Wiedenmann®

Translation of original Operating Instructions

Synthetic Turf Maintenance Machine Terra Clean 160

245.001

From equipment I.D. No. :

Status : March 2015

245 99 01

EC DECLARATION OF CONFORMITY

We

Wiedenmann GmbH
Am Bahnhof
89192 Rammingen

declare under our sole responsibility that the product

Synthetic turf maintenance machine
Terra Clean 160

to which this declaration refers, corresponds with the relevant basic safety and health requirements of the machinery directive 2006/42/EC.

Rammingen, the 20.08.2013	**Horst Wiedenmann**
(Place and date of issue)	**Managing Partner**
	(Name, function and signature of authorised person)

Rammingen, the 20.08.2013	**Peter Rischar**
(Place and date of issue)	**Technical office manager Authorised representative for tech. documentation**
	(Name, function and signature of authorised person)

NOTE: The declaration of conformity is no longer valid if changes are made to the machine that have not been agreed with the manufacturer.

Declaration of conformity

We

Wiedenmann GmbH
Am Bahnhof
89192 Rammingen

hereby declare that the product

Synthetic turf maintenance machine
Terra Clean 160

referred to by this declaration complies with the requirements of Machinery Directive 2006/42/EC.

Rammingen, the 20.08.2013	**Karl Wiedenmann**
(Place and date of issue)	**Sales Manager**
	(Name, function and signature of authorised person)

Rammingen, the 20.08.2013	**Harald Reuen**
(Place and date of issue)	**Operations Manager**
	(Name, function and signature of authorised person)

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Preface

READ THESE OPERATING INSTRUCTIONS CAREFULLY to familiarise yourself with the correct way to operate and service your machine, and to prevent personal injury or damage to the machine. These operating instructions can also be obtained in other languages (your dealer can order these for you).

THESE OPERATING INSTRUCTIONS ARE a permanent part of your machine and should be handed over to the new owner if the machine is sold.

MEASUREMENTS in these operating instructions are given in the metric system. Only use suitable parts and screws. Different wrenches are required for metric and inch screws.

THE DESIGNATIONS "RIGHT" AND "LEFT" are based on the forward direction of travel of the mounted equipment or attached machine.

ENTER THE PRODUCT IDENTIFICATION NUMBERS in the appropriate “Technical data” or “Product - Identification Number” sections. Please ensure that all figures are accurately entered. These numbers can be of invaluable assistance for tracing the machine should it be stolen. Your dealer also needs these numbers when you order spare parts. We recommend that you additionally file these identification numbers in a secure place away from the machine.

BEFORE INITIAL OPERATION, please take into consideration and clarify the following:
"The maintenance requirement for synthetic turf fields differs depending on the layout and the used synthetic turf. We recommend that you consult with your groundsman or synthetic turf manufacturer to clarify the suitability of maintenance machines before usage."

BEFORE DELIVERY OF THIS MACHINE, your dealer performed a pre-delivery inspection to ensure optimal performance.

THIS SYNTHETIC TURF MAINTENANCE MACHINE IS DESIGNED SOLELY for use in synthetic turf maintenance for cleaning and collecting surface contamination such as leaves, broken off fibres, paper, rubbish and small branches on sand or granulate filled synthetic fields ("INTENDED USE").

Usage for any other purpose beyond this is considered as contrary to the intended use. The manufacturer accepts no liability for damage or injury resulting from this improper use. These risks are borne solely by the user. Compliance with and strict adherence to the operating, maintenance and repair conditions as specified by the manufacturer also form essential elements of the intended usage.

FORESEEABLE INCORRECT USE/MISUSE. It is not permitted to use the attached or trailed device to transport persons or things.

THIS MACHINE MUST ONLY BE operated, maintained and repaired by persons familiar with all its particular characteristics and acquainted with the relevant safety regulations. The relevant accident prevention regulations, all other generally recognised safety-related, occupational medicine and road traffic regulations must be adhered to. Any modifications carried out to this machine without the express approval of the manufacturer excludes the manufacturer of all liability for any resulting damage.

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1.0. Safety Measures

RECOGNISE WARNING SYMBOLS

This symbol draws your attention to the safety instructions attached to the machine or contained in these operating instructions. It means that there is a risk of injury.

Follow all recommended safety instructions as well as the accident prevention regulations.

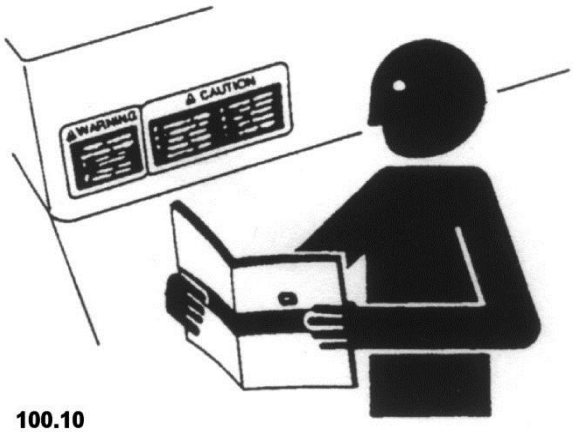
FOLLOW THE SAFETY INSTRUCTIONS

Ensure that you carefully read all safety instructions contained in these operating instructions as well as all those attached to the machine. The warning signs must be kept in good condition, i.e. readable. Replace missing or damaged warning signs. Ensure that new equipment and spare parts are provided with the appropriate safety signs. Replacement warning signs are available from your dealer.

Familiarise yourself with the operation of the machine and its control devices before working with the machine. Never allow a person without the appropriate knowledge to operate the machine.

Keep your machine in good working order. Unauthorised modifications to the machine can impair the function, operational reliability and service life of the machine.

If you do not understand any part of these operating instructions and need assistance, please contact your dealer.

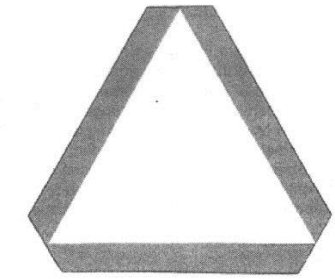


100.10

1.0. Safety Measures

OBSERVE THE ROAD TRAFFIC REGULATIONS

Always observe local road traffic regulations when using public roads.



100.11

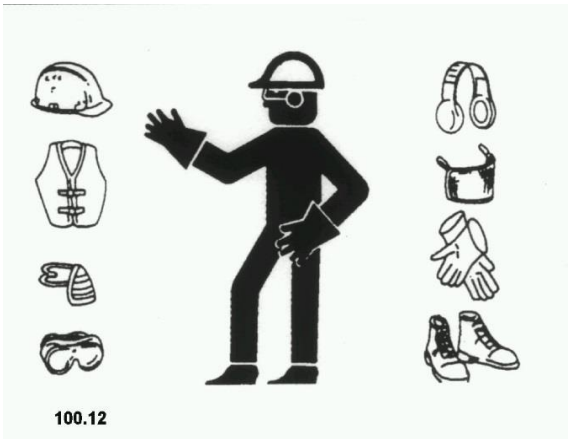
WEAR PROTECTIVE CLOTHING

Wear close-fitting clothing and the appropriate safety equipment for the work at hand.

Prolonged exposure to loud noise can result in impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs.

A safe operation of the machine requires the full attention of the operator.
Do not wear radio or music headphones while operating the machine.



100.12

SAFETY AND PROTECTIVE DEVICES

Safety and protective devices must be kept in proper working order and be fitted to the relevant location.

Always disengage the drive sections and shut off the engine before removing any of the safety and protective devices.

Keep hands, feet and clothing away from moving parts.

1.0. Safety Measures

STAY CLEAR OF ROTATING DRIVE SHAFTS

Carelessness in the area of the rotating drive shafts can result in serious injury or even death.

Always ensure that all shaft protection devices are fitted i.a.w. regulations and that the universal-joint shaft sheath tubing can turn freely. Wear close-fitting clothing. Shut off the engine and wait until all moving parts are at a standstill before adjusting or cleaning as well as connecting or disconnecting the PTO–driven machines.

EXERCISE CAUTION IN THE CASE OF LINE LEAKAGE

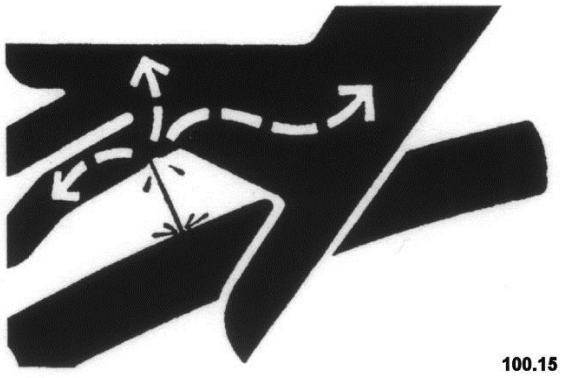
Leaking high-pressure fluids can penetrate the skin and cause serious injury.

The system must therefore be depressurised before lines are disconnected. Ensure that all line connections are leak-proof before the pressure builds up again in the system.

It is difficult to see hydraulic oil leaking from a small opening. For this reason, use a piece of cardboard when searching for leaks. Protect the hands and body from high-pressure fluids.

If any fluid penetrates the skin, this must be immediately removed by a doctor who has experience with this kind of injury. Failure to seek medical attention can lead to serious infection.

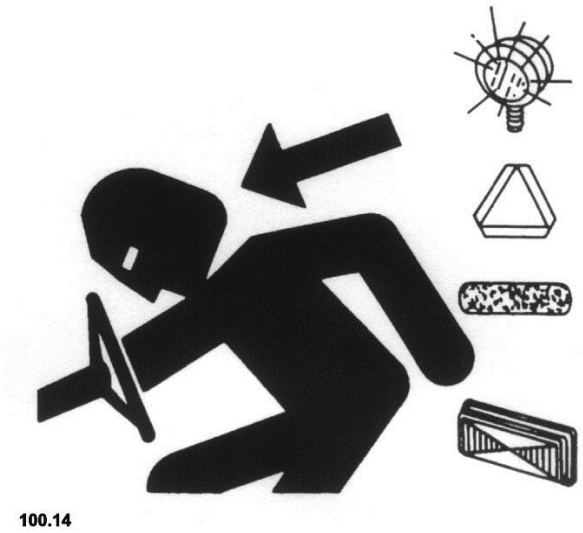
Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.



1.0. Safety Measures

USE SAFETY LIGHTS AND EQUIPMENT

Avoid collisions with other road users. Slow moving tractors with mounted or towed equipment, and self-propelled machines on public roads pose a specific danger. Frequently check for traffic coming behind you, especially when making turns. Ensure safe traffic conditions by using hand signals or indicators. Use headlights, hazard warning lights, indicators and other safety equipment i.a.w. the respective legal provisions. Keep safety equipment in good working order. Replace missing or damaged parts. A set of safety lights is available from your dealer.



100.14

AVOID HEAT DEVELOPMENT NEAR PRESSURISED FLUID LINES

A highly flammable mist can form due to heat development near pressurised fluid lines. This can result in severe burns. Do not cause heat development by welding, soldering or using a welding torch near pressurised fluid lines or other flammable materials. Pressurised lines can be accidentally cut through when heat goes beyond the immediate flame area.

