REMOVAL OF THE CUTTING DECK

General informations

Removing the cutting deck facilitates all the overhaul and replacement of hubs, bearings and blade shafts.
With some practice and experience it is possible to do this work with the deck still in position.

Related topics

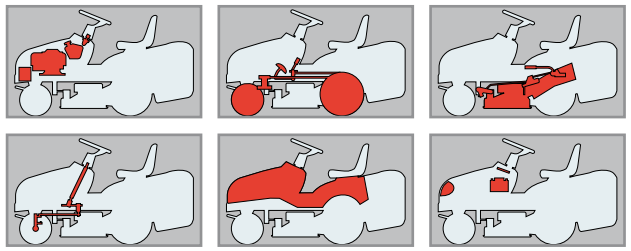
[☛ 4.5] Aligning the cutting deck

[☛ 5.3] Removing the ejection conveyor

Tightening torques

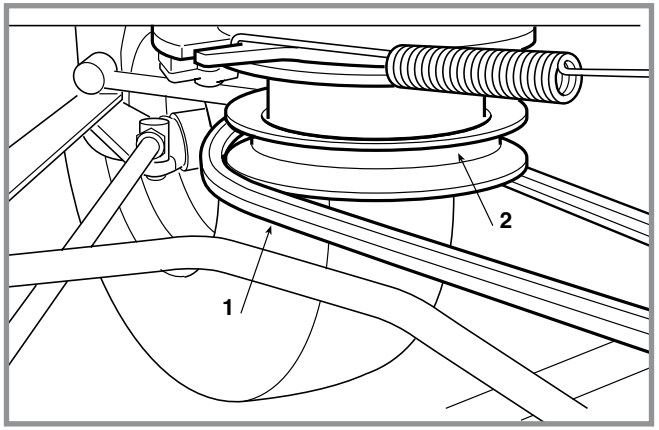
3	Steering rod fixing nut	18 ÷ 20 Nm

Map of functional units



☛ Remove the collector channel

Free the blade belt (1) from the clutch pulley (2) and set the cutting height adjustment lever to position «1».



Unscrew the nut (3) and disconnect the steering rod (4) to allow the passage of the belt.

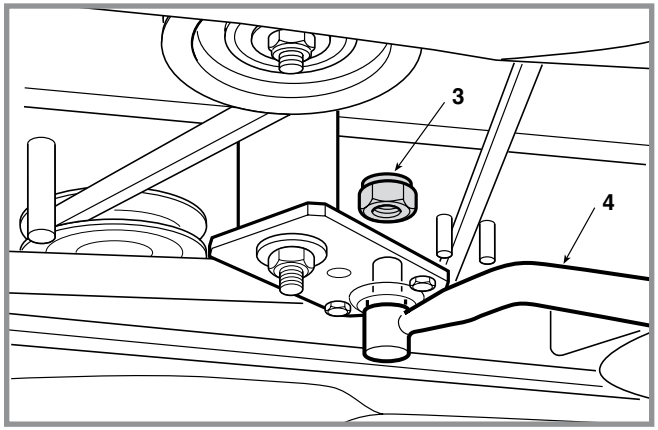
Uncouple the two front flexible split pins (5) and the three flexible split pins (6) of the lifting tie-bars.

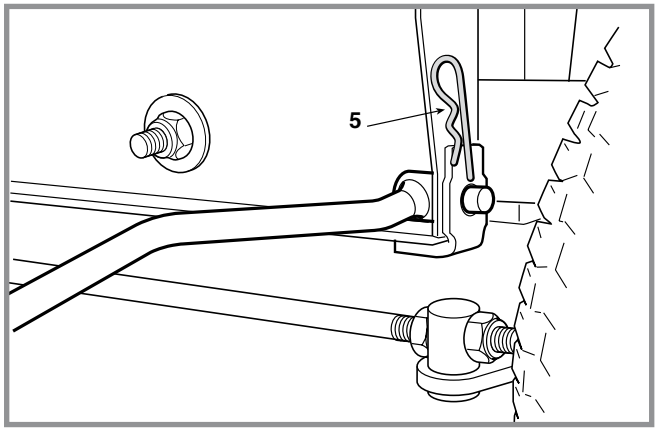
Having checked that there are no obstacles, the plate can be removed, slightly rotating it anticlockwise, so that all the pins come out of their housings.

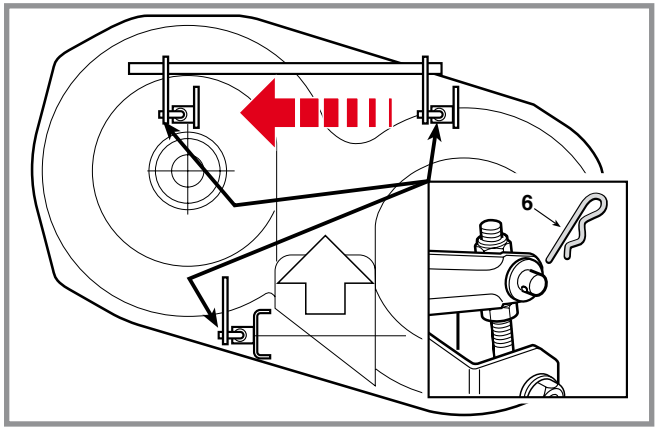
For reassembly perform the operations described above in reverse, making sure that the blade control belt (1) remains above the steering rod (4).

IMPORTANT *It is always advisable to replace the nut (3) whenever it is dismantled.*

When assembly is completed …
☛ Check the alignment of the cutting deck







REPLACEMENT OF TYRES AND WHEELS

General informations

The tyres used are of the "Tubeless" type and so every repair of a hole in the tyre must be done by a tyre specialist according to the methods used for this type of tyre.

Related topics

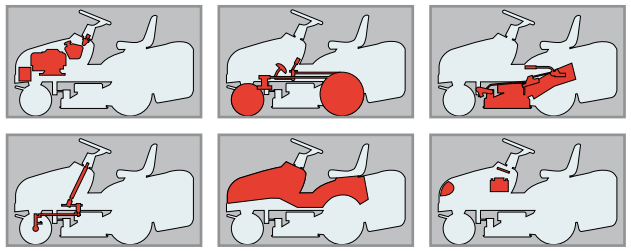
[☛ 2.3] Lifting of the machine

[☛ 4.5] Aligning the cutting deck

Tyre pressures

Front	(Tyres 13 x 5.00-6)	1,5 Bar
.....	(Tyres 15 x 5.00-6)	1,0 Bar
Rear		1,2 Bar

Map of functional units



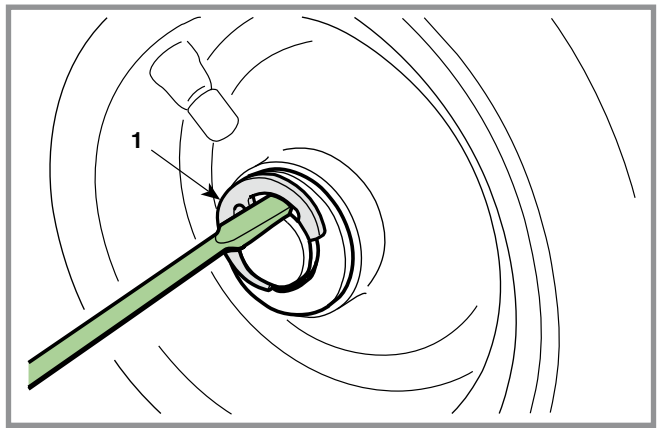
A) Tyres

After replacing one or more tyres or the wheels, it is always necessary to check the pressure and to check the alignment of the cutting deck.

ATTENZIONE ***Replace distorted wheel rims as they could impair the tyre's hold.***

B) Wheels

The wheels are held by a snap ring (1) which can be removed with the help of a screwdriver.

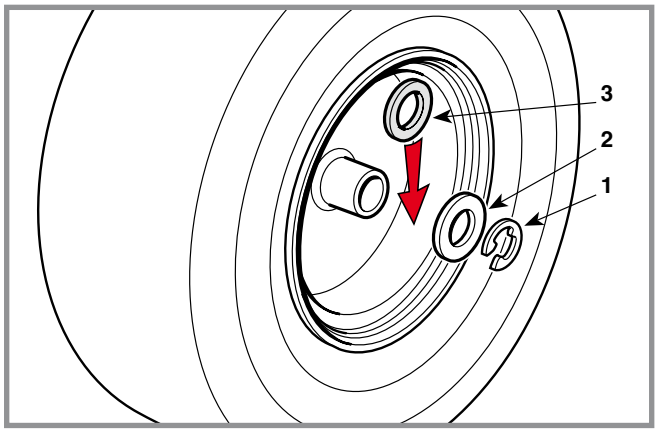


NOTE *If a wheel is jammed onto the shaft, use a releasing spray, directing it around the splining hole.*

On assembly it is advisable to spread grease on the shaft to facilitate the next wheel removal.

● **For the front wheels:** replace the shoulder washer (2) and the flexible ring (1) with the bevel facing inwards.

● **For the rear wheels:** replace the shoulder washer (2) and the flexible ring (1) with the bevel facing inwards and check the axial gap of the wheel on the shaft; if it is greater than 3 mm, a spacer (3) must be fitted between the wheel hub and the shoulder washer (2).



General informations

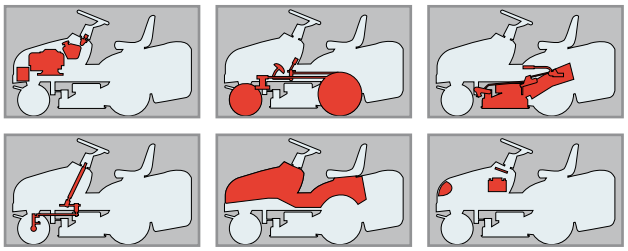
Related topics

[☛2.2] Tools

[☛2.3] Lifting of the machine

[☛6.1] Replacement of tyres and wheels

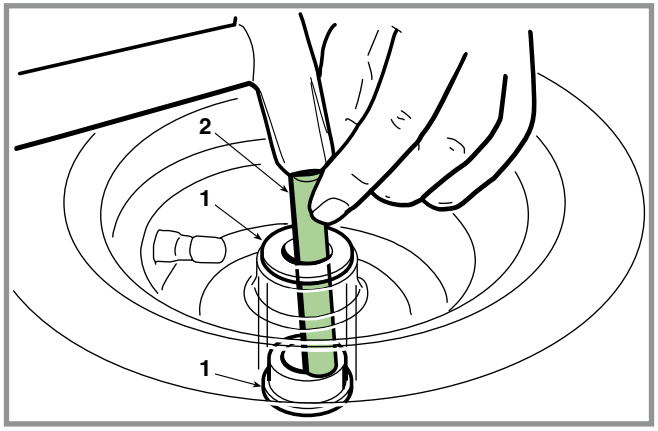
Map of functional units



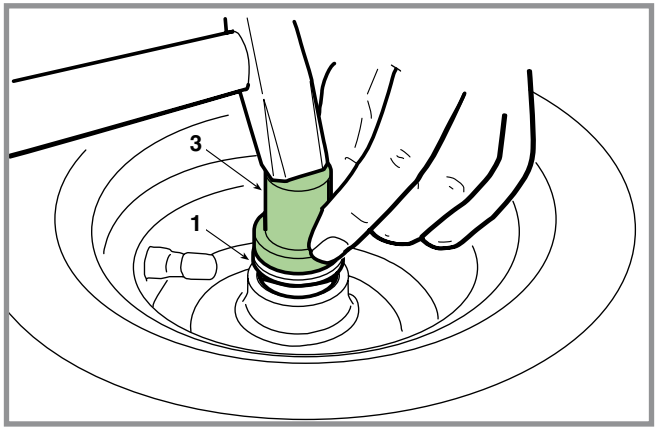
☛ Dismantle the front wheel.

The front wheel bearings (1) are force splined into the front wheel hub.

A 10 - 12 mm diameter round bar (2) must be used to extract a bearing, inserted from the opposite side and struck with a hammer around various points of the inner circumference of the bearing.



The new bearing must be fitted with the help of a plastic mallet or of a bronze pad (3) that only acts on the bearing's outer ring.



General informations

Related topics

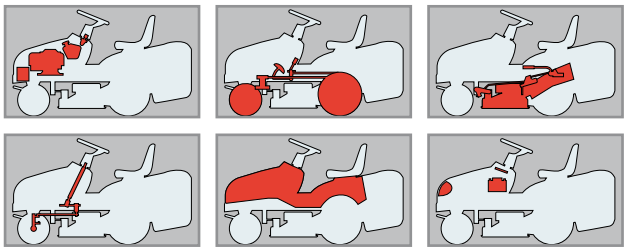
[☛ 4,3] Drive belt adjustment

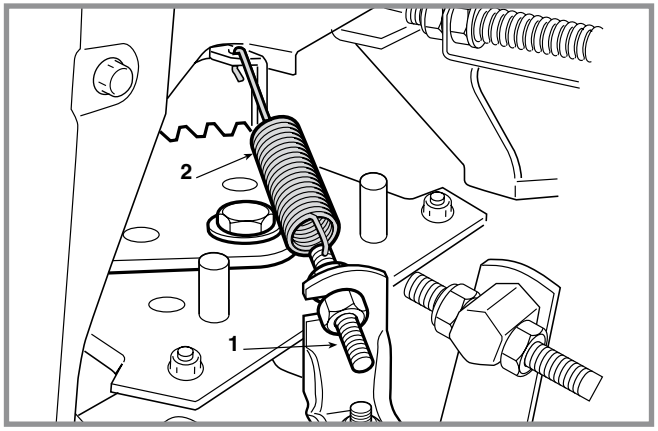
[☛ 4,7] Steering geometry adjustment

Tightening torques

6 Nut for Ring gear .....35 ÷ 40 Nm

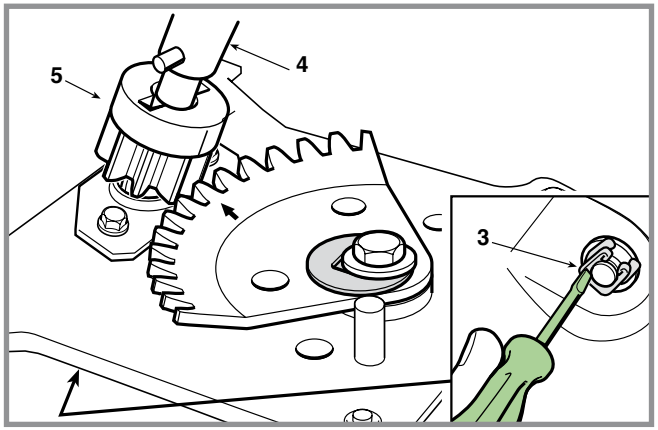
Map of functional units





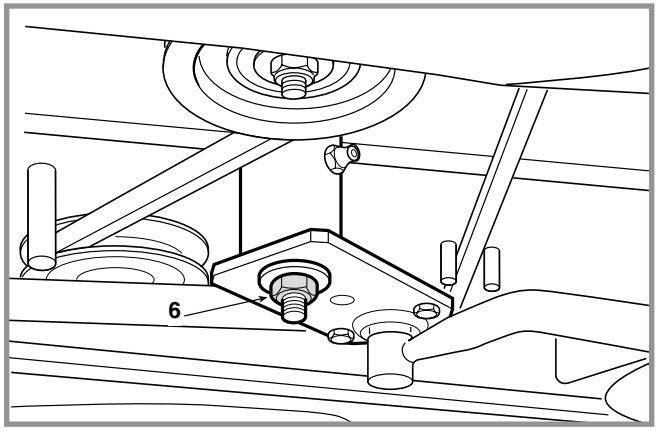
Remove the inspection hatch, slacken off the register (1) and unhook the spring (2) of the traction pulley guide.