100.16

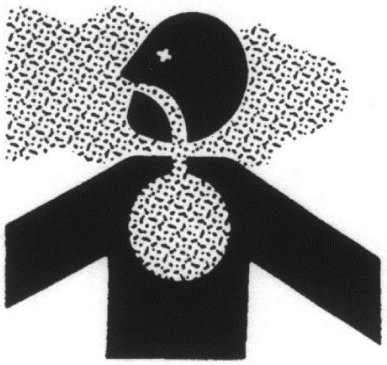
REMOVE PAINT BEFORE WELDING OR HEATING PARTS

Welding should only be carried out by persons with a relevant qualifying certificate i.a.w. EN287.

Avoid the formation of toxic fumes and dust.

Hazardous fumes can be generated when paint is heated due to welding, soldering, or using a welding torch.

All work is to be performed outdoors or in a well-ventilated area. Dispose of paints and solvents i.a.w. the appropriate regulations.



100.17

Remove paint before welding or heating parts:

- The dust generated due to the sandblasting or grinding of parts must not be inhaled. For this reason, wear suitable breathing protection.
- Where a solvent or paint stripper is used, it must be rinsed off using water and soap before carrying out any welding. Then wait at least 15 minutes before welding or heating for the fumes to disperse.

1.0. Safety Measures

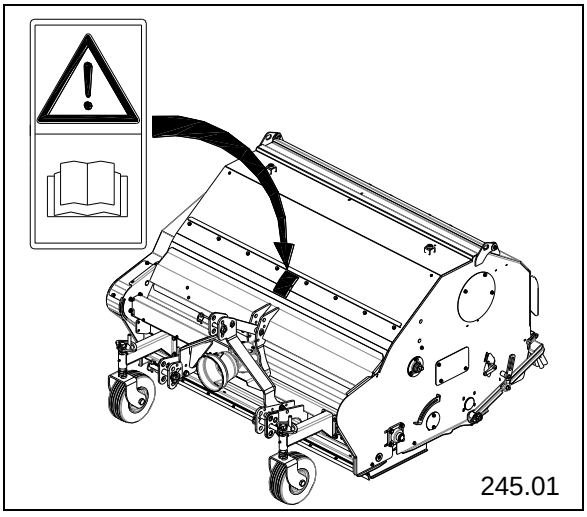
1.1. Adhesive Safety Signs

Warning symbols

Warning symbols indicating danger are attached at some important areas on the machine. The hazard is identified via a warning triangle. A second symbol informs you how the injury can be prevented by acting appropriately. These warning signs, their placement on the machine and a brief explanation are given below.

Operating Instructions

These Operating Instructions contain all important information necessary for the safe operation of the machine. Carefully observe all safety instructions to avoid accidents.

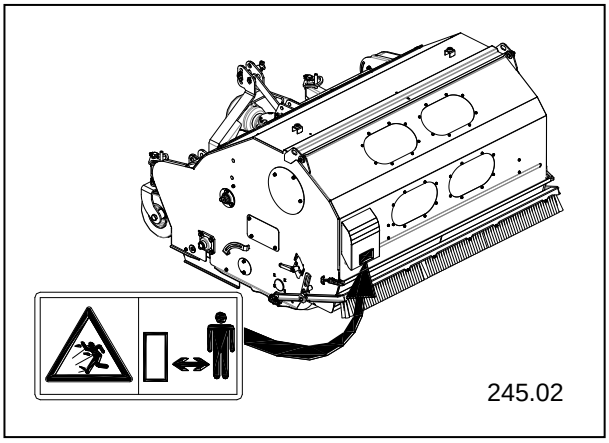


1.0. Safety Measures

1.1. Adhesive Safety Signs

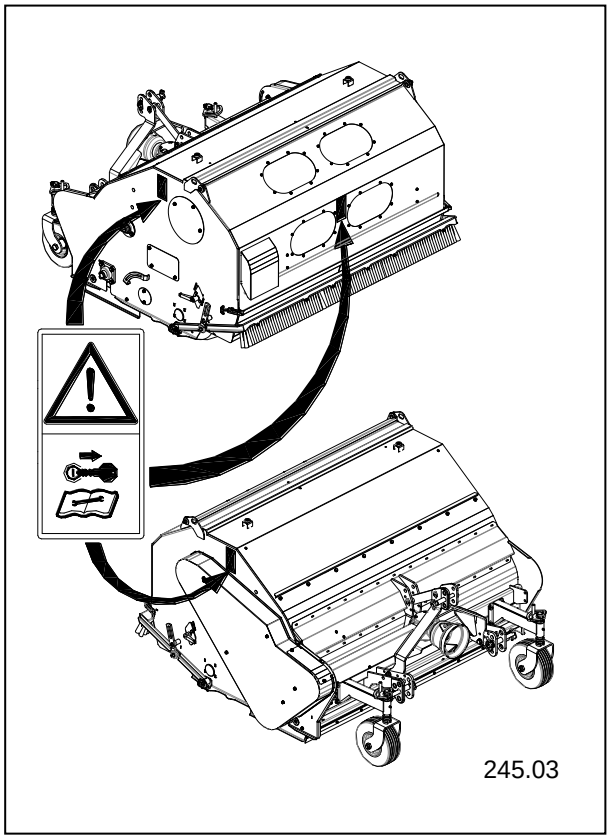
Blow-out cover

When operating ensure that sufficient distance is left as there is a risk of injury from thrown or flying objects.



Maintenance

Shut off the engine and remove the key before performing maintenance or repair work.



1.0. Safety Measures

1.2.1. Safety Equipment

GENERAL SAFETY SIGN REQUIREMENTS

A safety sign with the following safety practices or similar information shall be provided on the machine. The label should preferably be visible from the operator's position.

a) Read the operating instructions.

b) Do not operate the machine without safeguards, shields, and where the safety devices are not in place and working.

c) Do not operate the machine when children and others are nearby.

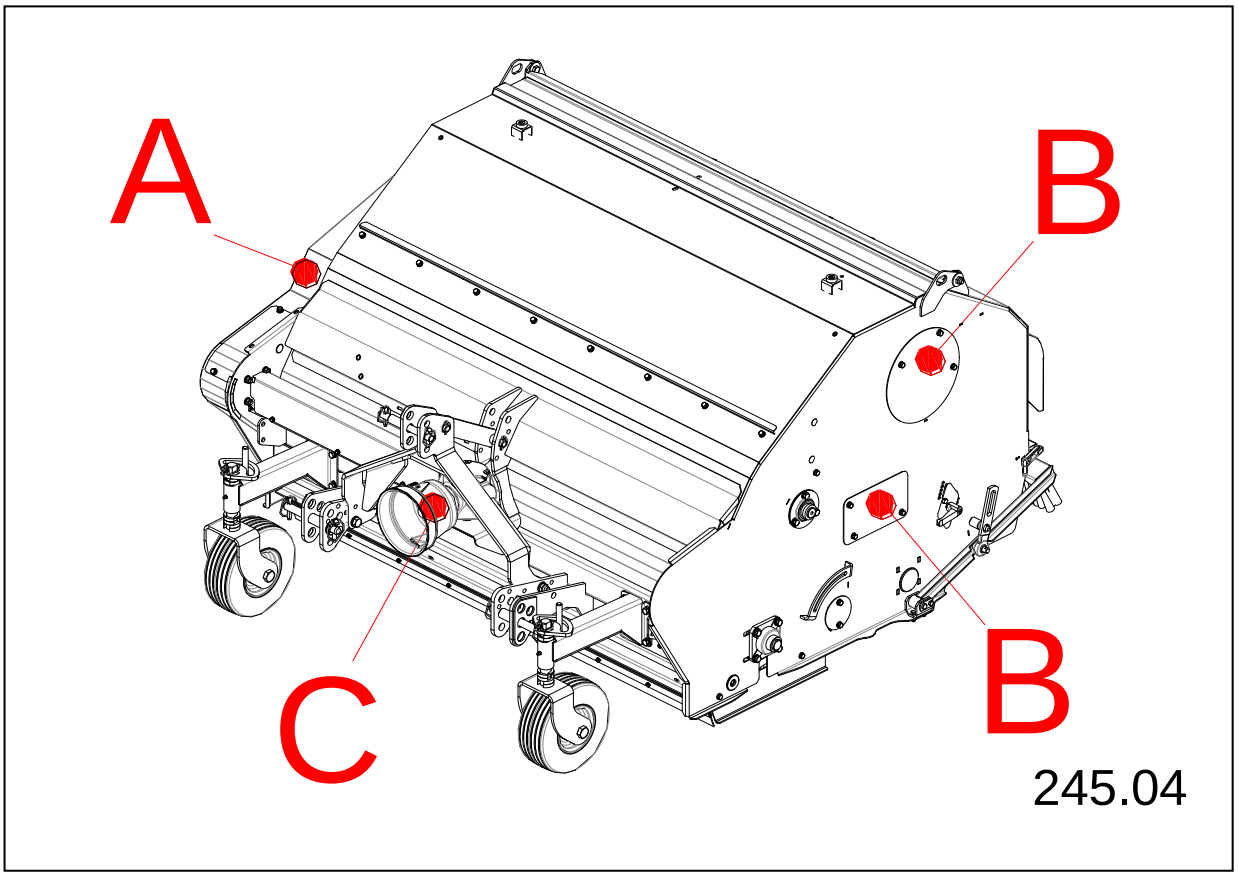
d) Do not allow untrained personnel to operate the machine.

ATTENTION DANGER !

Never use the TERRA CLEAN 160 without safety equipment. Otherwise, you expose yourself and others to extreme danger.

⇒ Moving parts can result in serious injuries.

Where to find safety equipment on your machine



A = Drive protection, only removable with tools.

B = Fan duct, only removable with tools.

C = Protective pot, only removable with tools.

1.2.2. Safety Equipment

GENERAL SAFETY SIGN REQUIREMENTS

A safety sign with the following safety practices or similar information shall be provided on the machine. The label should preferably be visible from the operator's position.

a) Read the operating instructions.

b) Do not operate the machine without safeguards, shields, and where the safety devices are not in place and working.

c) Do not operate the machine when children and others are nearby.

d) Do not allow untrained personnel to operate the machine.

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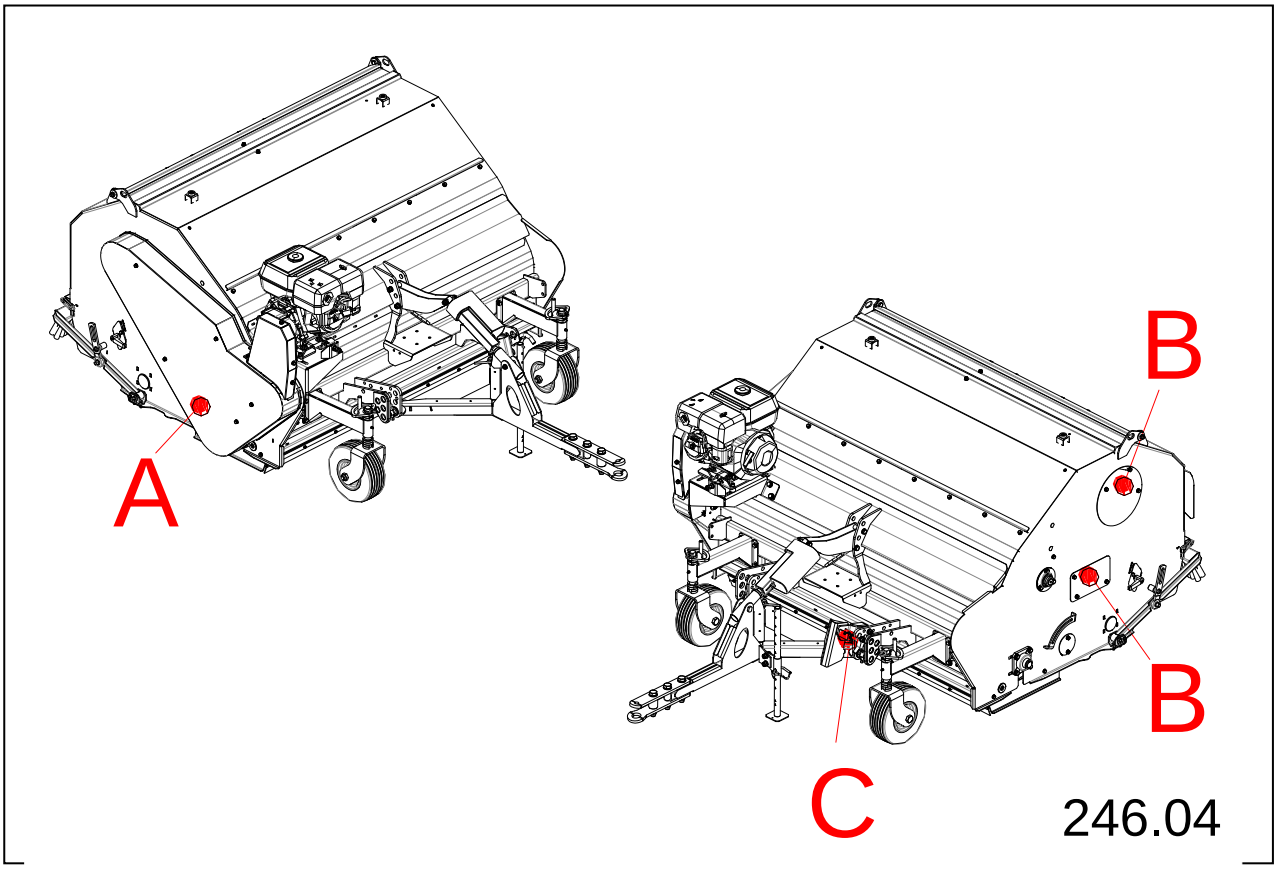


A = Drive protection, only removable with tools.

B = Fan duct, only removable with tools.

C = Security device for keeping the drawbar in place during transportation

1.2.3. Safety Equipment

GENERAL SAFETY SIGN REQUIREMENTS

A safety sign with the following safety practices or similar information shall be provided on the machine. The label should preferably be visible from the operator's position.

a) Read the operating instructions.

b) Do not operate the machine without safeguards, shields, and where the safety devices are not in place and working.

c) Do not operate the machine when children and others are nearby.

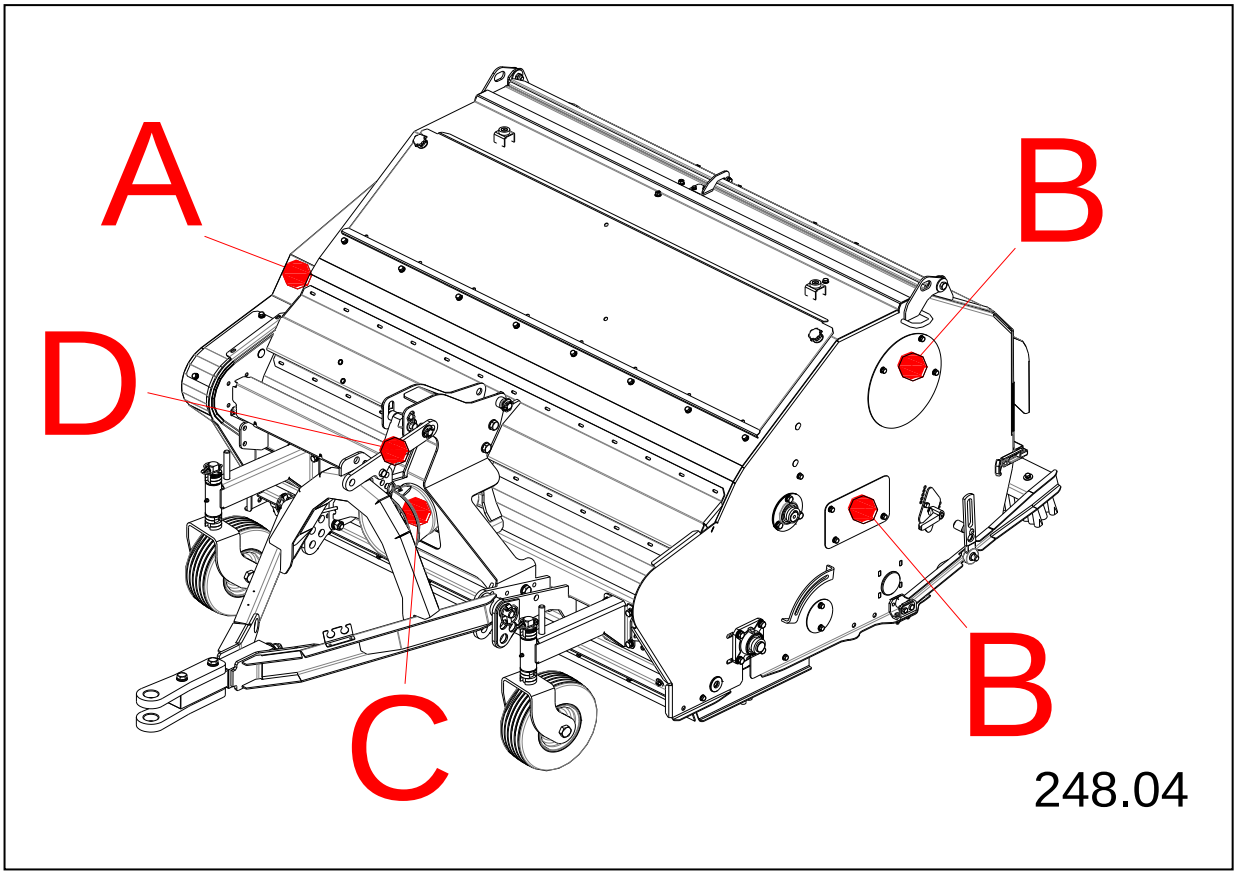
d) Do not allow untrained personnel to operate the machine.

ATTENTION DANGER !

Never use the TERRA CLEAN 160 without safety equipment. Otherwise, you expose yourself and others to extreme danger.

⇒ Moving parts can result in serious injuries.

Where to find safety equipment on your machine



A = Drive protection, only removable with tools.

B = Fan duct, only removable with tools.

C = Protective pot, only removable with tools.

D = Securing – prevents the sweeping head from lowering unintentionally during transportation.

1.0. Safety Measures

1.3. Safety instructions 

- In addition to the information provided in these Operating Instructions, please also observe generally applicable safety and accident-prevention standards !
- Familiarise yourself with all equipment and operating elements and their functions before starting work. Ensure that all protective equipment has been properly installed. It is too late to do this when you have started work !
- In the working area, the user is responsible for the safety of other persons !
- Before moving off, ensure that the immediate area of the machine is clear e.g. no children nearby. Ensure that your visibility is not impaired !
- Keep all persons clear of the danger zone of the machine !
- For all operations the engine must be switched off and the ignition key must be removed.
- Before carrying out any work, the engine of the machine and the tractor engine must be switched off.
- For this work, please use your personal protective equipment (PSA) such as: gloves, goggles, ear protectors.
- Special care should be taken when working and turning on a slope.
  - DANGER OF TOPPLING !
- **CAUTION !**
  The equipment version with a drawbar is **NOT** approved for travel on public roads!

2.0. Assembly

2.1. General Information

CAUTION !

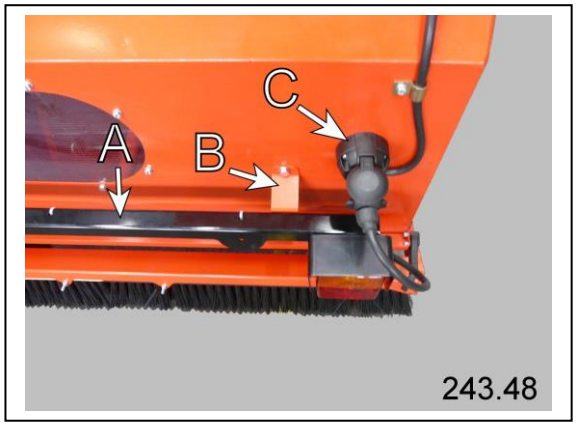
Switch off the engine before performing any work. The ignition key must be removed.

For this work, please use your personal protective equipment (PSA) such as: gloves, goggles, ear protectors.

2.2. Installing the lighting system

Lighting system **(A)** is screwed with brackets **(B)** to the existing holes of the hopper gate.

Secure the electrical socket **(C)** on the existing hole pattern.



Route the electrical cable with the 7-pin plug to the fore.

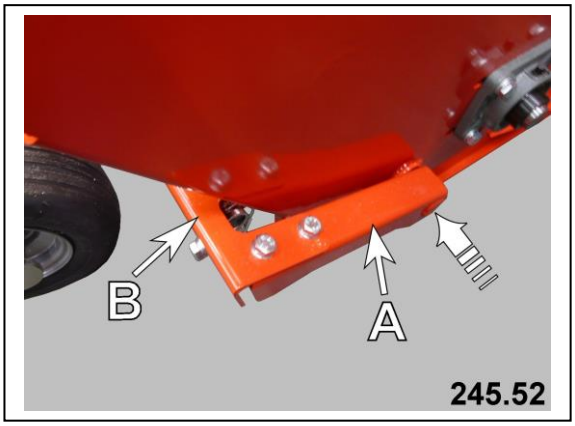
Secure with the supplied fastening clamps or cable ties.

NOTE:
Lay the electrical cable in such a way that it does not rub or become crushed.

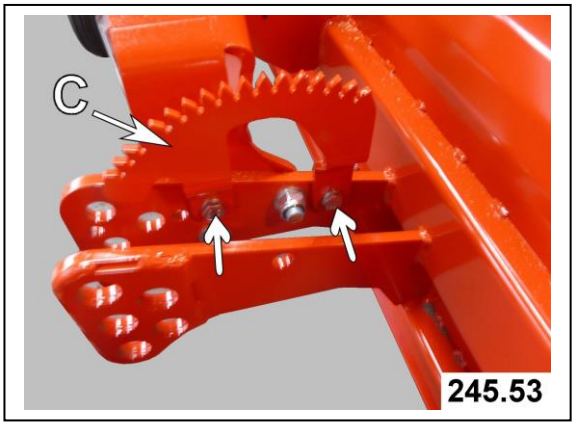
2.3. Attaching the sweeping bar

Insert the left **(A)** and right rotary brackets into the holes and secure with a U-washer and expansion pin.