Uncouple the spring (3) and lift the steering column (4) by enough to be able to remove the pinion (5).



A) Dismantling the steering pinion and ring gear

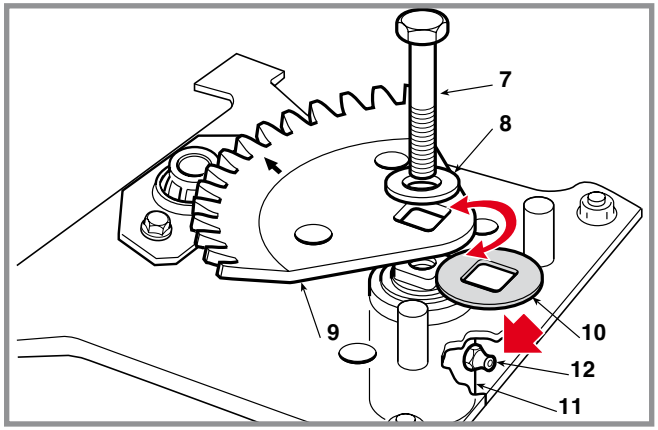
Working from the bottom of the machine, unscrew the nut (3), being careful to adequately support the crown wheel axle components to prevent them from unthreading themselves completely.

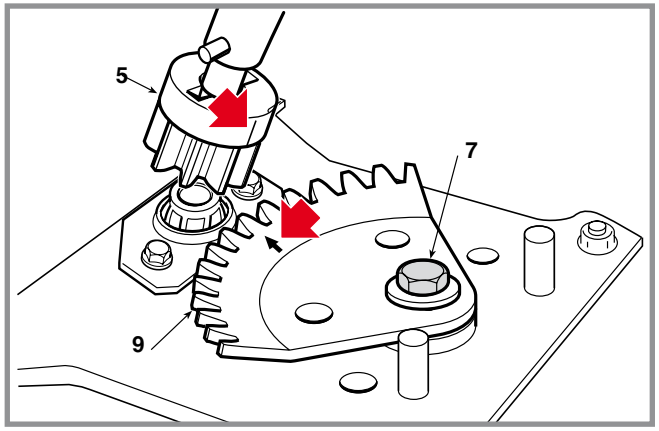


Remove the screw (7) and washer (8) dismantle the crown wheel (9).

In the case of replacement of the crown wheel and pinion, the 0.8 mm spacer (10) (that might have been placed under the crown wheel previously) must be re-covered.

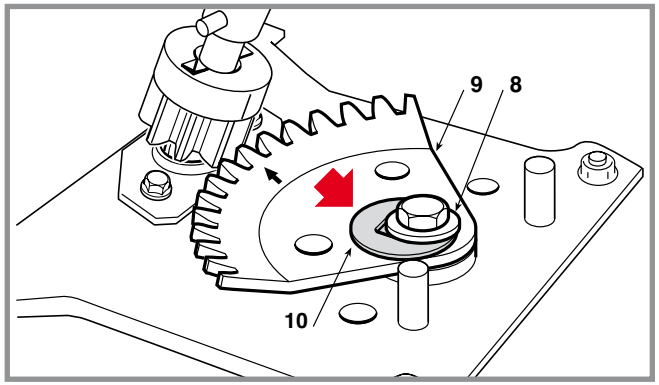
On assembly, check the grease charge inside the sleeve (11) and top it up, if necessary, through the grease nipple (12).



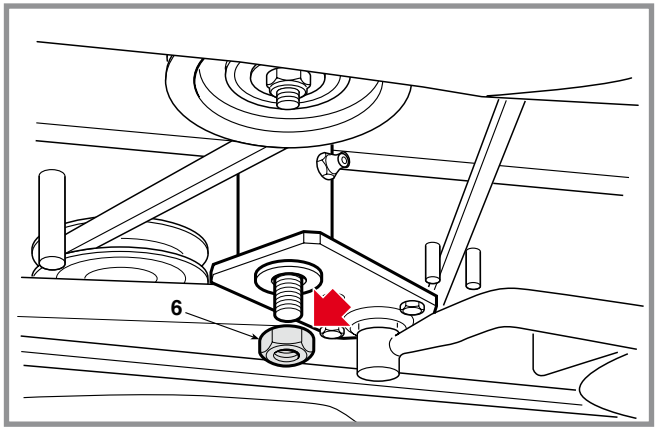


Refit the crown wheel (9), matching up reference (⇒), punched in the centre, with reference (|) of the pinion (5).

NOTE *With the new crown wheel and pinion, the spacer (10) must be placed between the crown wheel (9) and the washer (8), so that it can be used subsequently for taking up the play between the teeth; should the same components be refitted, the play between the teeth must be evaluated and the spacer (10) possibly fitted below the crown wheel (9) should it be necessary to reduce the play.*



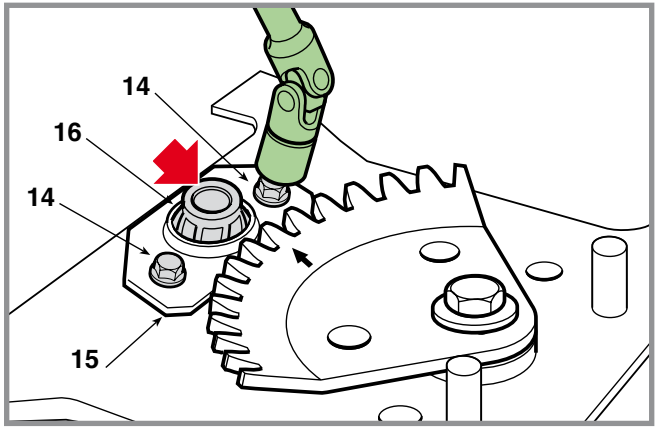
Refit screw (7) and nut (6), tightening it to the prescribed value.



IMPORTANT *After assembly, it is always best to replace the nut (6) only using original spare parts (trilobite or self-gripping) without fully tightening to ensure necessary sliding. NEVER use other types of nuts to avoid jeopardising retention capacity.*

B) Lower bush replacement

Use a universal socket wrench to unscrew the two screws (14) that fix the plate (15) and remove the spherical lower bush (16).



On reassembly ensure that the bush (16) is fitted with the protuberant part upwards.
Die Schraube (7) und die Mutter (6) wieder montieren und auf den vorgeschriebenen Wert festziehen.Refit the plate (15) without tightening the screws (14).

Align the pinion with the crown wheel [see 6.3.A] and insert the end of the steering wheel column (3) in the hole in the spherical bush (16); fully tighten the screws (14) after having checked the correct alignment and regular rotation of the steering wheel column.

Replace the traction guide pulley spring (2) and ...

☛ Adjust the traction engagement
☛ Check the steering geometry

REPLACEMENT OF THE DRIVE BELT

General informations

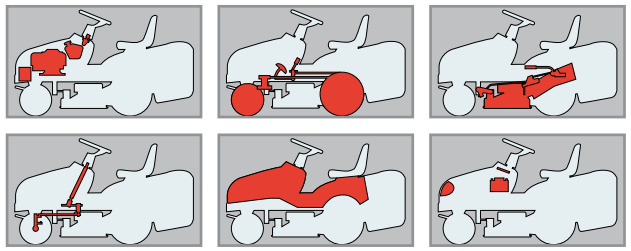
Related topics

[☛ 4.3] Drive belt adjustment
[☛ 5.3] Removing the ejection conveyor
[☛ 5.5] Removal of the engine
[☛ 8.2] Belts assembly

Tightening torques

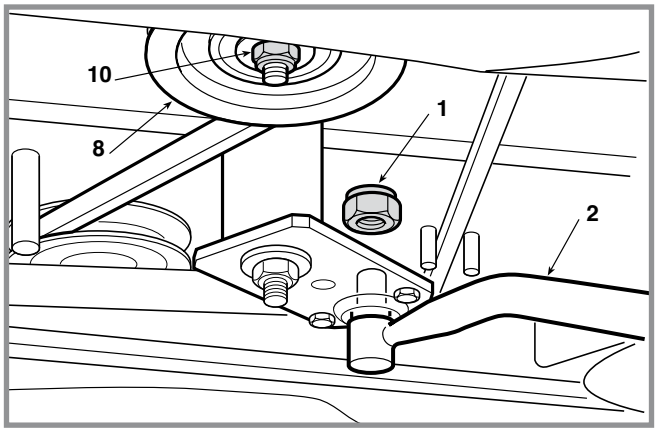
1	Steering rod fixing nut	18 ÷ 20 Nm
5	Nuts for small wheels	25 ÷ 30 Nm
9-10	Nuts for pulleys	25 ÷ 30 Nm

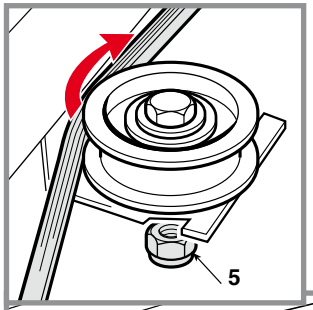
Map of functional units



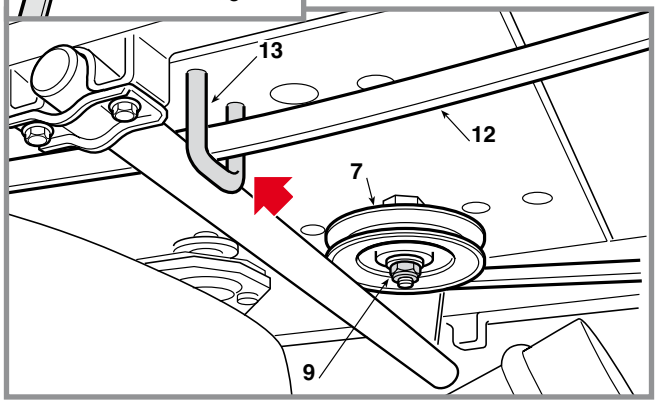
☛ Dismount the engine pulley and the clutch.
☛ Remove the collector channel

To allow removal of the belt and subsequent passage of the new belt requires unscrewing the nut (1) and disconnecting the steering rod (2);

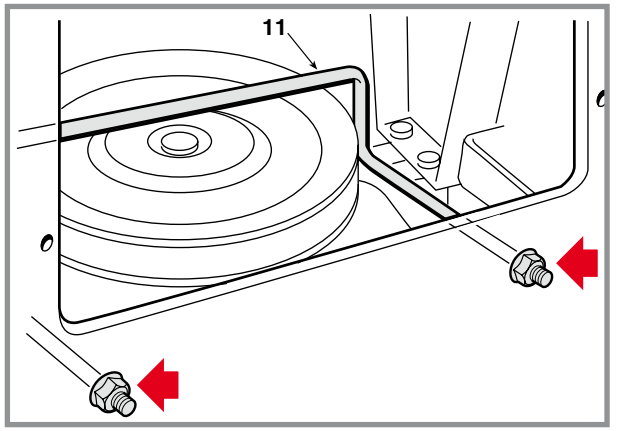




Loosen the nuts (5) holding the small side wheels (6) in order to release the belt, take off the drive pulley (7) and the stretcher pulley (8) held on by the nuts (9) and (10).



➤ ***mechanical drive models:***
you need to dismantle the guide pulley (11) attached to the rear plate.



When reassembling, make sure that the belt (12) is correctly positioned in the pulleys inside the rims, taking particular notice of where it passes through the fork (13).

IMPORTANT *It is always advisable to replace the nut (1) whenever it is dismantled.*

When assembly is completed,

☛ Replace the engine pulley and the clutch.
☛ Adjust the drive belt.