Secure the spring tine carrier **(B)** to the left **(A)** and right rotary brackets with three screws each.

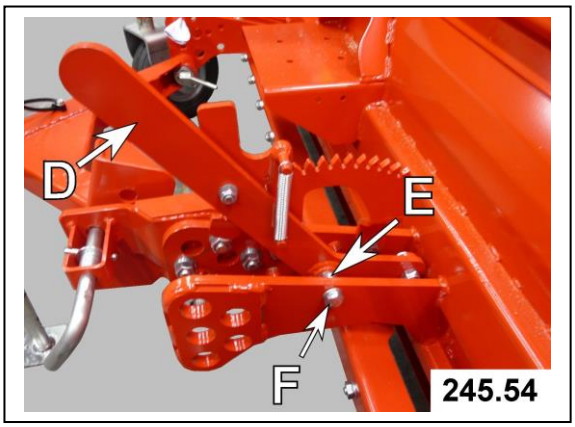


Secure the latch **(C)** to inner left side of the hole pattern on the mounting bracket.



Insert the lever shaft **(D)** into the appropriate hole in the mounting bracket on the outer left-hand side with the bolts **(E)** AND INSERT INTO the latch toothing **(C)**.

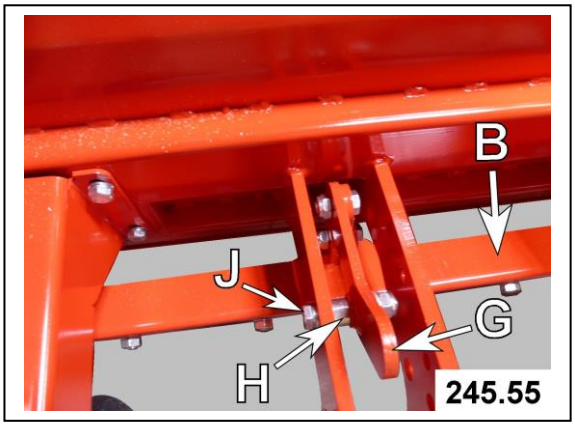
Secure in place from the outside edge using the screw **(F)**.



Insert the short bracket **(G)** into the appropriate hole in the mounting bracket on the outer right-hand side with the bolts **(H)**.

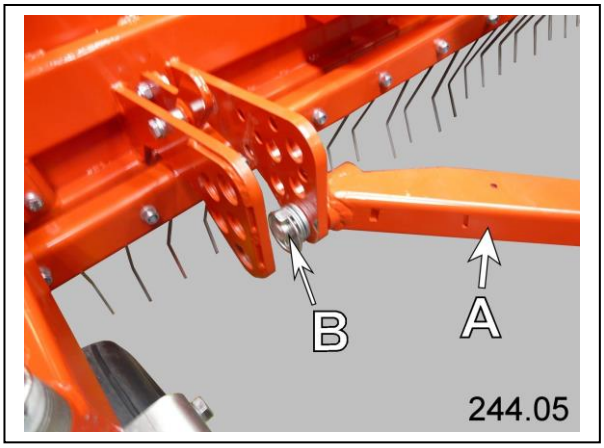
Secure in place from the outside using the screw **(J)**.

Secure the spring tine carrier **(B)** to the lever shaft **(D)** and the short bracket **(G)**.



2.4. Attaching the drawbar on the version with engine design

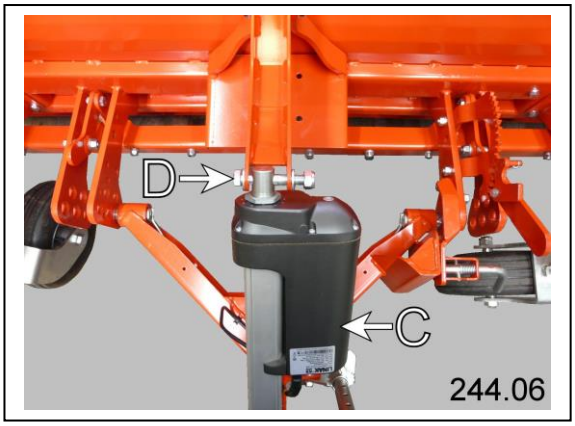
Insert and secure drawbar **(A)** with bolt **(B)** on the frame.



Insert electro spindle **(C)** with screw **(D)** and secure with the nut.

Lay the electric cable to the switch box, taking care that it is neither rubbed nor crushed.

Electric plug (3-pin) in the appropriate 3-pin socket (for separate accessories kit, see Chapter 2.5.).



2.5. Electric connection to battery

Only appropriately qualified professionals may carry out the connection work.

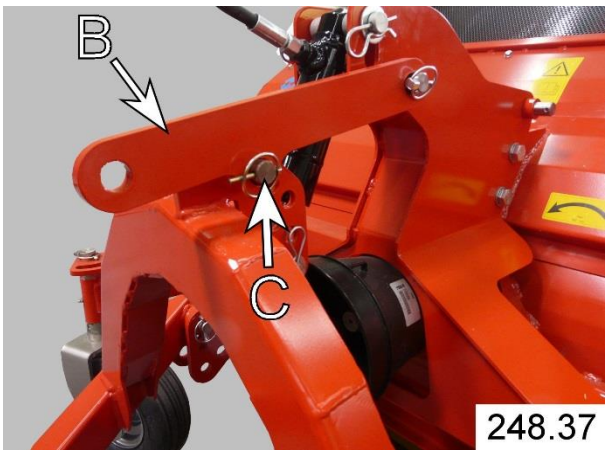
Electrical connection is necessary for supplying the electrospindle with electric power.

See the accompanying instructions for the installation description.

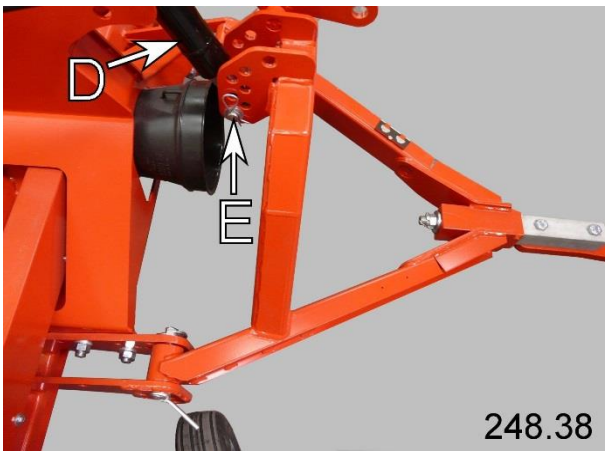
2.6. Attaching the drawbar on the version with PTO stub shaft drive

Peg the drawbar (A) at the uppermost hole of the front row and secure with a linch pin.

Lift the drawbar (A) and peg the securing fishplate (B) using the centre hole to the drawbar pin (c) and secure with split and secure with linch pin.



Peg the hydraulic cylinder (D) in the lowest hole (E) and secure with a spring cotter.



3.0. Transport

3.1. General Information

CAUTION DANGER :

- TERRA CLEAN 160 is delivered secured to a transport frame.
- Only use fork lifts, cranes or hoisting gear with sufficient lifting capacity.
- Only use fork lifts, cranes or hoisting gear with sufficient lifting capacity.

Improper transport and mounting of TERRA CLEAN 160 can result in:

- injury to persons,
- damage to property.

Pay special attention to the direction of approach when lifting TERRA CLEAN 160 with the transport frame.

We do not accept any liability for damage resulting from improper handling.

CAUTION DANGER :

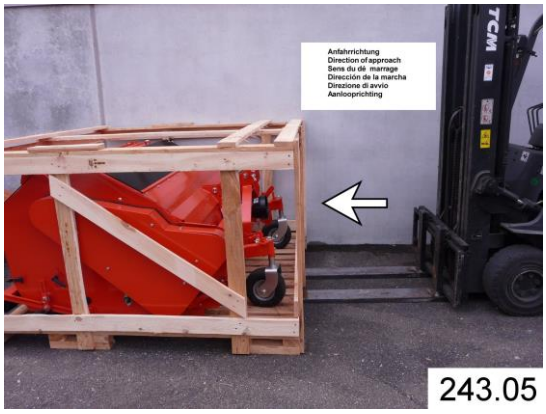
Caution must be excercised when cutting through the securing straps.
Risk of injury due to ends "springing open".

3.2. Transporting TERRA CLEAN 160

3.2.1. Transport Using a Forklift

If the TERRA CLEAN 160 is still secured to the transport frame:

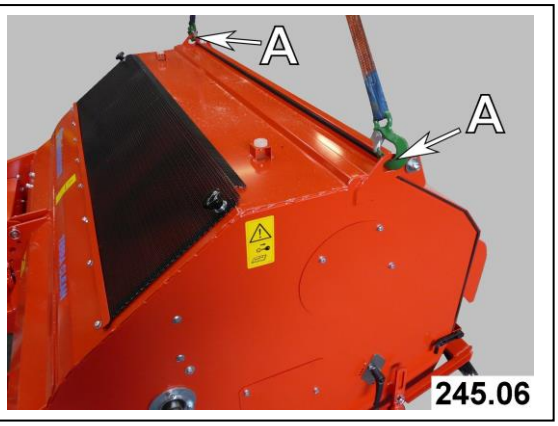
- Insert the forks under the transport frame (pay attention to the direction of approach),
- carefully lift the transport frame,
- unload the TERRA CLEAN 160 from the transport device when it is balanced.
- Remove top part and side parts of the transport frame,
- cut through the securing straps,
- and lift TERRA CLEAN 160 off the transport frame.



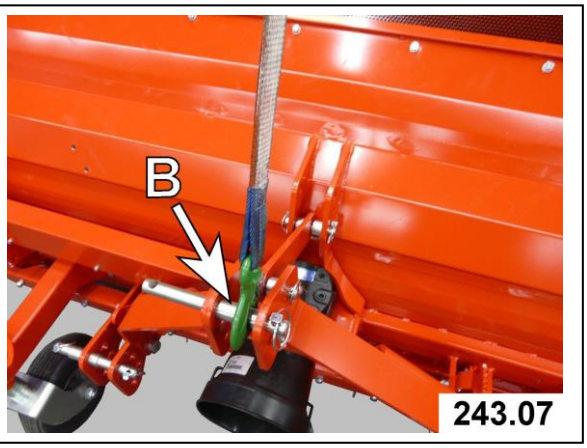
3.2.2. **Crane hitching points on the PTO shaft – three-point linkage version**

The following 3 points on the attachment device are provided to hitch it to a crane.

Point A: 2 on the container straps



Point B: 1 Unit on upper guide bar pin

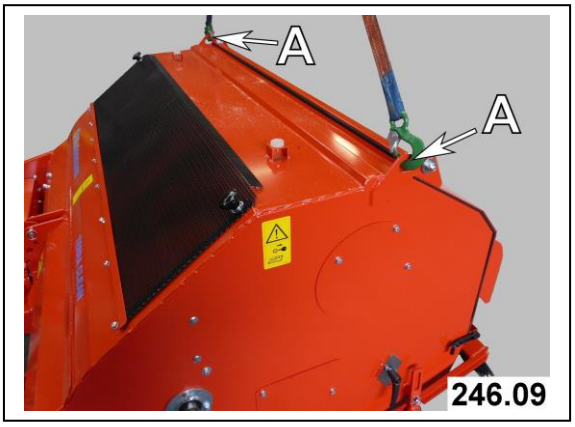


3.2. Transporting TERRA CLEAN 160

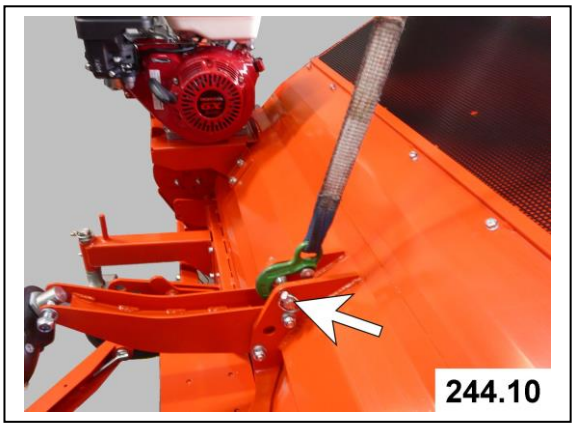
3.2.3. Crane hitching points on the engine version

The following three points on the machine are provided to hitch it to a crane.

Point A: 2 on the container straps



Point B: 1 unit on the bolt

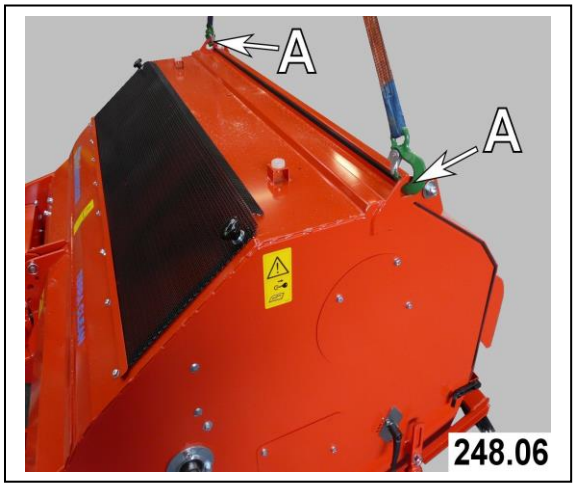


3.2. Transporting TERRA CLEAN 160

3.2.4. Crane hitching points on the PTO shaft – trailer version

The following three points on the machine are provided to hitch it to a crane.

Point A: 2 on the container straps



Point B: 1 piece on the ring bolt

3.2. Transporting TERRA CLEAN 160

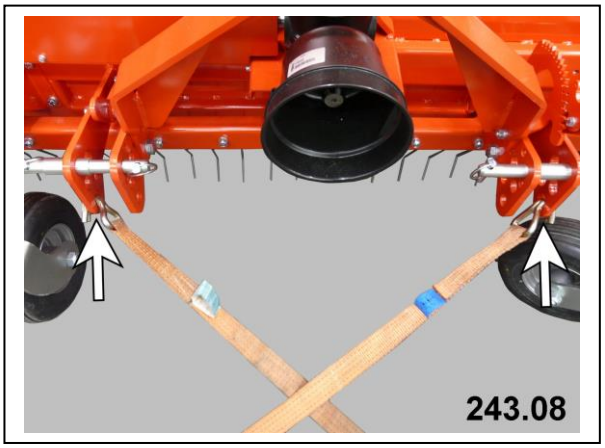
3.2.5. Mounting points on the PTO shaft – three-point linkage version for transporting on a trailer

CAUTION DANGER :

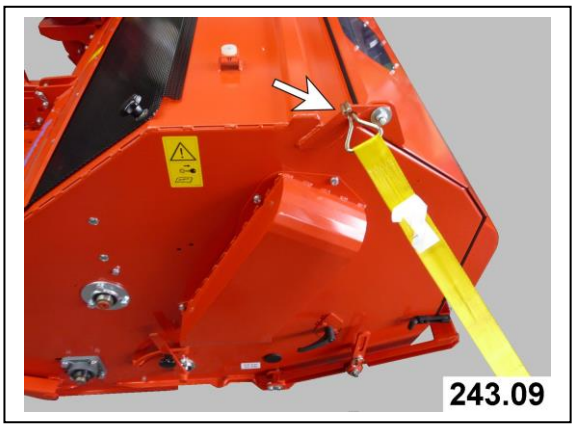
Please note the removal instructions in Chapter 5.2. - DANGER OF TOPPLING!

Tighten tie-down straps evenly, alternating diagonally across.

- **Hooking points for belts on the front**



- **Hooking points for belts on the rear**



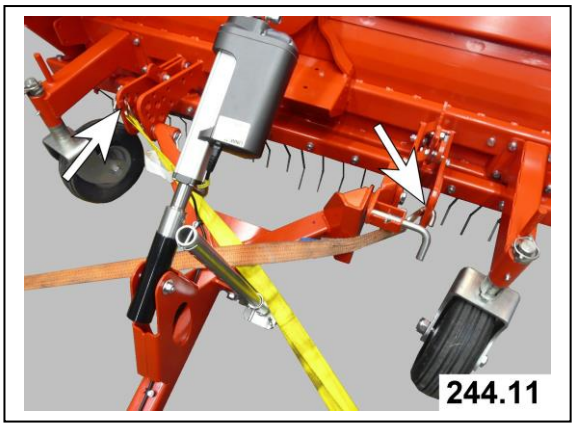
3.2. Transporting TERRA CLEAN 160

3.2.6. Mounting points on the engine version for transporting on a trailer

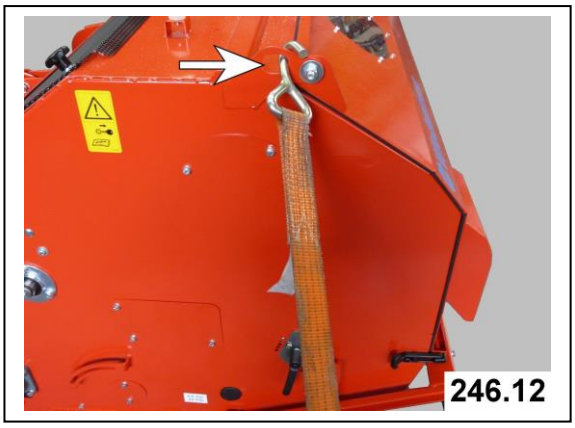
CAUTION DANGER :
Please note the removal instructions in Chapter 5.2.
- DANGER OF TOPPLING!

Tighten tie-down straps evenly, alternating diagonally across.

- **Hooking points for belts on the front**



- **Hooking points for belts on the rear**



3.2. Transporting TERRA CLEAN 160

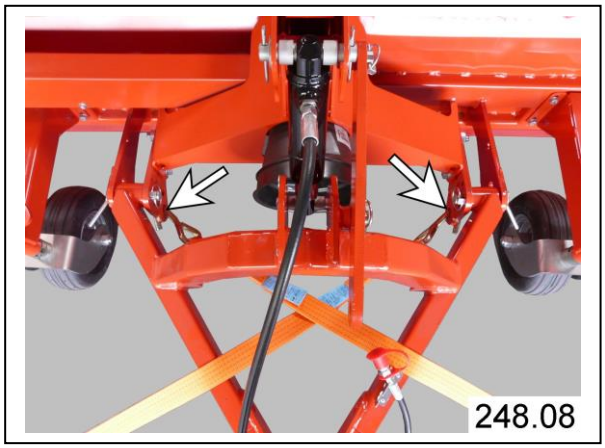
3.2.7. Mounting points on the PTO shaft – trailer version for transporting on a trailer

CAUTION DANGER :

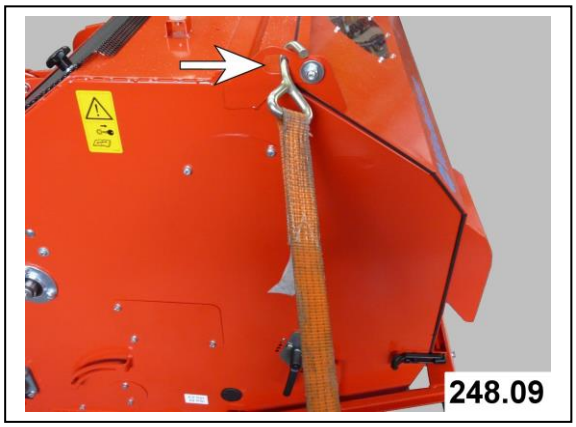
Please note the removal instructions in Chapter 5.2. - DANGER OF TOPPLING!

Tighten tie-down straps evenly, alternating diagonally across.

- **Hooking points for belts on the front**



- **Hooking points for belts on the rear**



4.0. Connecting to the Tractor

4.1. General Information

The following is required for attaching the machine:

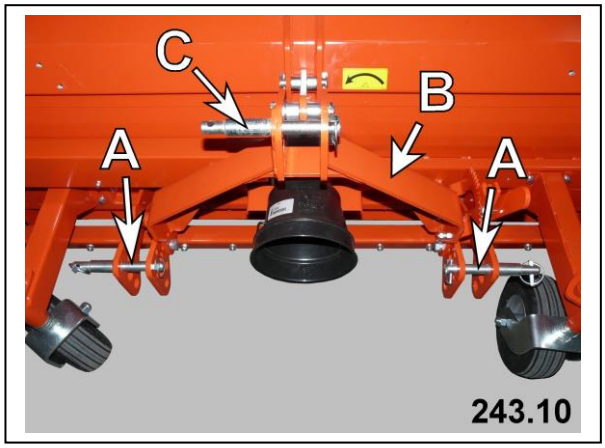
- **Tractors with at least 25KW (35HP)**
- **Hydraulic three-point lift Cat. 1**
- **Rear hydraulic system**
- **Gelenkwellenantrieb für 540 U/min**
- An electric connection within reach of the tractor driver's seat

  If your tractor is not equipped with such a socket, please consult your dealer or have one installed by a specialist technician.

  In case of failure of the locking device, have this connection checked and the locking device replaced by your dealer or a skilled specialist.
  Use locking device 16A.

4.2. PTO shafts – attaching the three-point linkage version to the tractor

1. Insert lower guide bar and secure on three-point frame (B) with bolts (A).
2. Insert upper guide bar to three-point frame (B) and secure using pin (C).
3. Adjust upper guide bar.
4. Firmly tighten turnbuckles of the stabilising chains.
5. Adjust universal-joint shaft (See Chapter 4.3.) and connect.
6. Gelenkwelle anpassen (siehe Kapitel 4.3.) und anschließen.



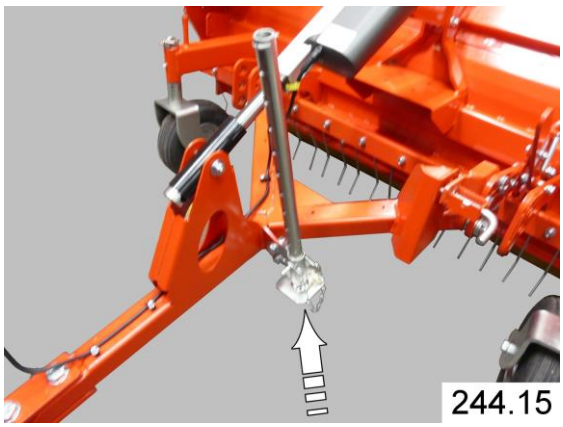
4.0. Connecting to the Tractor

4.3.1. Attaching the engine version to tractors with a swinging drawbar

The two draw shackles used for hitching come mounted to the adjustable drawbar on delivery.