REPLACEMENT OF THE SMALL WHEELS FOR THE DRIVE BELT

General informations:

Related topics:

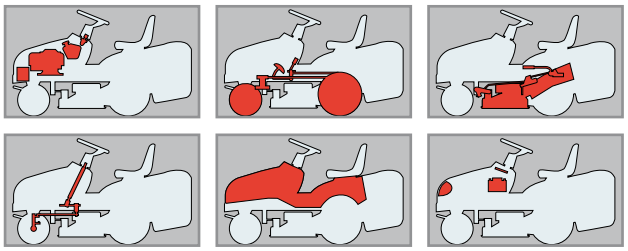
[☛ 4.3] Drive belt adjustment

[☛ 5.3] Removing the ejection conveyor

Tightening torques

4	Nuts for small wheels	25 ÷ 30 Nm

Map of functional units

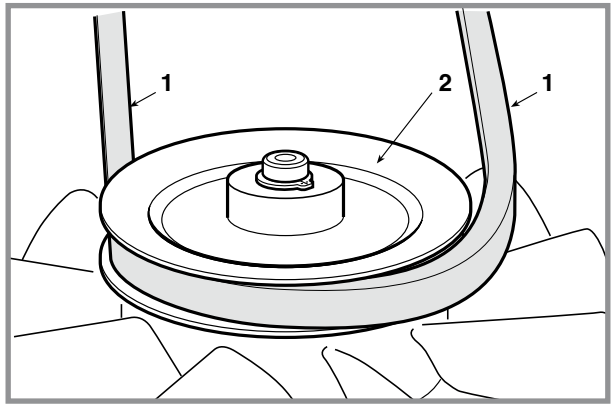


☛ Remove the collector channel

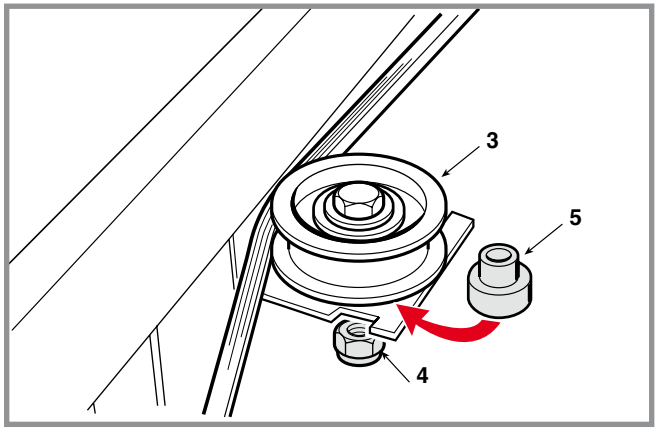
For greater operating convenience it is recommended that the transmission belt is slackened off; this is done by ...

➤ ***mechanical transmission models:***
engaging the parking brake.

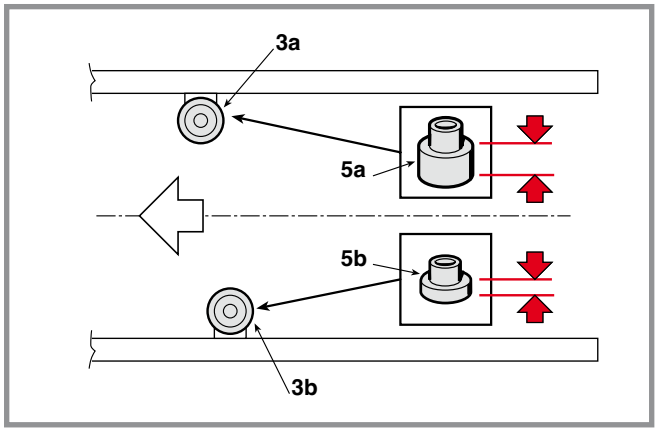
➤ ***hydrostatic drive models:***
grasping the two branches of the belt (2), pulling it just enough to free it from the pulley throat (3), overcoming the resistance of the tension regulator guide pulley.



The two wheels (3) are held onto the frame by two nuts (4), with a spacer in between (5).



When reassembling, there should be kept in mind that:
- the high spacer (5a) is to be fitted beneath the right-hand wheel (3a);
- the short spacer (5b) is to be fitted beneath the left-hand wheel (3b);



When reassembly is completed, tighten the nuts (4) to the amounts shown.

At the end...

☛ Adjust the drive engagement.

General informations

Related topics

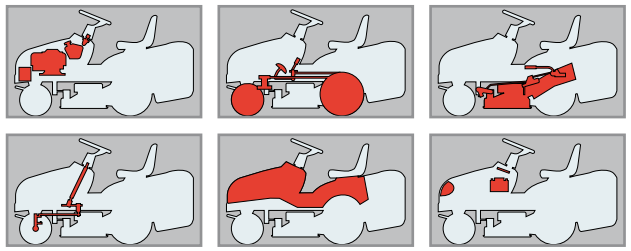
[☛ 4.1] Adjusting the engagement and checking the blade brake

[☛ 8.2] Belts assembly

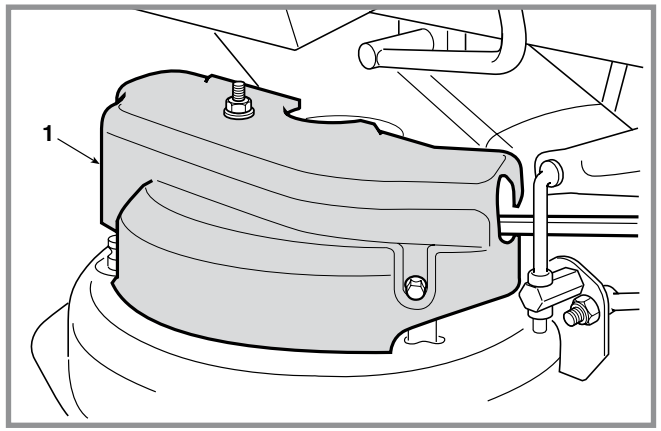
Tightening torques

5	Steering rod fixing nut	18 ÷ 20 Nm

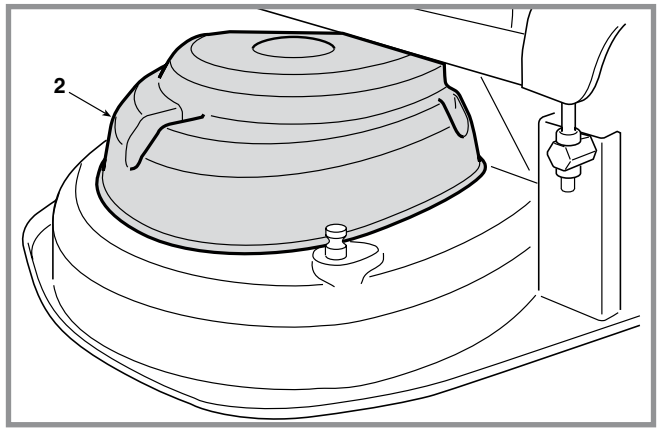
Map of functional units

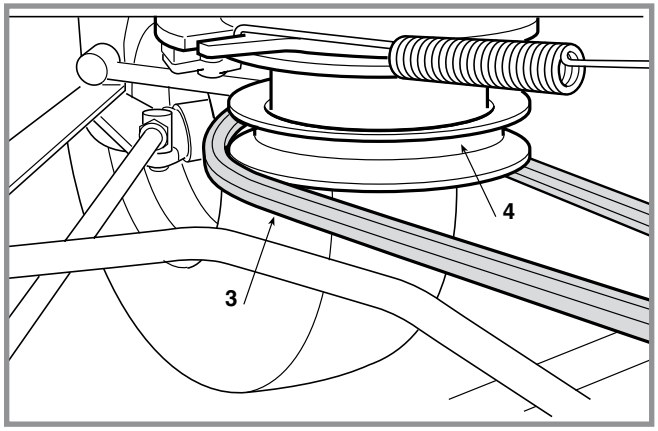


Remove the right (1) and left (2) guards fixed by the relative screws and/or nuts.



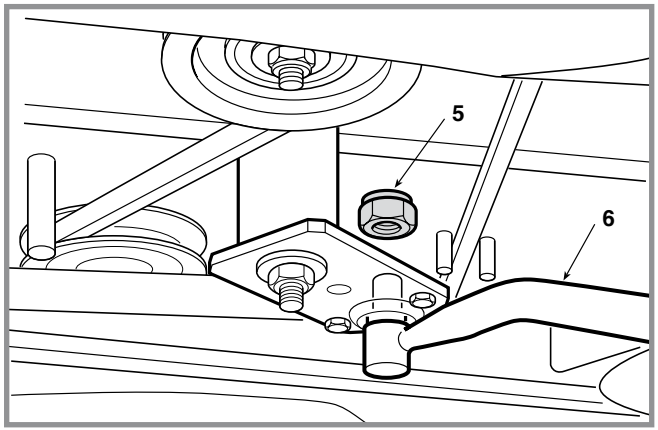
NOTE *The blade belt guards could have different configurations and fixings; in any case they must all be removed, after having identified all the fixing points.*

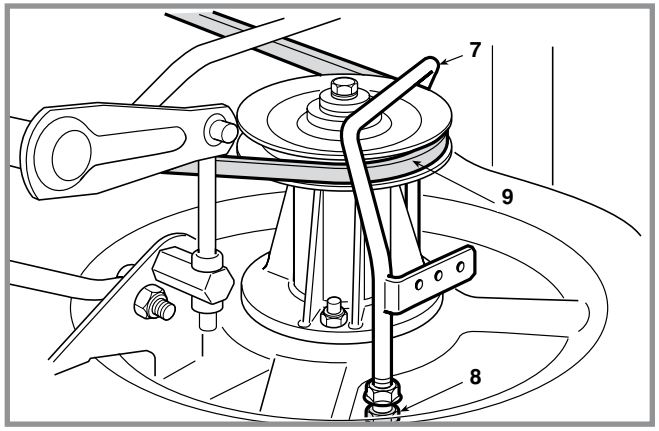




Free the blade belt (3) from the clutch pulley (4).

Unscrew the nut (5) and disconnect the steering rod (6) to allow passage of the belt.

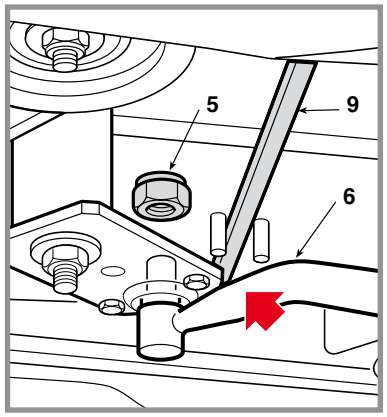




Loosen the left belt guide (7) fixed by two nuts (8).

At this point the tension regulator guide pulley can distanced manually and the belt (9) unthreaded and replaced.

For reassembly perform the operations described above in reverse, making sure that the blade control belt (9) remains above the steering rod (6).



IMPORTANT *It is always advisable to replace the nut (5) whenever it is dismantled.*

Once assembly is completed ...

☛ Adjust the blade engagement.

Always reassemble the side safety guards.

REPLACEMENT OF THE SUPPORTS AND SHAFTS OF THE BLADES

General informations

Related topics

[☛ 2.2] Special tools

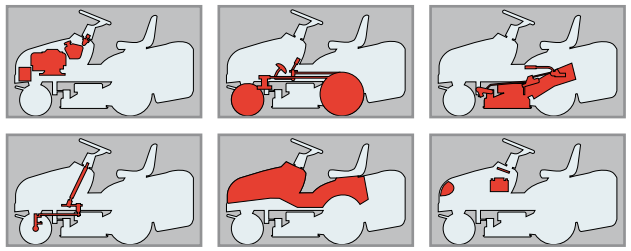
[☛ 4.9] Removing, sharpening and balancing the blades

[☛ 5.7] Removal of the cutting deck

Tightening torques

7 Screws for pulleys fastening	20 ÷ 25 Nm
10 Flanged support fixing nuts.....	25 ÷ 30 Nm

Map of functional units



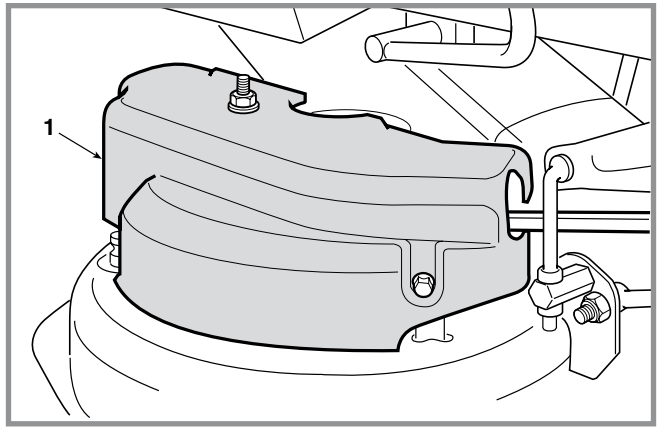
☛ Remove the cutting deck.

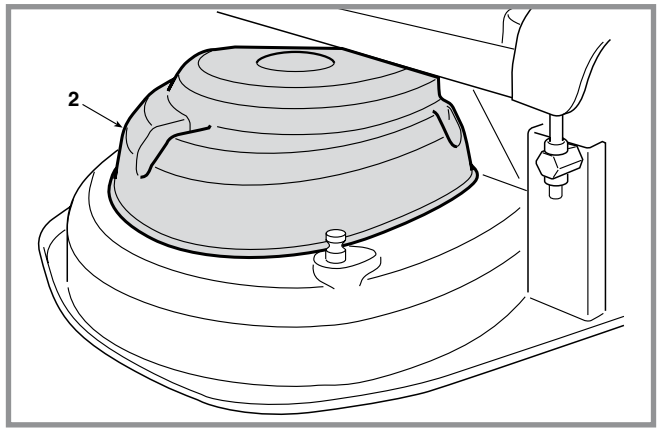
NOTE *This operation is not strictly necessary since, with a little practice and experience, it is possible to dismantle the deck supports without removing the cutting deck.*

☛ Remove the blades and take off the hub

Remove the right (1) and left (2) guards fixed by the relative screws and/or nuts.

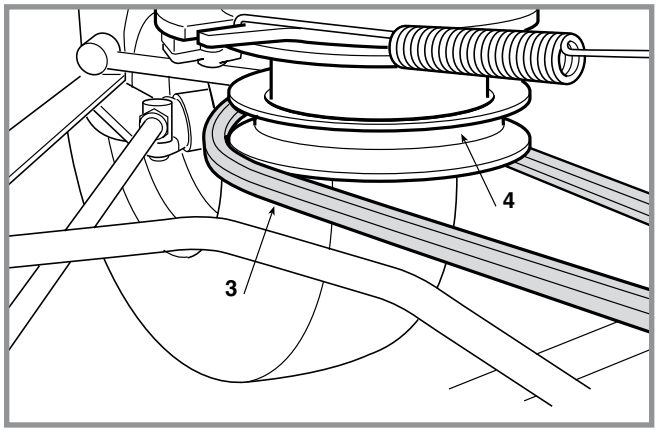
NOTE *The blade belt guards could have different configurations and fixings; in any case they must all be removed, after having identified all the fixing points.*





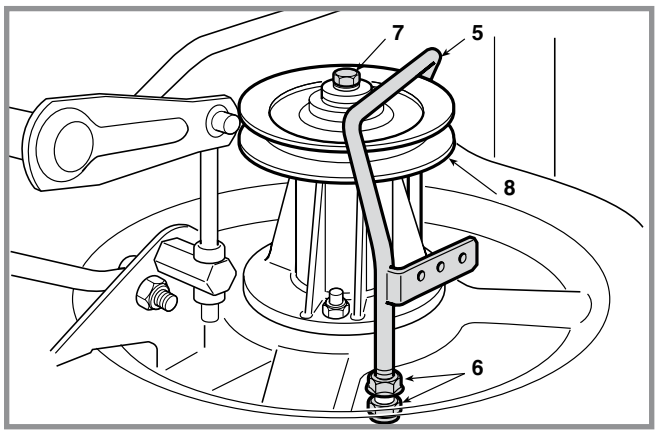
A) Replacement of the supports of the blades

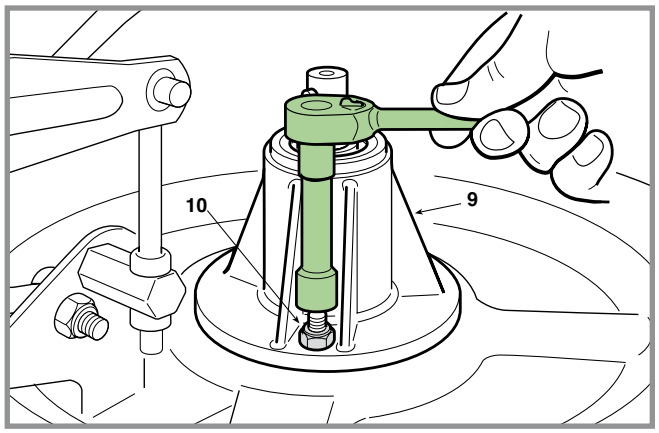
Free the blade belt (3) from the clutch pulley (4) and set the cutting height adjustment lever to position «1».



Remove the left belt guide (5) fixed by two nuts (6).

Unscrew the central screws (7) and unthread the pulleys (8).



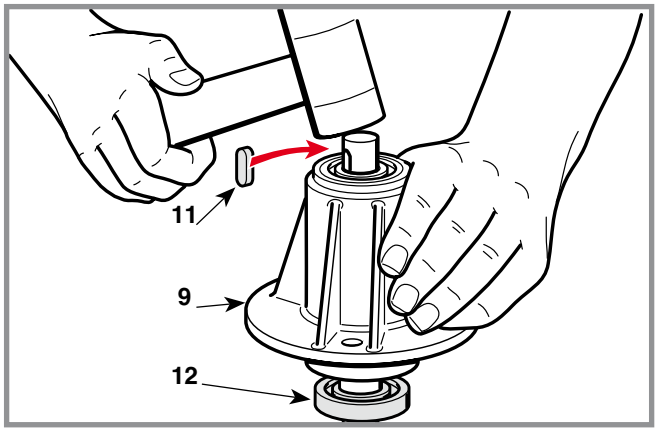


Dismantle the flange support (9) by unscrewing the three nuts (10).

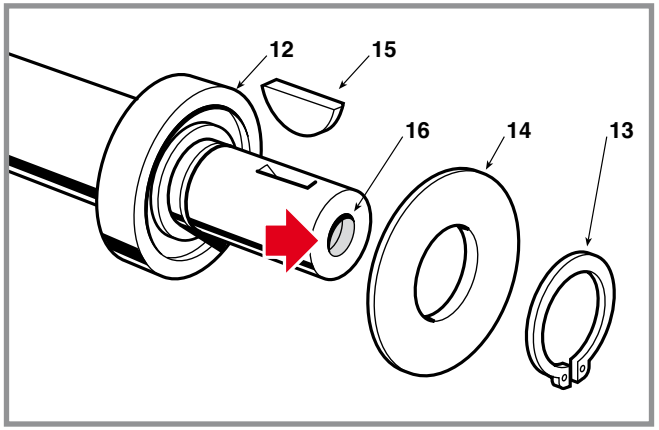
NOTE - *The entire support (9), including shafts and bearings, is a spare part available as a single assembly unit.*

B) Replacement of the bearings and the shafts of the blades

Remove the key or the two keys (11) and hit the shaft with a plastic mallet on the pulley side in order to remove the shaft together with the lower bearing (12).

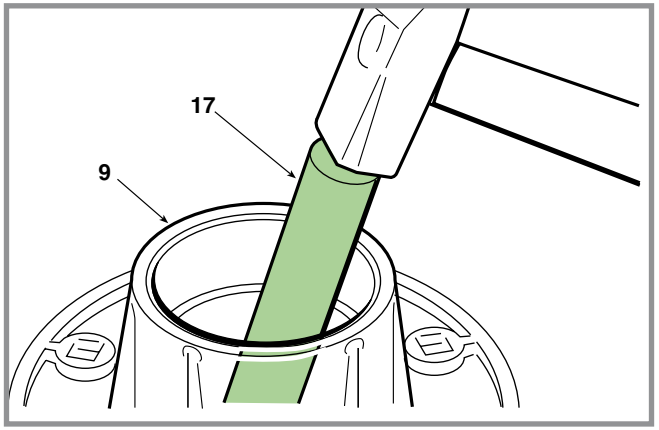


After having removed the snap ring (13), the dust cover (14) and the spline (15), the bearing (12) splined onto the shaft can be removed using a normal extractor, taking care to close up the threaded hole (16) with a screw to prevent the point of the extractor from damaging the thread.

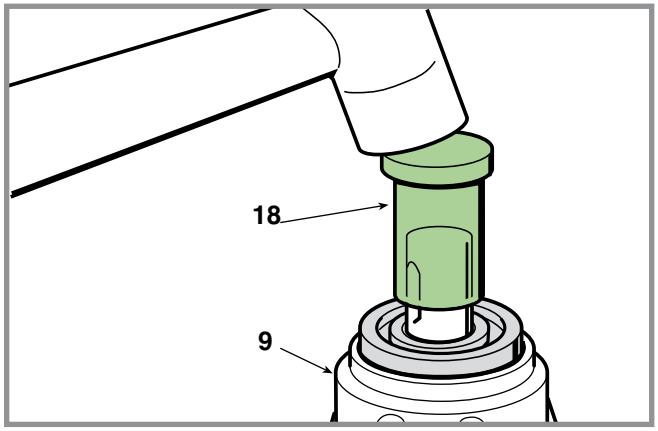


The second bearing still in place must be removed by hitting it from the inside of the flange using a 12 ÷ 15 mm diameter round bar (17).

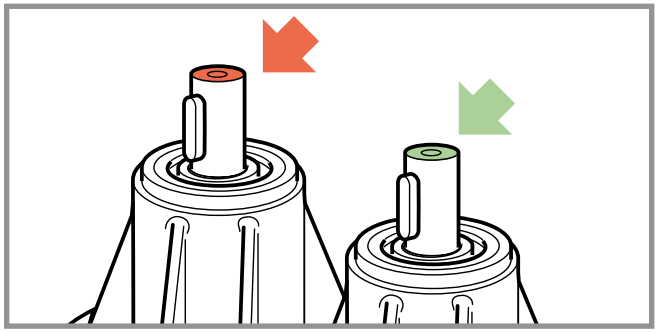
On reassembling, first put the shaft into the hole of the lower bearing and insert this into the support. Fit



on the upper bearing and, using the special bush (18) which works on the inner ring, hit it squarely with a mallet until the bearing is fully driven home.



IMPORTANT *The right and left shafts seem to be the same, but can be differentiated as follows:*
– right shaft: red paint on the pulley side;
– left shaft: green paint on the pulley side.
Before refitting the support assembly, check that these positions are correct.



Fit the flange supports onto the deck, fully tightening the nuts (10).

On completion of assembly of the supports, ...

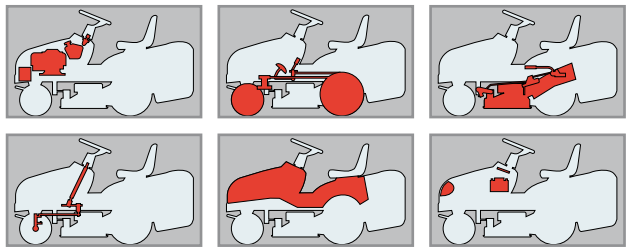
☛ Reassemble the blades.

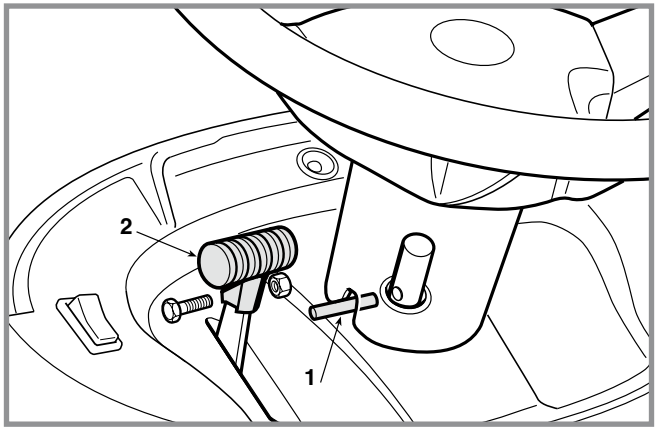
REPLACEMENT OF THE ACCELERATOR AND ADJUSTMENT OF THE CARBURETTOR

General informations

Related topics

Map of functional units

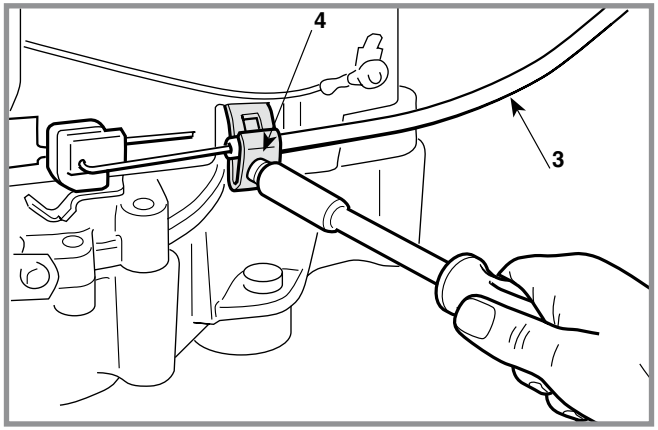


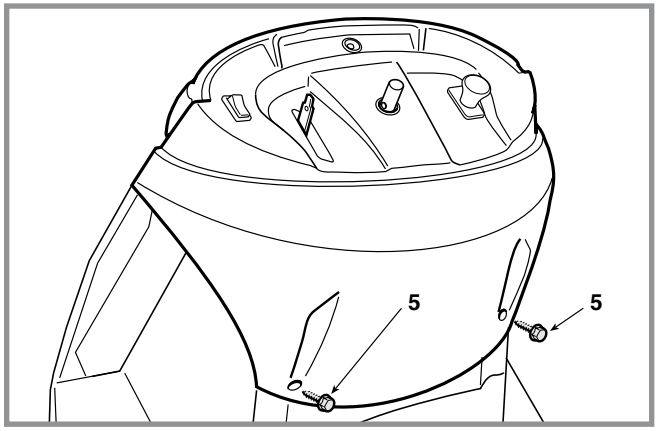


Remove the steering wheel, unthreading the pin (1).

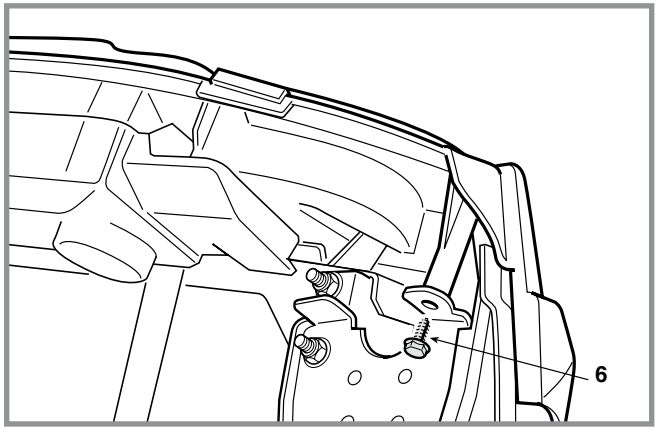
Remove the small knob (2).

Disconnect the end of the cable (3) from the engine connection terminal (4).

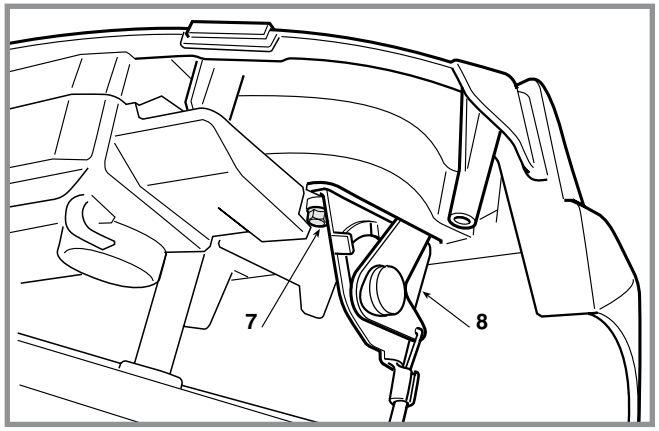




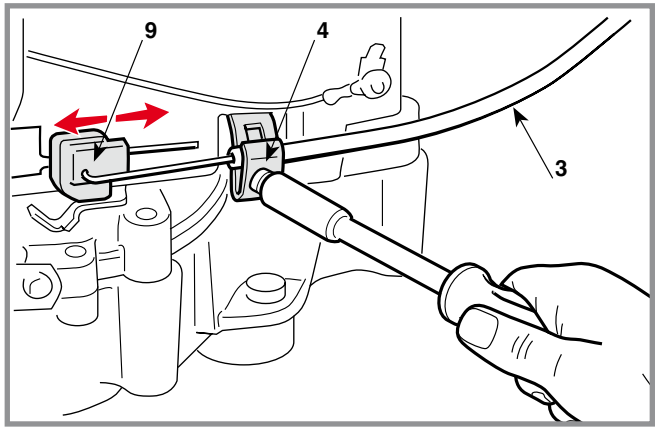
The dashboard is fixed by two screws (5) from the seat side and another two screws (6) inside the engine compartment.