1. Insert machine to adjustable drawbar and secure.
2. Connect switchbox to the driver's seat with cable and attach to a clean surface with suction cup.
3. The electric connection is via the tractor socket.
4. When travelling to and from the work site, lift the sweeping head so that the transport lock will engage (see Section 4.5.)
5. Insert the parking support in the top position and secure.

244.14



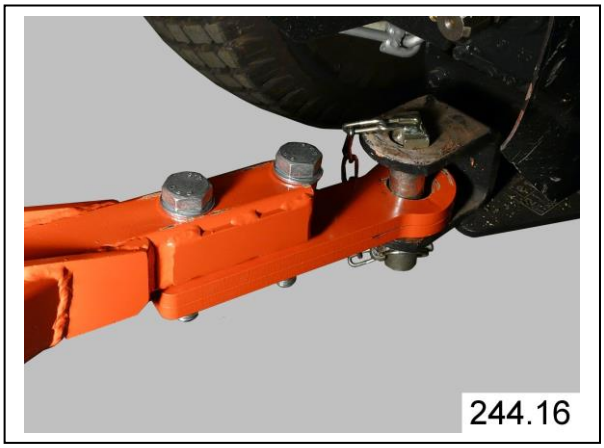
244.15

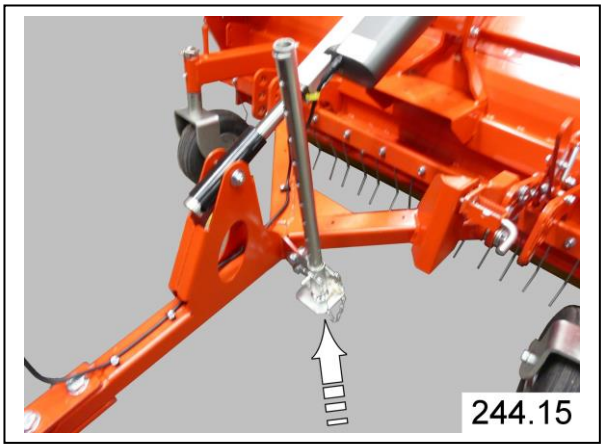
4.0. Connecting to the Tractor

4.3.2. Attaching the engine version to tractors with a trailer hook

The two draw shackles must be attached from below to the square tubing of the drawbar when hitching to the trailer hook.

1. Insert machine to trailer hook and secure.
2. Connect switchbox to the driver's seat with cable and attach with suction cup to a clean surface.
3. The electric connection is via the tractor socket.
4. When travelling to and from the work site, lift the sweeping head so that the transport lock will engage (see Section 4.5.).
5. Insert the parking support in the top position and secure.



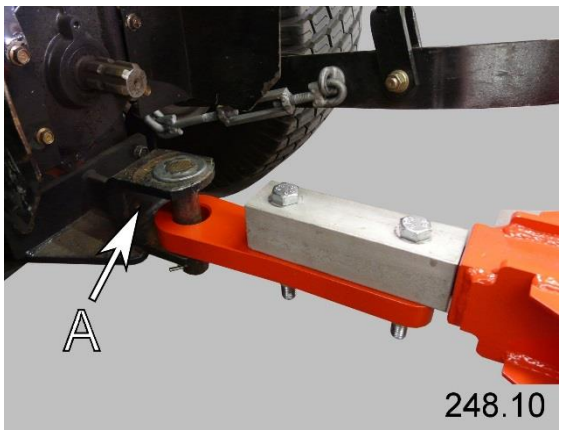


4.0. Connecting to the Tractor

4.3.3. Attaching the PTO shafts – trailer version

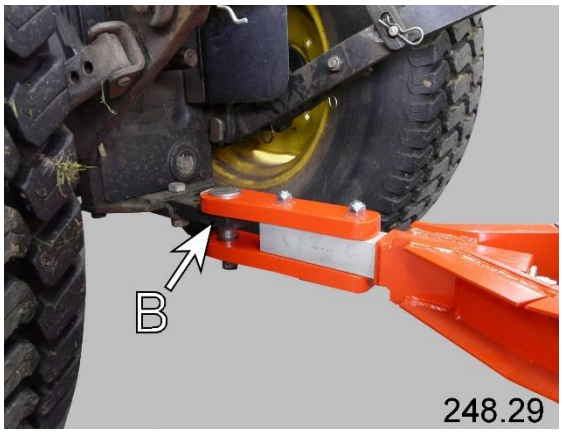
For tractors with a dual-fishplate coupling **(A)**, the upper fishplate on the drawbar must be removed.

Peg the drawbar fishplate to the tractor and secure it.



For tractors that only have one mounting plate **(B)**, the drawbar is attached with two fishplates.

Peg the drawbar fishplates to the tractor and secure them.

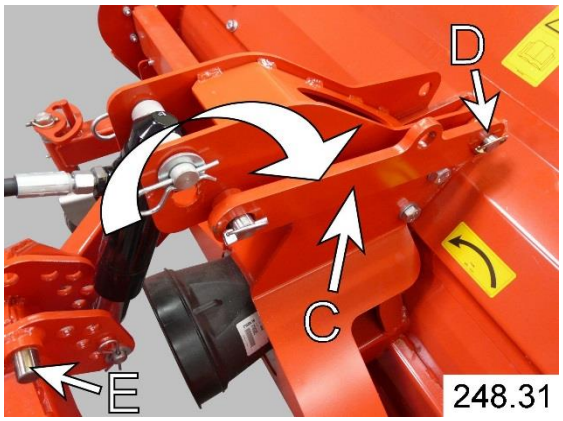


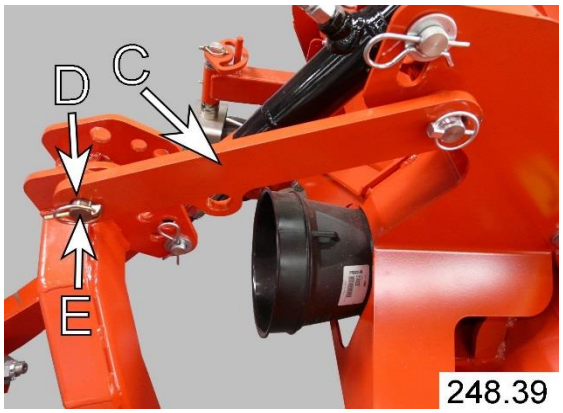
Release the securing fishplate **(C)** from the drawbar and turn it backwards.

Using the hydraulics, lift the sweeping head until the securing fishplate **(C)** can be pegged using hole **(D)** to the pin **(E)** of the drawbar.

The attatched machine is in the transport position.

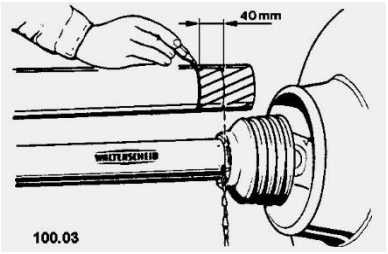
Adjust universal-joint shaft (see Chapter 4.4.) and connect.



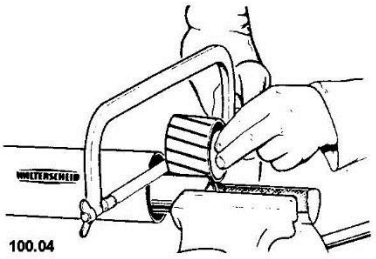


4.4. Adjusting the Universal-Joint Shaft

For adjusting the length hold the two shaft parts side by side at the shortest operating position and mark them out.

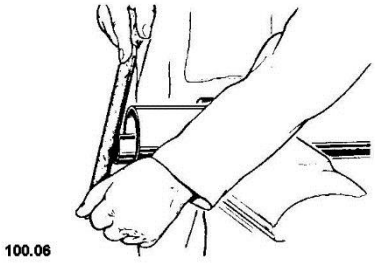


Cut off the inner and outer sliding profile by the same length as the sheath tube.



Cut off the inner and outer sheath tube evenly.

Smooth off division edges, remove chips carefully. Lubricate sliding profile.



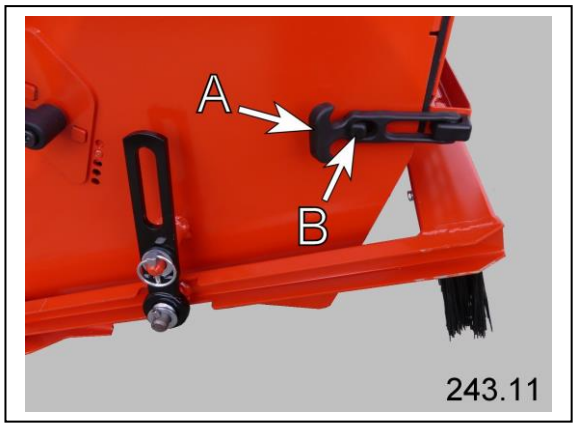
4.0. Connecting to the Tractor

4.5. Transportation the TERRA CLEAN 160

For driving on the open road, the attachment device must be equipped with a lighting system:

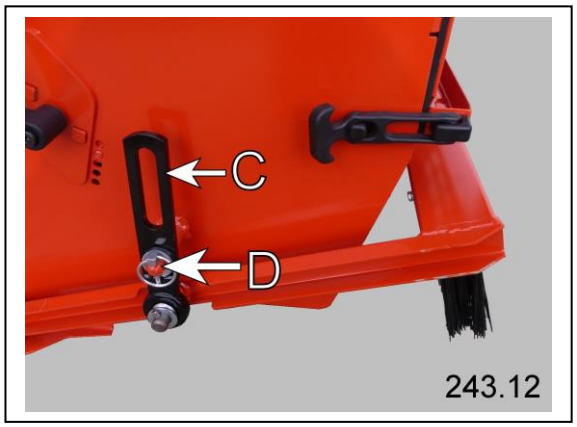
1. Switch off universal-joint shaft drive !

2. The tensioning belt lock (A) must be hooked onto hook (B).



3. The trailing brush is reset as follows for transport :

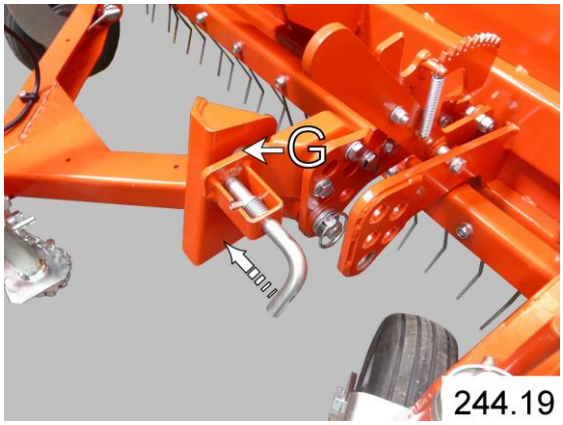
   a) Remove linch pins and U-washers.
   b) Insert brace (C) with the hole on bolt (D).
   c) Secure bracket (C) using U-washer and linch pin.