Move the dashboard by the amount necessary to access the screws (taking care over the electric cables), unscrew the two fixing screws (7) and unthread the accelerator (8) together with the cable.



On assembling, put the accelerator lever in the «MINIMUM» position, connect the end of the wire (3) to the terminal (3) on the engine after having moved the cursor (4) in the same «MINIMUM» position specific to each type of engine and shown in the instruction booklet



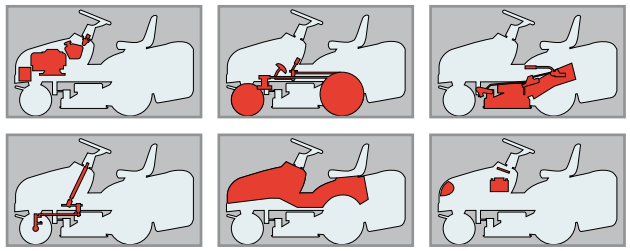
REPLACEMENT OF THE BRAKE PADS AND DISC

General informations:

Related topics

[☛ 2.3] Lifting of the machine
[☛ 4.2] Brake adjustment
[☛ 6.1] Removal of the wheels

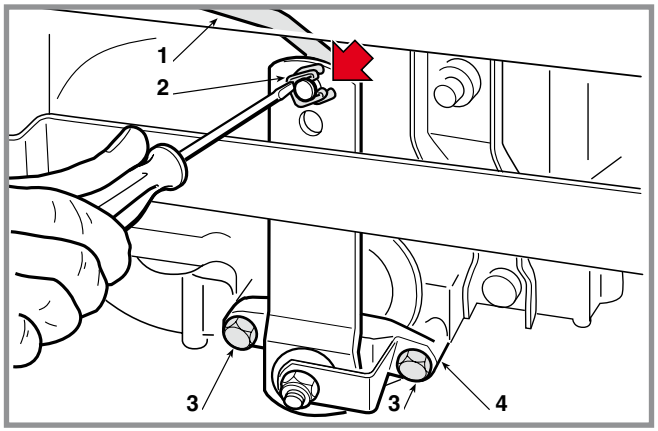
Map of functional units



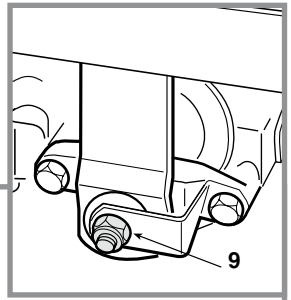
➤ ***mechanical drive models only***

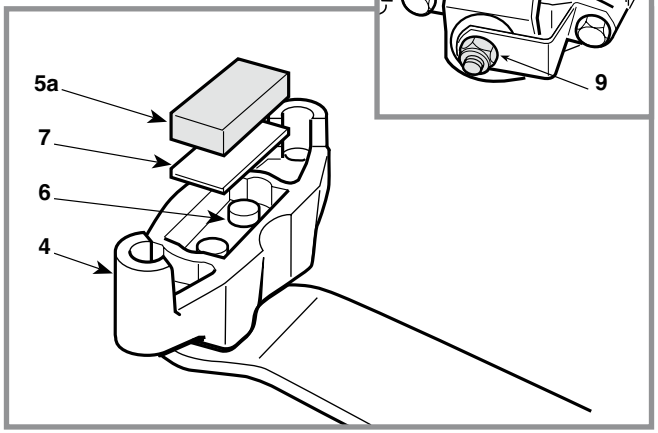
☛ Remove the left-hand rear wheel.

Disconnect the control rod (1) from the lever (2) and undo the two screws (3) which hold on the support (4).

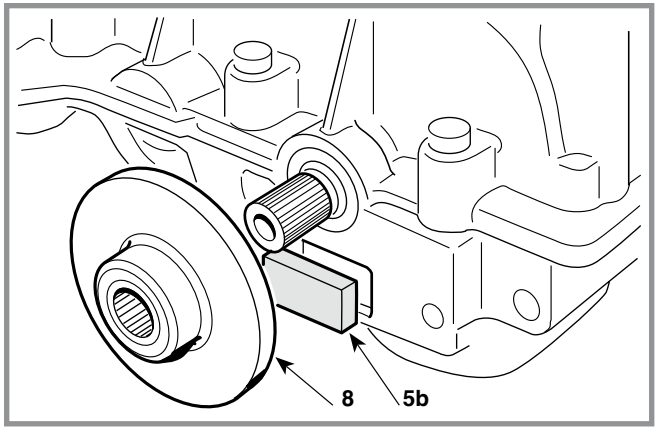


NOTE *During all these operations it is better to not unscrew or loosen the central screw (9) to avoid altering the calibration of the cam driving the pistons. If it has been moved, the lever's free movement will have to be checked.*





The support (4) contains a pad (5a) separated from the control pistons (6) by a plate (7).



The other pad (5b) can be reached by taking off the disc (8).

If there is oil on the pads, clean with solvent and go over them with fine-grade abrasive paper.

⚠ *Both pads should be replaced if the depth of either of them is less than 5 mm.*

⚠ *Renew the disc if it is damaged, distorted or less than 4 mm thick.*

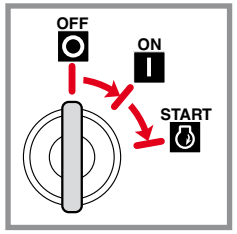
On reassembly, carefully reposition all the components and refit the complete support. When connecting the rod (1) be sure to use the upper hole in the lever (2).

When fully reassembled ...

☛ Check the brake adjustment.

General informations

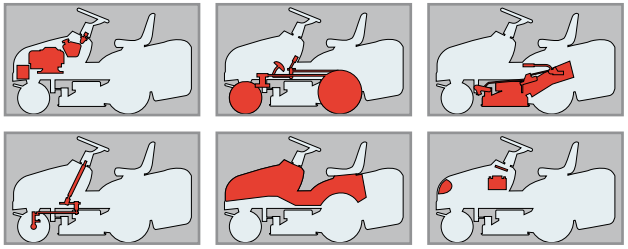
In the following some of the problems connected to the malfunctioning of the electrical system are shown, with their probable cause and the remedial action to be taken.
Should the problem continue after the appropriate checks, seek assistance from your local Service Centre.



Related topics

[☛7.2] Ttable for the cutting in of the safety devices
[☛7.3] Safety microswitches operation check
[☛7.4] Terminal board supply check
[☛7.6] Starter relay operation check
[☛7.7] Electronic card operation check
[☛7.8] Recharge circuit check
[☛7.9] Maintenance of the sealed battery

Map of functional units



PROBLEM	CAUSE	REMEDY
1. Activation of the self-resetting protection 1)		
a) ... on inserting the key in position «ON»	Battery terminal crossed	Check the battery connections
	Short circuit to earth	Check the connectors and wiring of the microswitches
b) ... in position «START» or after a few seconds use, following an attempt at starting with outside means:	Sulphated battery (it no longer accepts recharging)	Replace the battery
	Faulty or wet electronic card	Check and dry with low pressure tepid air (hair-dryer)
	Disconnected or missing battery	Reconnect the battery. It must always be connected
	Battery terminals corroded or with poor contact	Check and clean the connections
c) ... after several minutes' use:	Poor or missing earth contact on the charge regulator	Check the earth connections and the screws fastening the regulator
	Overvoltage from a malfunction in the regulator	Check the recharge circuit
	Battery disconnected or faulty during use	Check the battery or wiring
2. With the key in the «ON» position the pilot lamp(led 1) or dashboard (led 6) remain off	The battery is not supplying the card	Check the connection cables
		Check the battery's condition
	Battery or card not earthed to frame	Check and put right
	10 A fuse blown	Replace fuse (10 A)
	Battery terminal crossed	Check connections

WARNING! *The self-setting guard reaches very high temperatures (around 180 °C) which are to be considered normal. Similarly, there might be some smoke inside the box which is due to the overheating of the powder inside.* ***Do not touch this component of the circuit board until it has cooled down.***

[1] Activation of the self-resetting protection of the electronic card is signalled by the failure of the LED to light, by it switching off during work, by the engine running erratically or stopping.

IMPORTANT *Faulty electronic cards must always be replaced without trying to repair them or replace single components.*

PROBLEM	CAUSE	REMEDY
3. The pilot lamp (led 1) or dashboard (led 6) come on but, with the key in the «START» position, the starter motor does not turn or lacks power (poor starting)	The battery is not supplying sufficient current	Recharge the battery
	Badly earthed battery, or the starter relay or engine not earthed	Check and put right
	Starter relay is faulty	Check that the starter relay is activated
4. The pilot lamp (1 led) is flashing with the key in the «START» position and the starter motor does not turn	Starting not permitted	After checking that the conditions are met, check all the microswitches and the relative wiring
5. The starter turns but the engine does not start	No fuel flowa	Check the leads for the carburettor solenoid valve opening control (if provided) or check the fuel stopcock and filter
	Impaired starter system	Check that the spark plug cap is positioned correctly
		Check that the spark plug electrodes are clean and have the correct gap
6. The starter continues to turn after engine has started, and does not stop when the key is removed	Mechanical difficulties with the contact breakers of the starter relay	Replace the starter relay
	Starter works erratically for mechanical or electrical reasons taking excessive current and causing binding of relay contacts	Check the starter
7. The starter operates as soon as the key is in the «ON» position, and can be turned off only by removing the key	Fault in the card	Replace the card
	Starter block operating faults	Replace the block
8. The pilot lamp (led 1) or dashboard (led 6) become weak after several hours' work and the engine goes off	Insufficient charge	Check that the charging cable has not detached
		Check that there are no current leakages caused by cables with damaged insulation
		Check the recharge circuit
	Charger fuse blown	Replace fuse (25 A) and check the recharge circuit

IMPORTANT *Faulty electronic cards must always be replaced without trying to repair them or replace single components.*

PROBLEM	CAUSE	REMEDY
9. The engine stops while in use for reasons not due to the safety devices cutting in	The safety devices have cut in or are faulty	Check the operation of the microswitch operation and the relevant wiring
	Accidental detaching of an electrical wire	Check all wiring
	Starting of engine not permitted	After checking that the conditions are met, check all the microswitches and the relative wiring.
10. The 10 A fuse cuts in	Short circuit or overload on the power side of the card (ignition block, starter relay, headlamps and recharger connector)	Find and replace the defective user
	Short circuit or damage to the electronic card protection (power side)	Try changing the card with one that is known to work. If the problem stops, replace the faulty card
11. The 25 A fuse cuts in	Faults in the battery charging circuit	Replace fuse (25 A) and check the recharge circuit
12. No audible signal for the “grass-catcher full” condition	Malfunctioning or faulty blade switch or microswitch and grass-catcher signalling	Check the switch, the microswitch and wiring. **WARNING! -** Check that the blade switch stops the engine or prevents if from being started if the acknowledgement conditions are not met
	Malfunctioning or faulty electronic card	Try changing the card with one that is known to work. If the problem stops, replace the faulty card

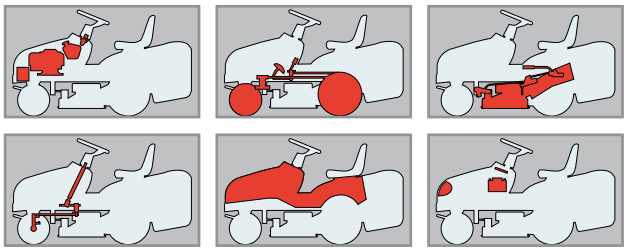
IMPORTANT *Faulty electronic cards must always be replaced without trying to repair them or replace single components.*

General informations

Related topics

[☛ 7.3] Safety microswitches operation check

Map of functional units



⚠ This table shows the various situations in which the safety devices intervene.

A) STARTING («START» position)

The engine DOES NOT start, when:

Operator		–/–	–/–	Absent
Grass-Catcher		–/–	–/–	–/–
Blades		–/–	Engaged	–/–
Drive		Engaged	–/–	–/–
Parking		–/–	–/–	–/–
Indication on the Dashboard	**1 LED**			
	6 LED			

B) WHILE CUTTING

The engine STOPS start, when:

Operator		Absent	Absent	–/–	–/–	Absent	Seated
Grass-Catcher		–/–	–/–	Missing	–/–	–/–	Fitted
Blades		–/–	Engaged	Engaged	Engaged	–/–	Engaged
Drive		Engaged	–/–	–/–	–/–	–/–	Reverse
Consent Button		–/–	–/–	–/–	–/–	–/–	Released
Parking		–/–	–/–	–/–	Engaged	–/–	–/–
Indication on the Dashboard	**1 LED**						
	6 LED						

–/– Irrelevant condition for the triggering of safety devices

1 LED: = Pilot lamp on = Pilot lamp flashing

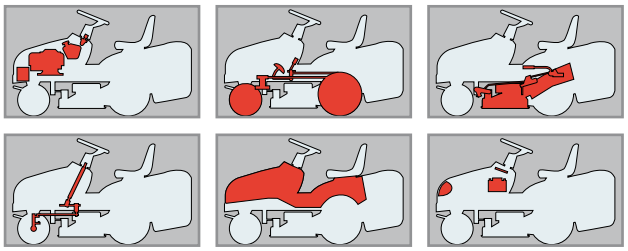
6 LED: = Pilot lamp on = Pilot lamp off = Pilot lamp uninfluential

SAFETY MICROSWITCHES OPERATION CHECK

General informations

Related topics

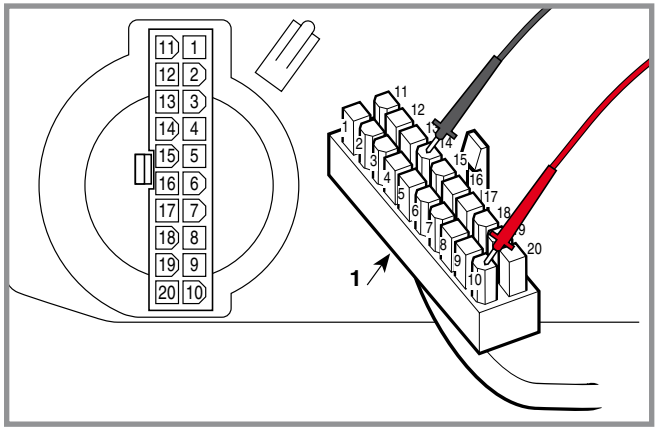
Map of functional units



This check is done by disconnecting connector CN1 and using the tester in Ohmmeter mode.

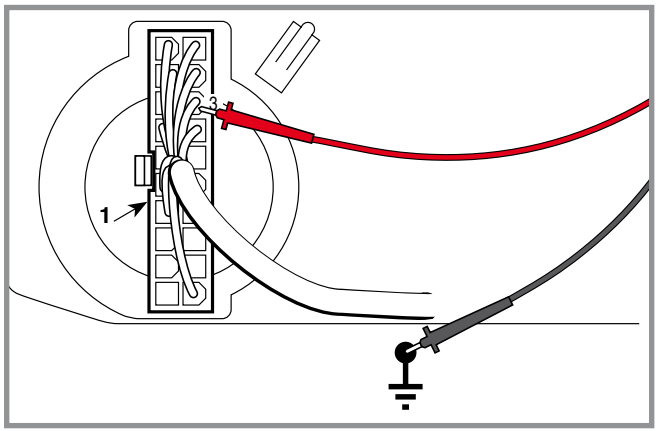
This operation must be performed without the operator aboard, making contact with the ferrules on the contacts of the wiring connector (1) and must give these results:

N° Contacts	Tester reading and condition		
GRASS-CATCHER ATTACHED MICROSWITCH			
10 - 6	∞ (without g.catc.)	O (with g.catcher)	
SEAT MICROSWITCH			
10 - 14	∞ (absent)	O (seated)	
PARKING MICROSWITCH			
10 - 17	O (free)	∞ (engaged)	
BLADE SWITCH			
10 - 16	∞ (engaged)	O (disengaged)	
"IN NEUTRAL" SIGNAL			
10 - 7	∞ (drive)	O (neutral)	
GRASS-CATCHER FULL MICROSWITCH			
13 - Earth	O (full)	∞ (empty)	
REVERSE GEAR MICROSWITCH			
10 - 15	∞ (Pressed)	O (Released)	
REVERSE CONSENT BUTTON			
8 - 9	O (Pressed)	∞ (Released)	
STARTER UNIT			
+ Battery - 11	∞ (OFF)	O (ON)	O (START)
+ Battery - 12	∞ (OFF)	∞ (ON)	O (START)



ENGINE STOP

This operation must be done by keeping the connector (1) attached and should give this result:



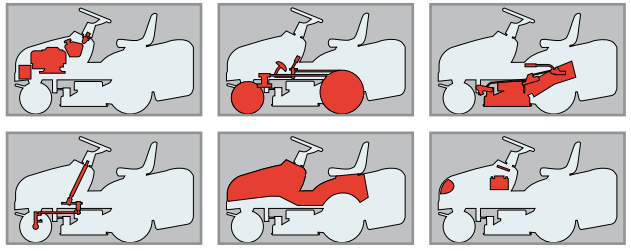
N° Contacts	Tester reading and condition
3 - Earth	O (Always)

TERMINAL BOARD SUPPLY CHECK

General informations

Related topics

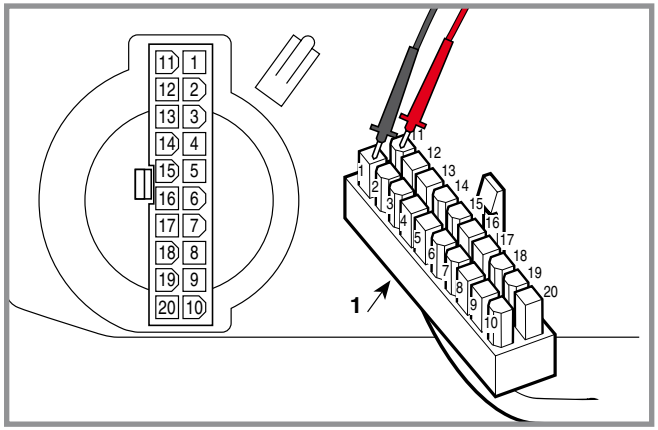
Map of functional units



This check is made with the tester operating as a Voltmeter (Volts DC 0 ÷ 20), with the black ferrule on terminal 1 and the red one on terminal 11of the connector (1) of the wiring.

– The key in the «ON» position

The reading shows the battery voltage, which should never go below 11 Volts.



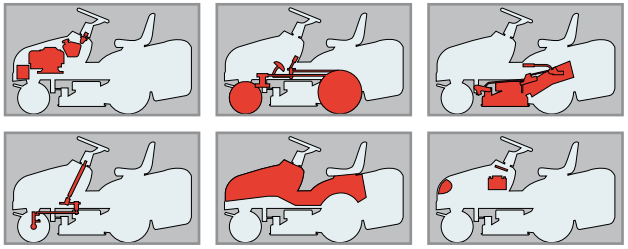
ELECTROMAGNETIC CLUTCH OPERATION CHECK

General informations

Related topics

[☛ 7.3] Safety microswitches operation check

Map of functional units



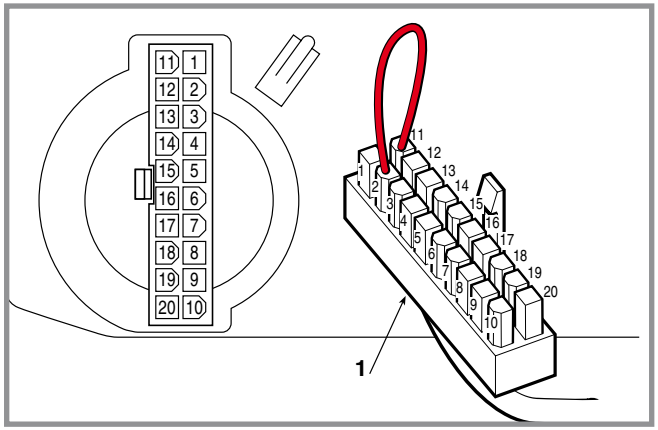
WARNING! ***This check must be made with the engine off.***

Disconnect connector CN1 and bridge terminals 2 and 11 of cabling connector CN1 (1).

With the key set to «ON», when the switch is operated a click must be heard from the moving part of the clutch, due to excitation of the electric wiring.

If this is not so, check the operation of the cabling and control switch.

The clutch must be replaced if engagement does not take place after these checks.

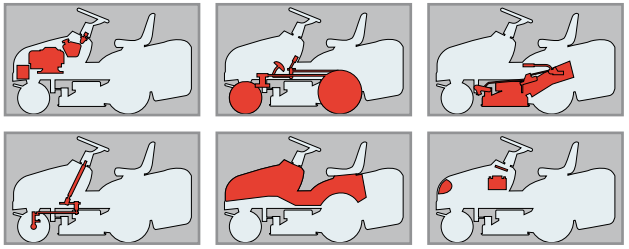


STARTER RELAY OPERATION CHECK

General informations

Related topics

Map of functional units



WARNING! ***Remove the cap of the sparking plug (or plugs), since the safety systems that normally prevent accidental starting of the engine are cut out when the checking procedure is carried out***.

To do this requires:

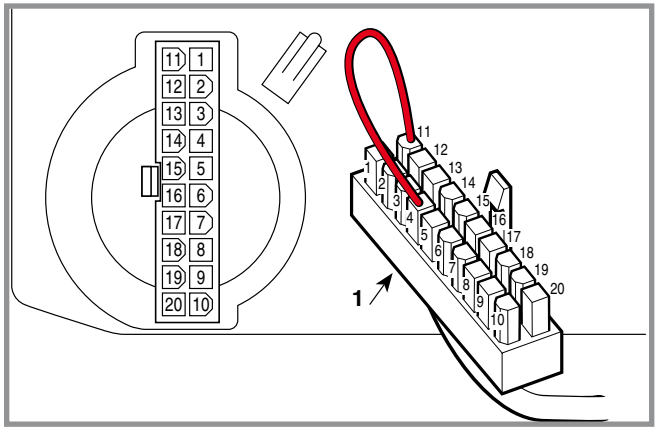
– operator seated,
– blades disengaged,
– the key in the «ON» position.

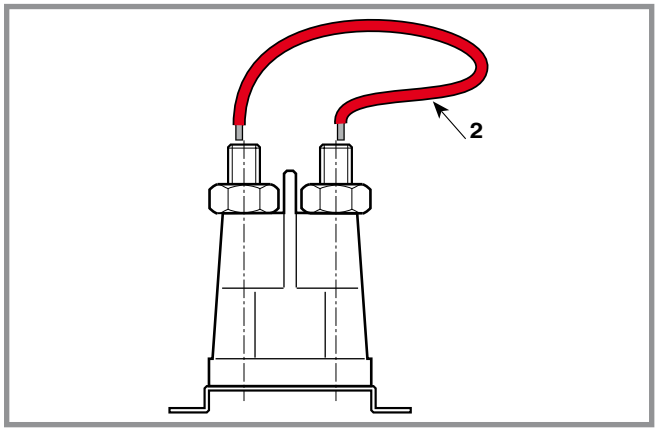
Disconnect the connector (1).

In making a bridge between the terminals 11 and 4 of the wiring connector (1), the click of the relay bobbin should be heard and the starter motor should come into action.

➤ ***except Honda engines:***
If the bobbin clicks but the starter does not start, make a bridge (2) with a large section cable (5 mm^2) between the power contacts of the relay.

If the starter comes into operation, look for the fault within the relay or replace it. Otherwise, check the starter together with its wiring.



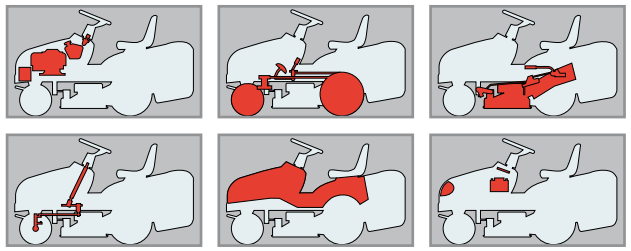


ELECTRONIC CARD OPERATION CHECK

General informations:

Related topics:

Map of functional units



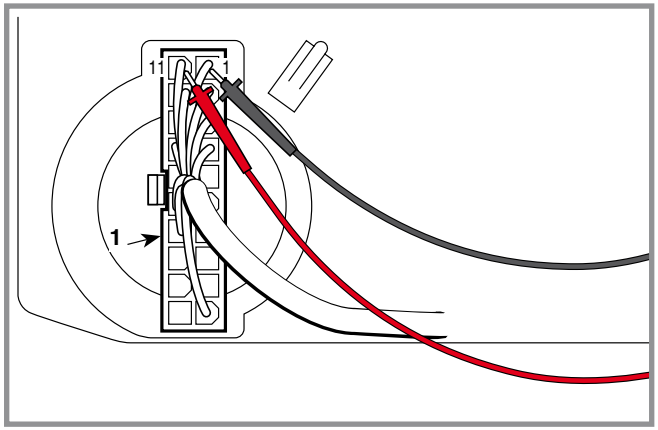
To make this tests it is necessary to have:
– The key in the «ON» position
– Connector (1) connected to the card.

In this situation the pilot lamp should come on.

A) Card supply

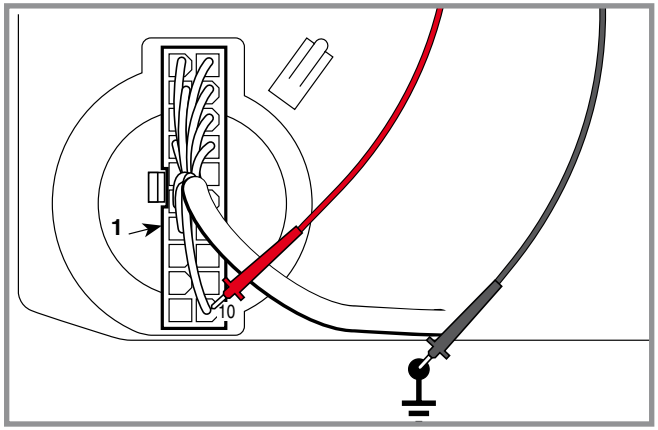
This check is done with the tester in Voltmeter function (Volt DC 0 ÷ 20), with the black ferrule on terminal 1 and the red ferrule on terminal 11 of the wiring connector (1).

The reading on the tester shows the battery's voltage.



B) Safety and service supply check

This check is done with the tester in Voltmeter function (Volt DC 0 ÷ 20), with the black ferrule to earth and the red ferrule on terminal 10 of the wiring connector (1).

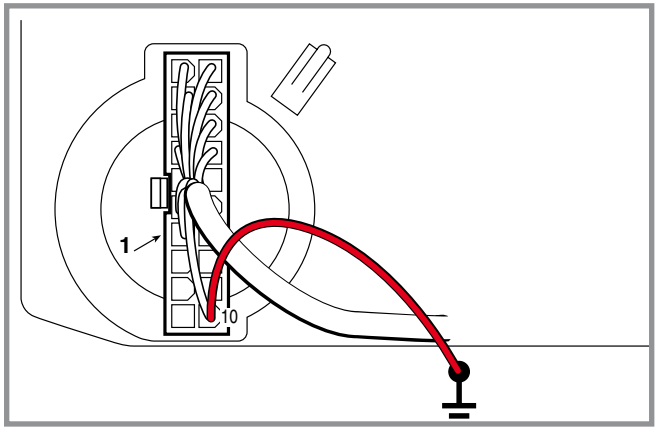


C) Checking the operation of the self-setting protection

By connecting terminal 10 of the connector (1) to the frame's earth, the pilot lamp should go out due to the protection cutting in; eliminating the connection to earth, the pilot lamp should come on again.