4. Raise the synthetic turf maintenance machine with the tractor rear hydraulics only to the extent that obstacles can be easily negotiated.

4.5. Transportation the TERRA CLEAN 160

5. When travelling to and from the work site, lift the sweeping head so that the transport lock **(G)** can engage.



6. Avoid obstacles or only cross them slowly and carefully.

5.0. Disconnecting from the Tractor

5.1. General Information

When disconnecting the machine, always set it down on a firm and even surface.

The machine must only be disconnected when the engine is shut off and the PTO shaft drive is switched off.

Before carrying out any work, the engine of the machine and the tractor engine must be switched off.

Only disconnect the machine in an unloaded status from the tractor.

Brushes should not come into contact with the ground when attached.

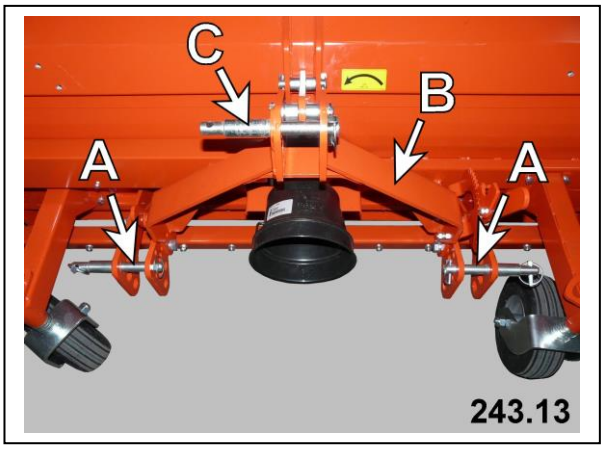
Only use the Terra Clean 160 in a dry place.

Secure the TERRA CLEAN 160 against rolling away.

5.2. PTO shafts – removing the trailer version from the tractor

Proceed as follows for disconnection:

1. Lower rear 3-point hitch of the tractor.
2. Switch off the tractor engine.
3. Release universal-joint shaft from tractor.
4. Release upper guide bar and disconnect at the three-point frame (B) by pulling out bolt (A).
5. Loosen turnbuckles of the stabilising chains
6. Pull out bolt (C) of the three-point frame (B).
7. Carefully drive the tractor forward.
8. Attach bolt (C) to the three-point frame and secure.

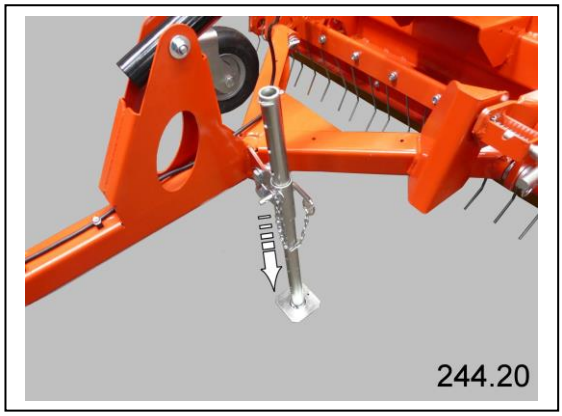


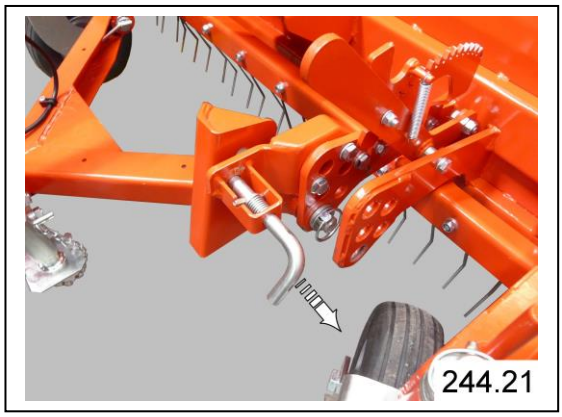
5.0. Disconnecting from the Tractor

5.3. Uncoupling the engine version from the tractor

For disconnecting proceed as follows:

1. Adjust support down to the required position and secure
2. Release transport lock.
3. Lower machine onto support.
4. Disconnect electric connection on tractor.
5. Securely place switch box and cable onto the machine.
6. Release coupling connector from tractor, then drive forward and away from the machine.
7. Reinsert coupling connector on tractor and secure.

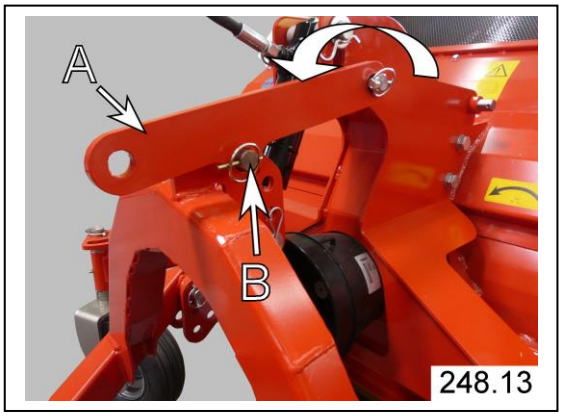




5.4. PTO shafts – uncoupling the trailer version from the tractor

Proceed as follows for disconnection:

1. Lower the sweeping head onto the ground.
2. Turn the securing fishplate (A) forward, and peg it using the centre hole to the pin (B) of the drawbar and secure
3. Release the hydraulic system on the tractor.
4. Remove the universal-joint shaft from the tractor.
5. Uncouple the drawbar from the tractor.
6. Carefully drive the tractor forward.



6.0. Before Initial Operation

6.1. General Information

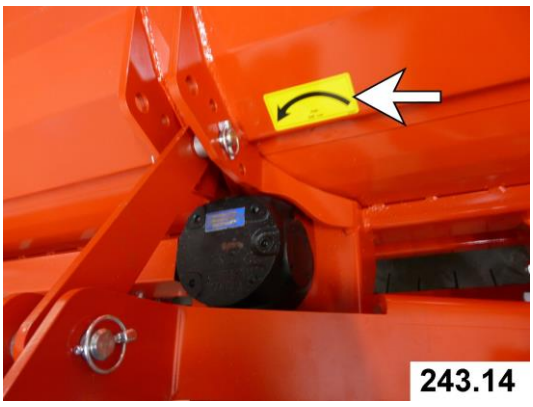
CAUTION !
Before carrying out any work, the engine of the machine and the tractor engine must be switched off.

CAUTION !
The equipment version with a drawbar is **NOT** approved for travel on public roads!

Was usage of the "Terra Clean 160 " maintenance machine approved by the groundsman or synthetic turf manufacturer?

6.2. Checking the Speed and Direction of Rotation of the Tractor's PTO shaft

Check the speed and direction of rotation (signs on the front side of the machine) with the specifications of the tractor for agreement. The sign indicates at what speed and direction of rotation the machine is set.



6.0. Before Initial Operation

6.3. Power drive of Terra Clean 160

All information required for handling, operating or adjusting the Honda engine can be obtained from the enclosed manufacturer's operating instructions.

The following documents from Honda are contained in the delivery:

1. Operating instructions DEUTSCH – ITALIANO – NEDERLANDS
2. Operating instructions ENGLISH – FRANÇAIS – ESPAÑOL
3. Warranty information leaflet
4. Manufacturer's declaration
5. Certificate of emissions values for the US

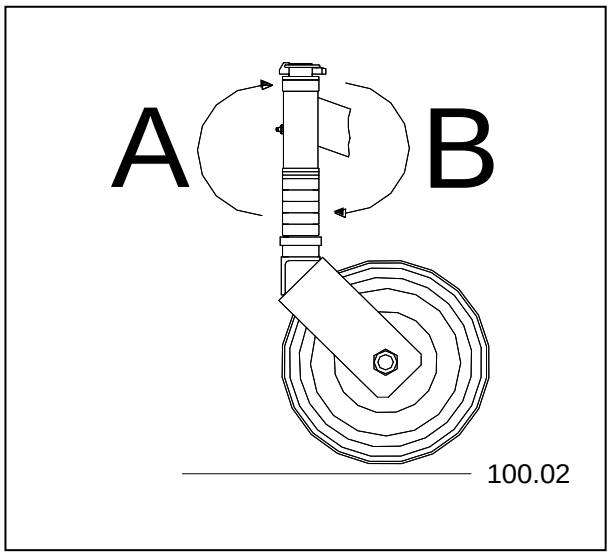
6.4. Setting the Working Depth

The working depth is adjusted by setting the jockey wheels higher or lower on an even surface. Insert the jockey wheels evenly in the wheel holders on the container frame by selecting the appropriate spacer rings and secure using cotter pins.

Switching direction :

A = deeper

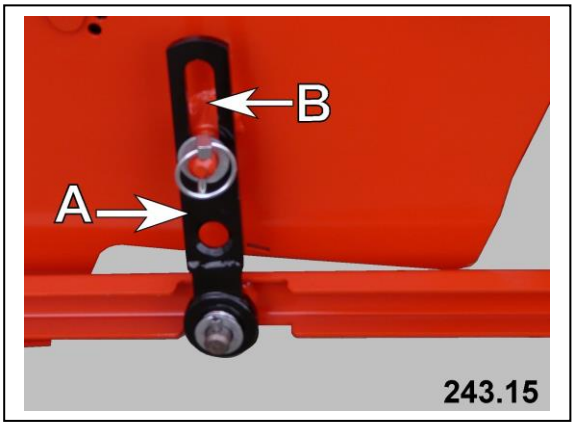
B = higher



6.5. Setting the Brush Rail

The brush rail should evenly distribute the deposited granulate.

To ensure this function, bracket (A) must be inserted in slotted hole (B) and secured using U-washers and linch pins on both sides.



NOTE:
Lower brush rail only on synthetic grass.

6.6. Check the correct adjustment of the cylinder broom

Drive tractor and attachment device onto synthetic grass area.

Lower rear three-point-linkage and bring attachment device into working position.

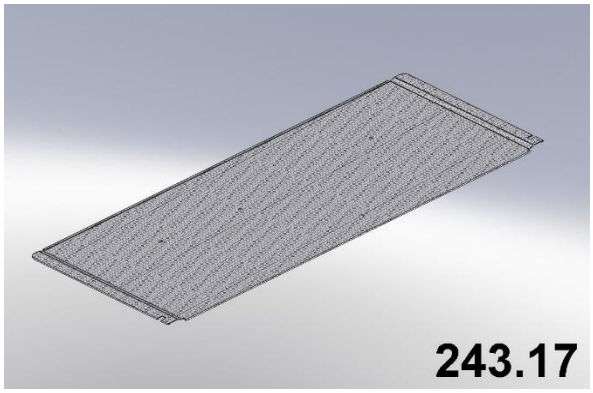
Only the bristle top of the brush rails must touch the synthetic grass.

Check adjustment again after several metres.