NOTE *During this test, the self-setting protection reaches very high temperatures (around 160 °C) which are to be considered normal. Similarly, there might be some smoke inside the transparent box which is due to the overheating of the powder inside.*

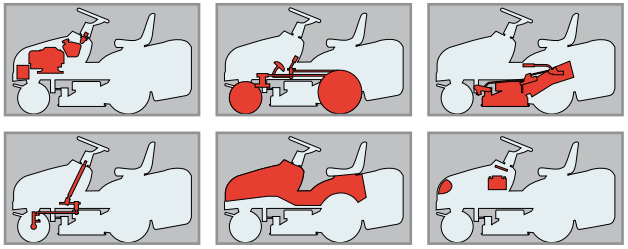
WARNING! ***Do not touch this component of the card until it has cooled down.***



General informations

Related topics

Map of functional units



The job of the voltage regulator is to supply a flow of current to the battery at a constant voltage of about 14 -15 Volts, cutting in every time that the output voltage from the generator exceeds this threshold.

A faulty regulator may recharge the battery insufficiently (therefore needing frequent recharging) or, otherwise, may supply overloading that causes the self-resetting protection to cut in.

Before checking the recharge circuit, make sure that:

- all connections are correct;
- the earth connections are firmly connected, especially the earth connection to the regulator;
- the battery is charged and not sulphated;
- the charger fuse is not blown.

A) Checking the lower charging limit

Start the engine and keep running at minimum with the headlights on (if fitted).

With the voltmeter tester, measure the voltage at the battery terminals. If the value does not rise but tends to fall, even slowly, it means that the regulator is not charging sufficiently and must be replaced.

If the voltmeter shows no value it means that the charger fuse is blown.

➤ ***only with a Honda engine:***
check the recharge relay. On moving the key from «OFF» to «ON» and vice versa, the ticking of the relay contacts should be heard; otherwise it should be replaced.

B) Checking the upper charging limit

Start the engine and take it to maximum speed. With the tester in the voltmeter function, measure the voltage at the battery terminals. The amount should slowly rise and settle at 14-15 Volts after about 10-15 minutes.

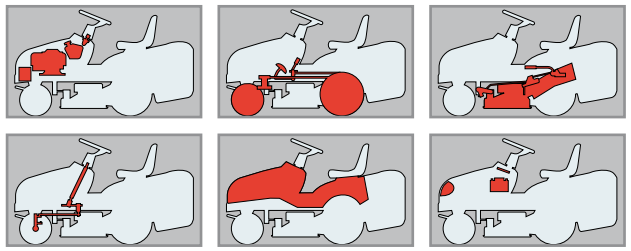
If this value is exceeded to the extent that the engine stops due to the self-resetting protection cutting in (at approximately 16 Volts) it means that the regulator is charging too much and must be replaced.

MAINTENANCE OF THE SEALED BATTERY

General informations

Related topics

Map of functional units



A) General information

In a sealed “dual” battery, the electrolyte for each element is carefully measured out during manufacture and sealed at source, in order to ensure maximum performance during the battery’s entire life.

With a battery of this type, it is not necessary to add water or acid, and the cover must never be opened or removed.

B) Recommendations for correct use

To keep the battery performing at optimum levels and to increase its life, various precautions should be taken:

– always keep the battery fully charged;
– always recharge a flat battery within 1 month, otherwise the elements could be damaged and no longer able to take the charge (sulphated);
– always recharge the battery before and after periods of prolonged inactivity or storage.

IMPORTANT! *Only recharge with a constant voltage battery charger. Use of other types of battery charger could damage the battery.*

C) Rules for recharging the battery

La ricarica è una operazione particolarmente IMPORRecharging is a particularly important operation for the life of the battery and must be carried out according to these instructions:

– do not recharge the battery when its case is broken or damaged;
– carefully read the instructions for using the battery charger and the battery;
– use a suitable battery charger;
– recharge at a room temperature of between +10 and +30 °C;
– check that the battery does not heat to beyond 50 °C while recharging. If it should do so, stop recharging immediately and dispose of the battery since it will be unusable.

With the battery disconnected (and at rest for at least 12 hours) and the tester in voltmeter function, measure the voltage between the terminals. The amount given (open circuit voltage) gives an indication of the operations to be carried out, as per the following table:

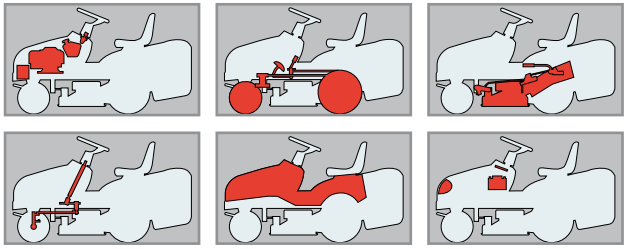
Battery voltage with open circuit	Battery state	Operation to be carried out
> 12.6 Volt	Fully charged	None
< 12,4 Volt	Flat	Recharge

Check the battery voltage at least 12-24 hours after recharging.

General informations

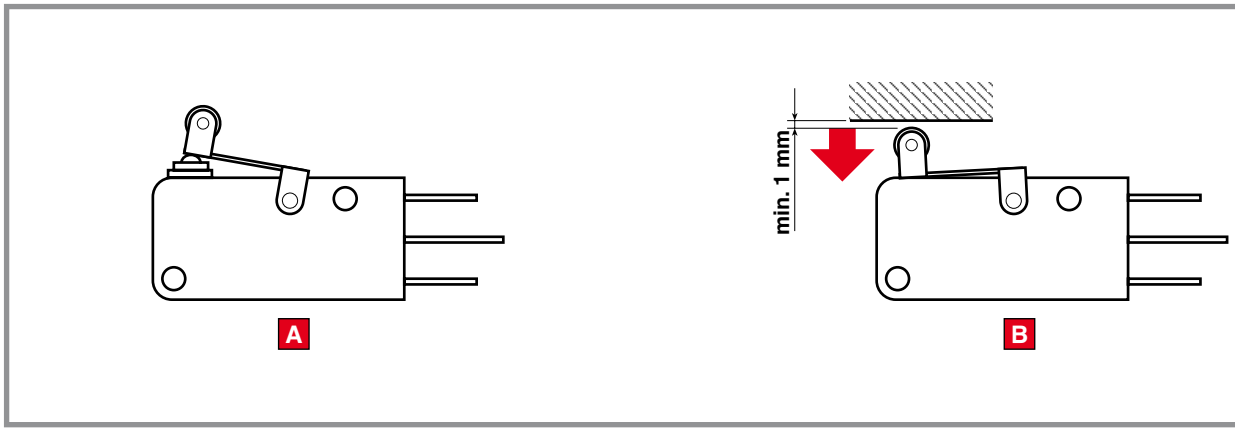
Related topics

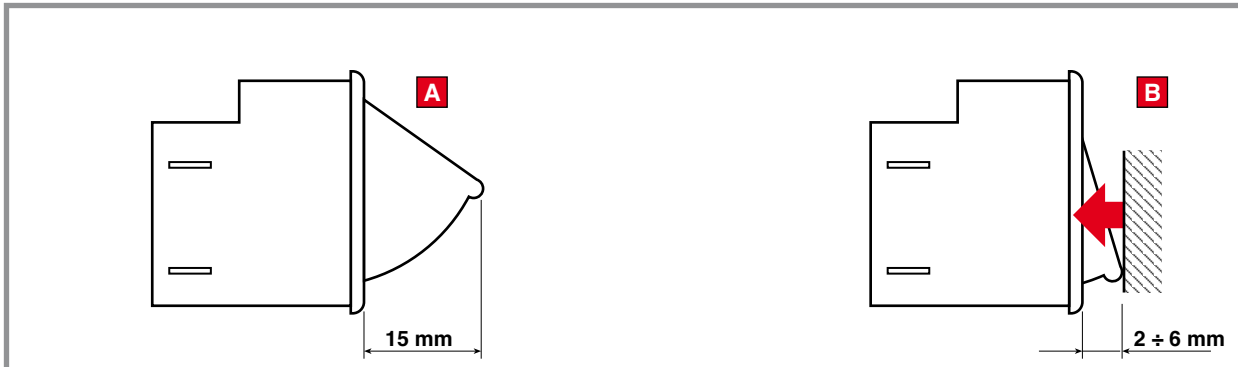
Map of functional units



IMPORTANT! *If the microswitches are to function correctly, it is important to follow the exact assembly positions by referring to the drawings that indicate the various usages of each type.*

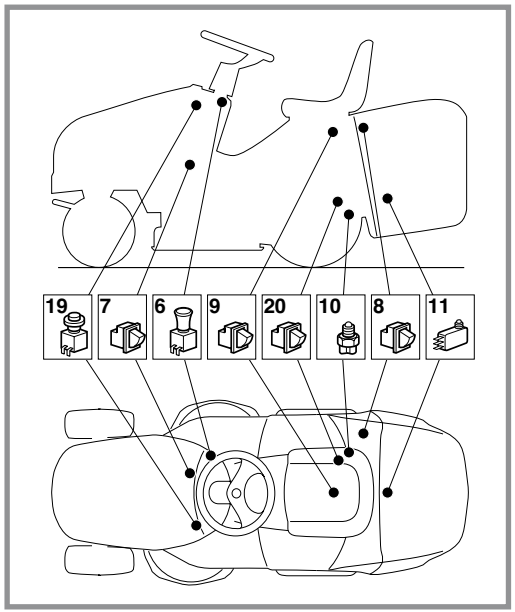
A = Free
B = Activated



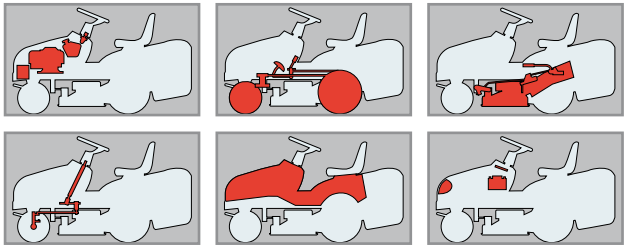


General informations

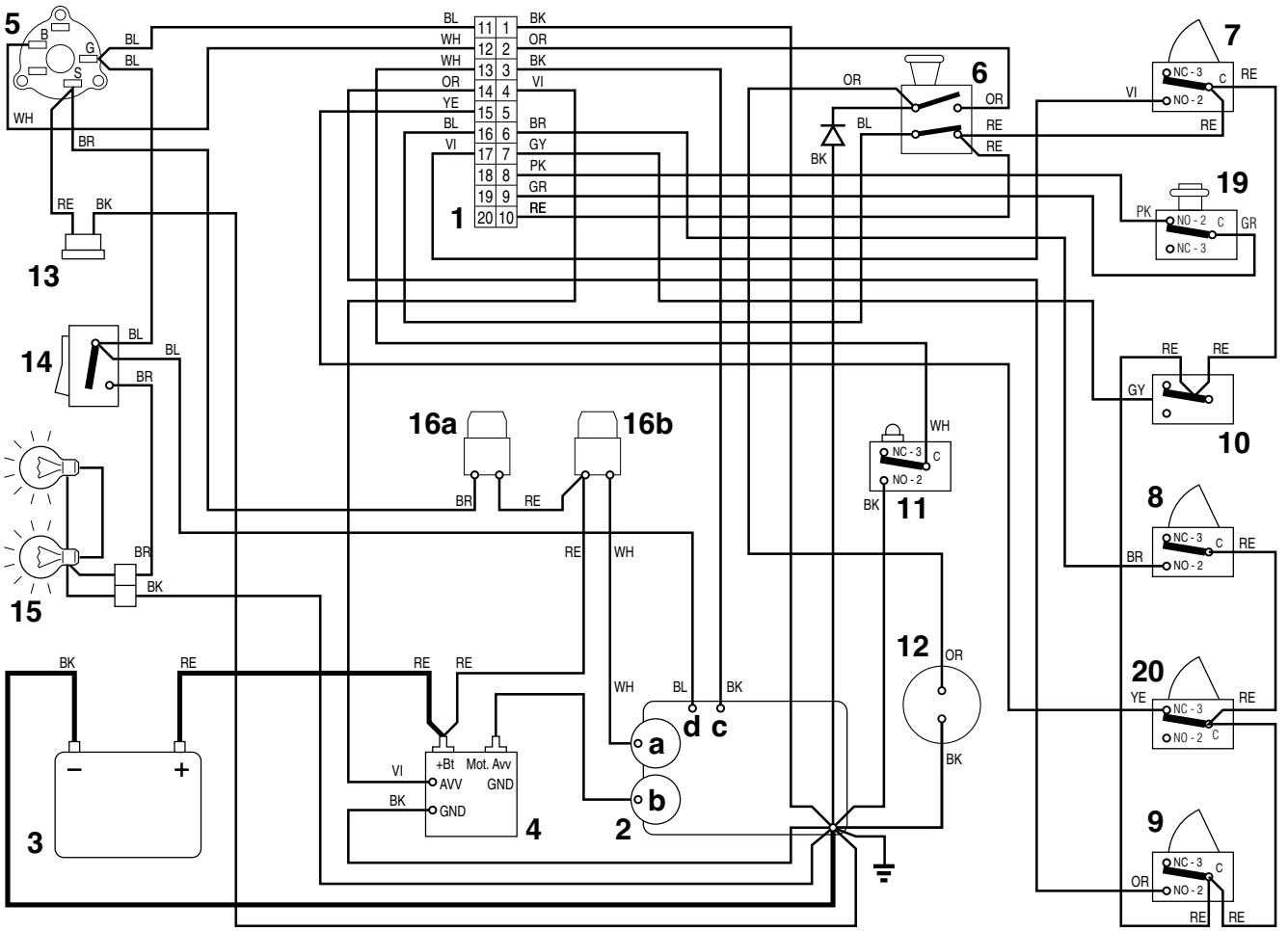
Related topics



Map of functional units



➤ *Engines B&S - Stiga - Kawasaki*



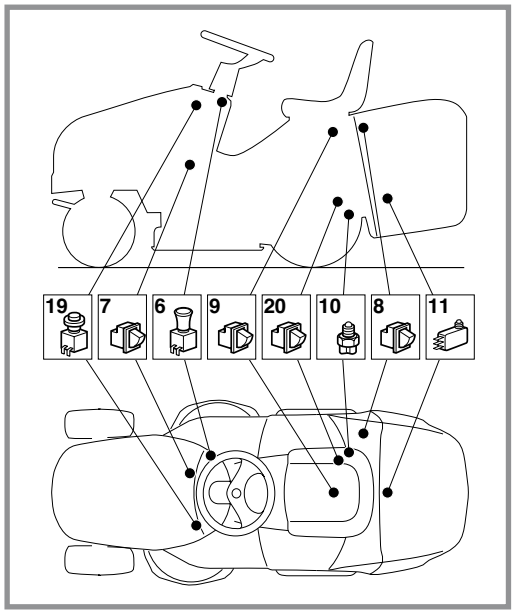
1 Electronic card
2 Engine
2a Generator
2b Starter motor
2c Engine stop
2d Carburattor
3 Battery
4 Starter relay
5 Key ignition switch
6 Blades switch
7 Brake microswitch
8 Grasscatcher microswitch
9 Seat microswitch
10 Neutral microswitch
11 Grasscatcher full microswitch
12 Clutch
13 Recharge connector
14 Headlight switch
15 Headlight
16a 10 A fuse
16b 25 A fuse
19 Reverse consent button
20 Reverse gear microswitch

CABLE COLOURS

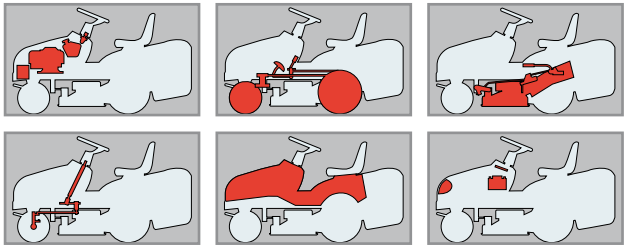
BK Black
BL Blue
GR Green
BR Brown
GY Grey
OR Orange
PK Pink
RE Red
VI Violet
WH White
YE Yellow

General informations

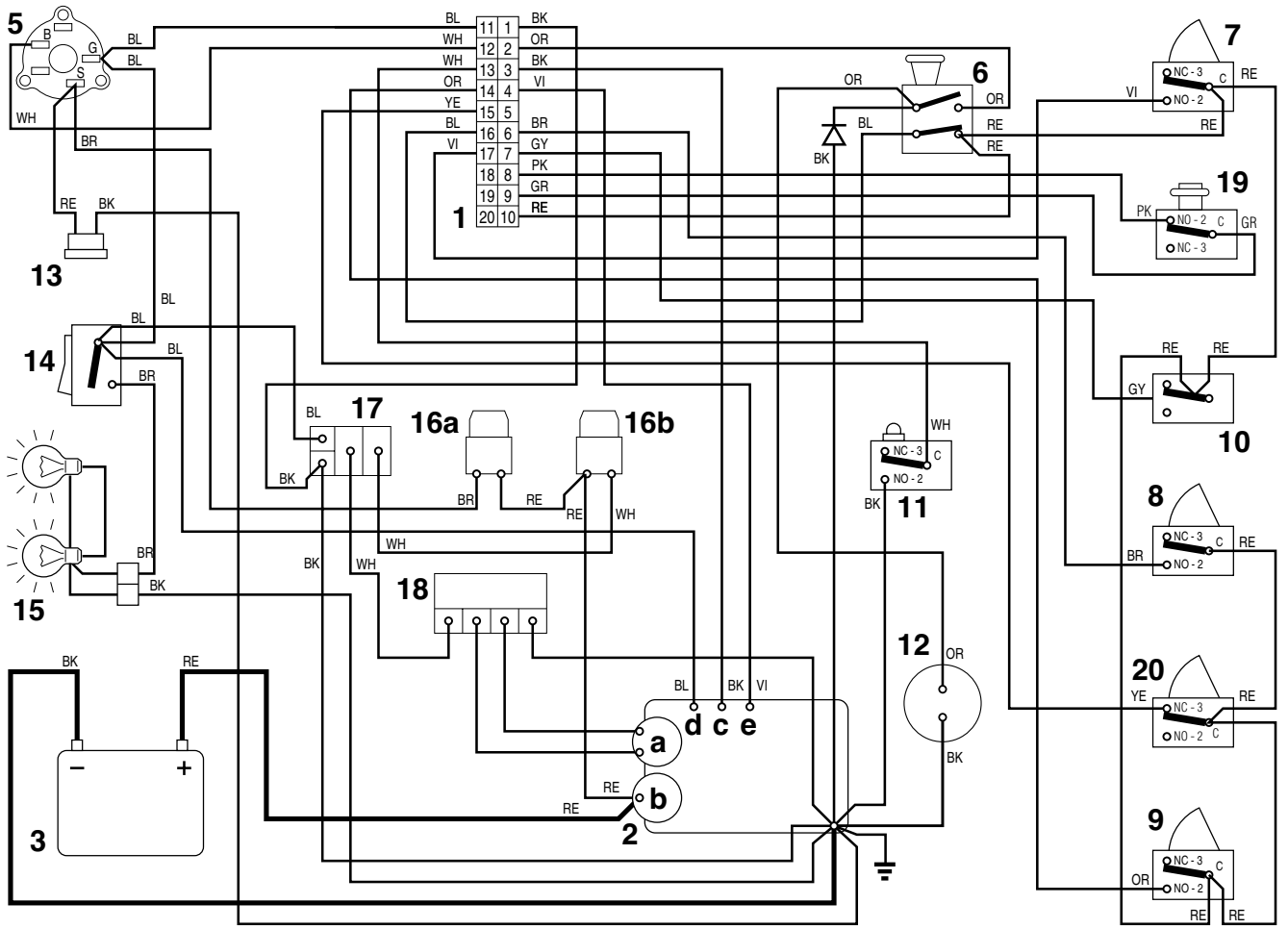
Related topics



Map of functional units



Engines Honda



1 Electronic card
2 Engine
2a Generator
2b Starter motor
2c Engine stop
2d Carburattor
2e Starter relay
3 Battery
4 Starter relay
5 Key ignition switch
6 Blades switch
7 Brake microswitch
8 Grasscatcher microswitch
9 Seat microswitch
10 Neutral microswitch
11 Grasscatcher full microswitch
12 Clutch
13 Recharge connector
14 Headlight switch
15 Headlight
16a 10 A fuse
16b 25 A fuse
17 Recharge relay
18 Recharge regulator
19 Reverse consent button
20 Reverse gear microswitch

CABLE COLOURS

K Black
BL Blue
GR Green
BR Brown
GY Grey
OR Orange
PK Pink
RE Red
VI Violet
WH White
YE Yellow

General informations

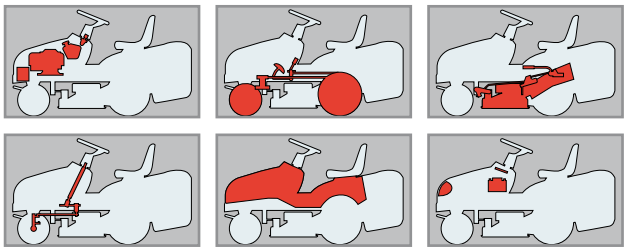
Related topics

[☛ 4.1] Adjusting the engagement and checking the blade brake

[☛ 4.2] Brake adjustment

[☛ 4.3] Drive belt adjustment

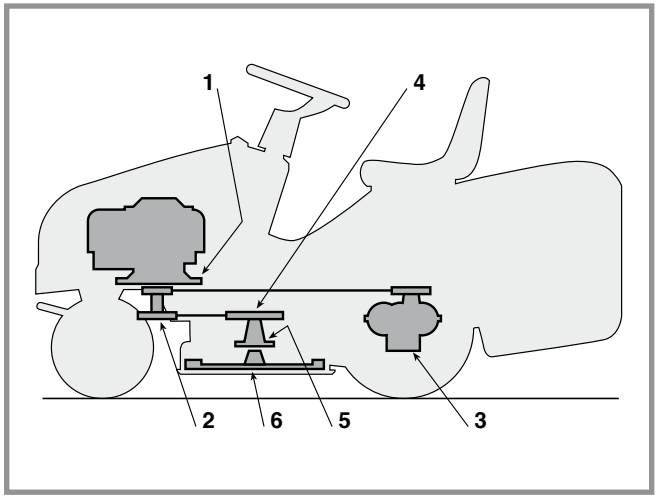
Map of functional units



A) Tightening torques

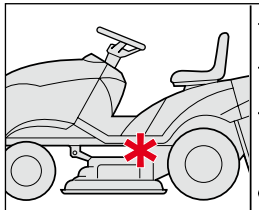
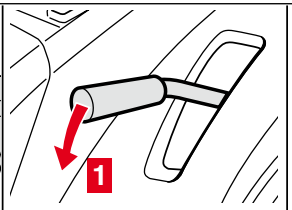
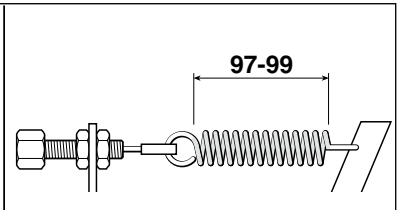
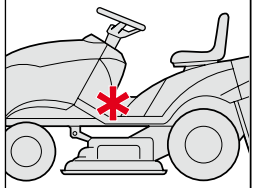
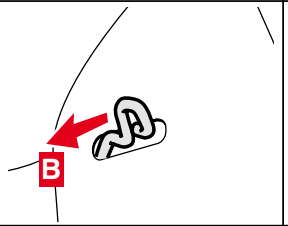
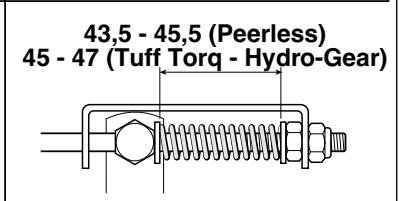
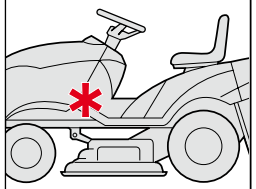
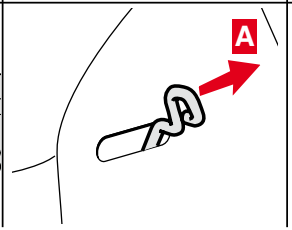
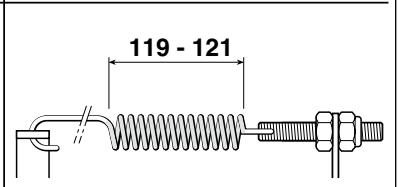
Below are the specified tightening torques for the fixing bolts on the main parts.

1	Screws for engine fastening	25 ÷ 30 Nm
2	Screw for engine pulley	45 ÷ 50 Nm
3	Screws for rear axle fastening	25 ÷ 30 Nm
4	Blade pulley screws	25 ÷ 30 Nm
5	Flanged support fixing nuts	25 ÷ 30 Nm
6	Screw for blade	45 ÷ 50 Nm



Every section in this manual gives values for all the components involved in each operation.

B) Adjustments

Operation	Position	Position of controls	Adjustment
a) Adjusting the engagement and checking the blade brake			
b) Brake adjustment			
c) Drive belt adjustment			

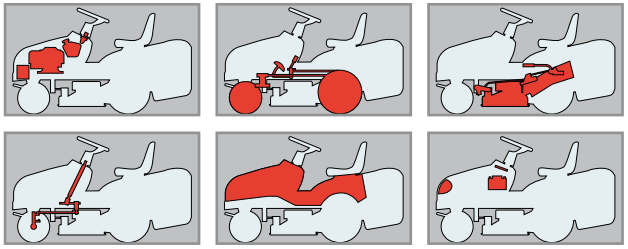
General informations:

Related topics

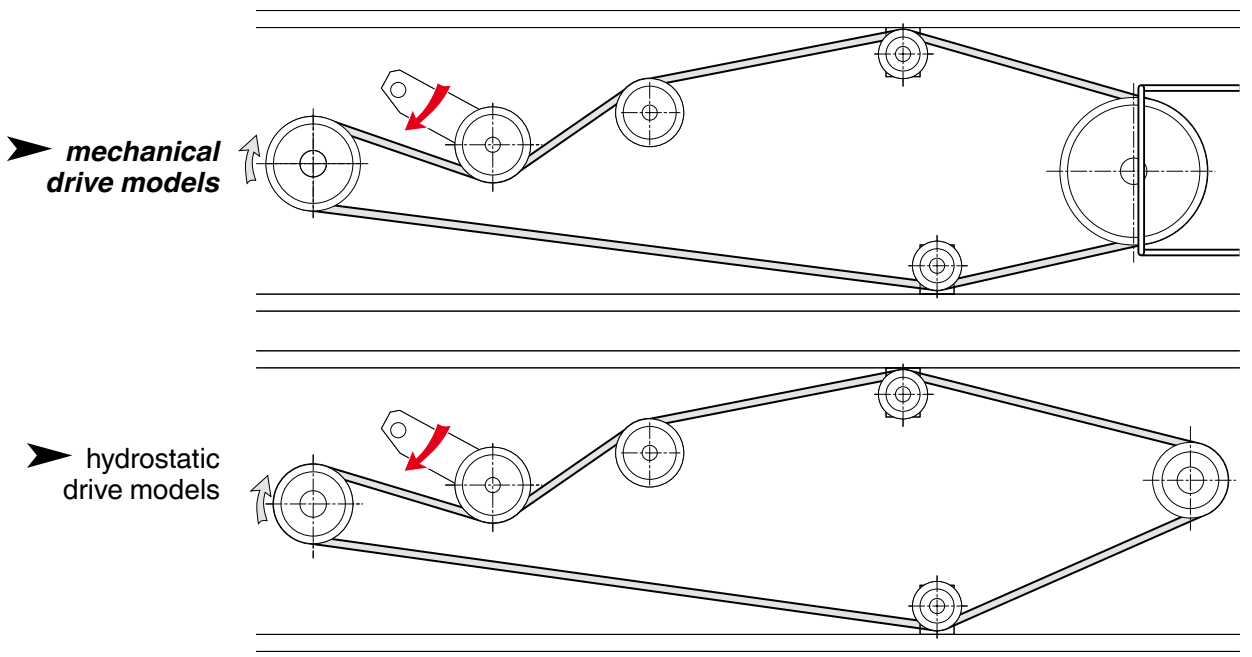
[☛ 6.4] Replacement of the drive belt

[☛ 6.6] Replacement of the blades control belt

Map of functional units



1



1 Drive belt development

2 Blades control belt development

2