6.7. The right vibrating unit for the respective type of artificial turf

STANDARD:

Riddle screen (above) with 8 mm holes



STANDARD:

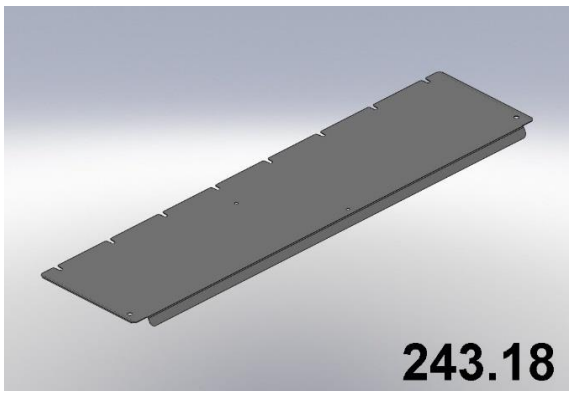
Riddle screen (below) with 6 mm holes

Coarse black granulate,

ideally for grounds which are filled high, with the appropriate granulate proportion

for deep surface cleaning

all granulates and backfill materials



OPTION:

Riddle screen (below) with 5 mm holes

Sand

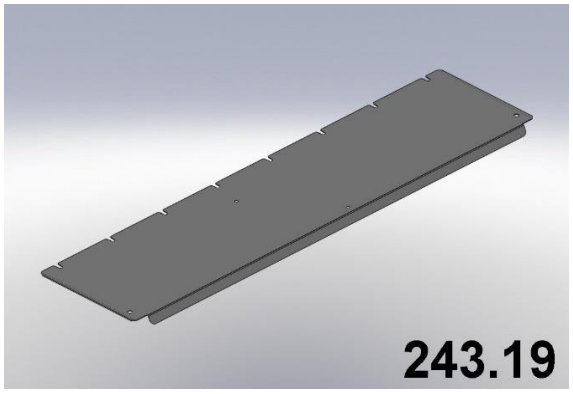
Fine backfill material

Backfill material made of green granulate,

absolutely dry granulate

Surface cleaning for low to medium screen amounts of granulate

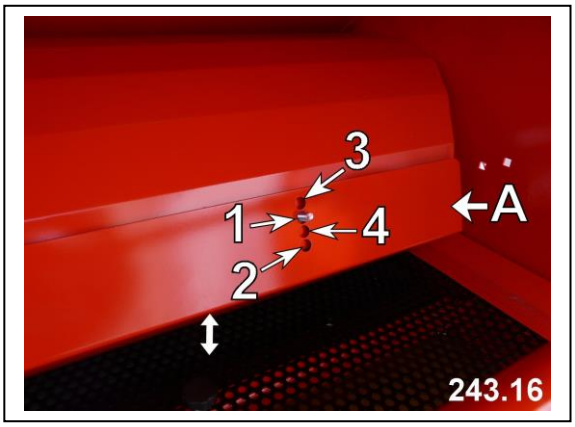
Dirt with a fine cross-section



6.0. Before Initial Operation

6.8. Setting the Baffle Plate in the Container

Baffle plate (A) must be adjusted to the ground characteristics. In order to influence material flow and hence dirt separation, the baffle plate (A) can be installed in 4 different positions.



NOTE:
In the case of newly laid grounds, a high proportion of loose fibres is to be expected.

The gap must be adjusted to the riddle unit's tilt angle.

6.9. Use of the screen combinations

Screen adjustment	Description	Baffle plate adjustment
+ 2	• new or highly filled grounds with low dirt proportion • on regularly maintained grounds with low proportion of coarse dirt • for deep surface cleaning • for dew coverage, not in conjunction with 5 mm screen	**Pos. 4 and 2**
+ 1	• new or highly filled grounds with low dirt proportion • on regularly maintained grounds with coarse dirt • for deep surface cleaning with light dew coverage	**Pos. 1; 4 and 2**
Neutral 0	• on regularly maintained grounds with coarse dirt • for dry conditions	**Pos. 3; 4 and 2**
- 1	• grounds which are not regularly maintained with broken fibre content • for dry conditions • for flat processing with low leaf coverage	**Pos. 3 and 1**
- 2	• grounds which are not regularly maintained with broken fibre content • for dry conditions • not with 5 mm screen • for flat processing with leaf coverage *	**Pos. 4 and 2**

6.10. Adjusting the riddle device

Release clamping lever **(A)** and push in to adjust,

push the adjuster into the desired position;

tighten clamping lever **(A)**

Position “0“

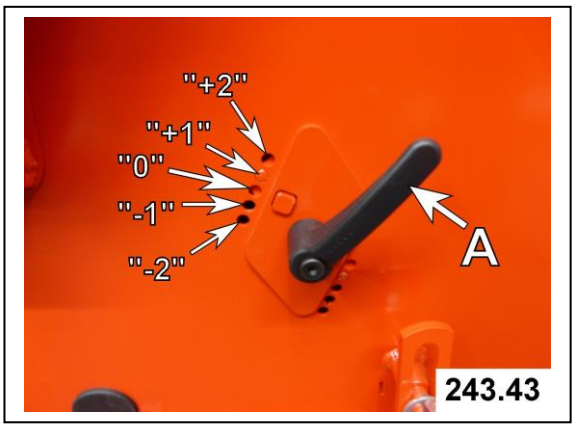
- on regularly maintained grounds with coarse dirt
- for dry conditions

Position “+1 or +2”

- new or highly filled grounds with low dirt proportion
- on regularly maintained grounds with low proportion of coarse dirt
- for deep surface cleaning with light dew coverage

Position “-1 or -2”

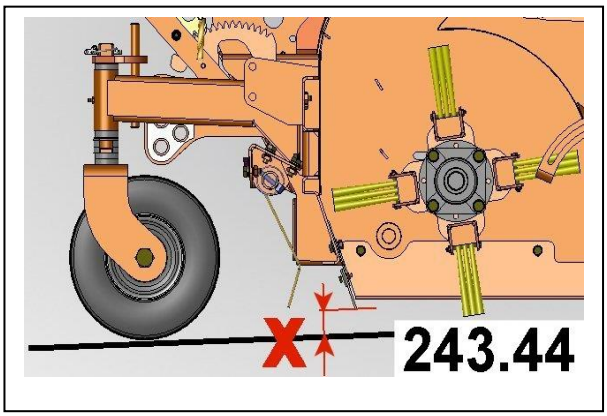
- grounds which are not regularly maintained with broken fibre content
- for dry conditions
- for flat processing with leaf coverage



6.11. Adjusting the front baffle lugs

Adjust the baffle plate on an even, secured surface.

The distance (dimension **X**) from the lower edge of the baffle lugs to the ground should be at least **30 mm**.



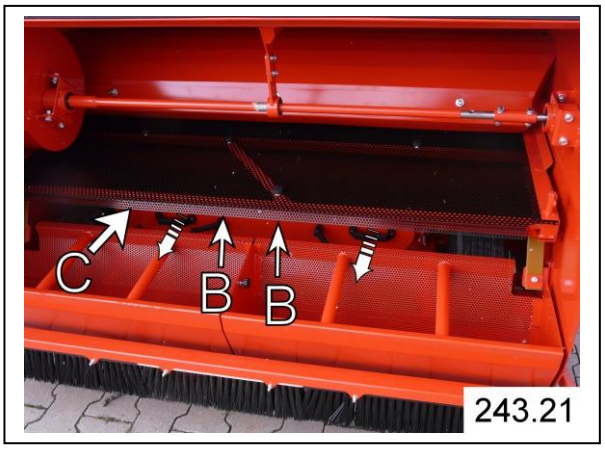
6.12. Converting the vibrating unit

Release clip lock **(A)** on both sides.

Swing the hopper gate up fully and place on the rubber bearings.

Undo both star grip screws (**B** from below) the installed riddle screen **(C)** and remove.

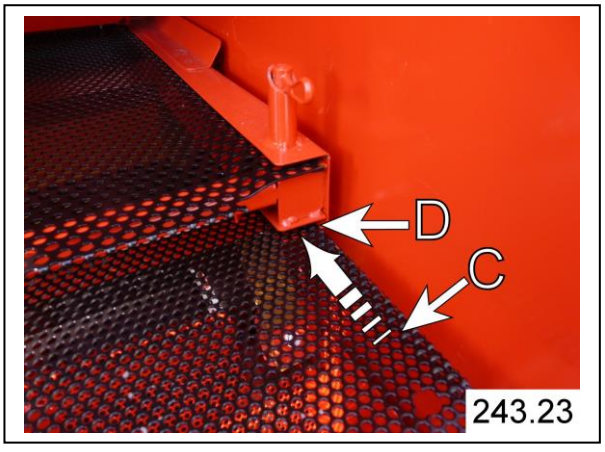
Pull the lower riddle screen **(C)** to the rear out of the container.



Secure the disassembled riddle screen on the front in place of the supplied riddle screen (hole size = 5 mm).

The selected riddle screen **(C)** must be pushed forwards in the guide rail **(D)** until it engages.

Attach the riddle screen from below with both star grip screws.



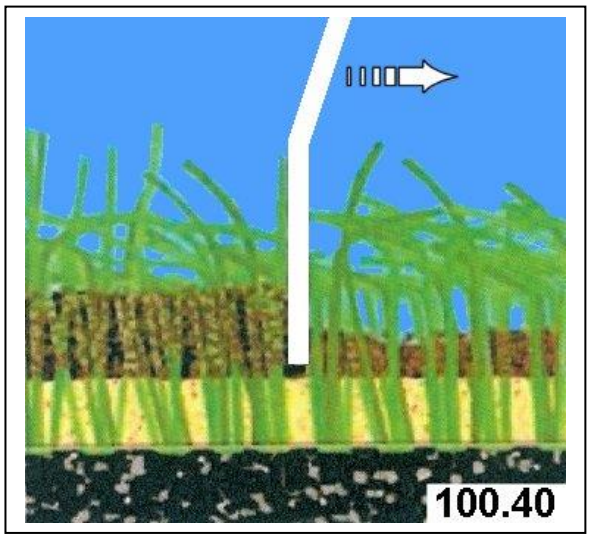
6.13. Adjusting the rake

CAUTION:
The rake must not be installed for newly laid or recently incorporated granulate.

The granulate is loosened using the adjustable rake.

When adjusting, it should be ensured that the spring tines only dip into the granulate and not the sand layer.

If the insert depth is set too deep, the sand and the granulate will become mixed.

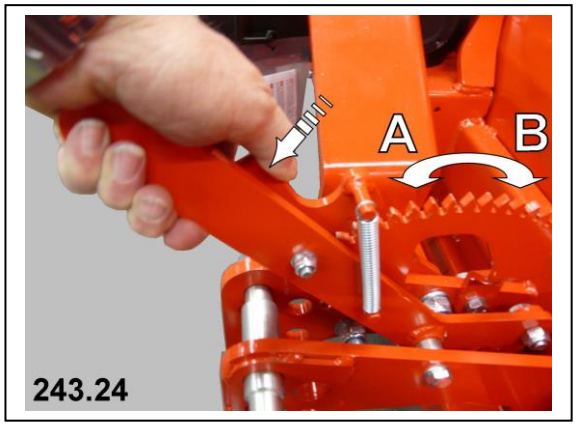


The rake is adjusted using the manual lever on the device's left side.

Push the lever down lightly.

Use your thumbs to push down the short lever to unlock.

The depth setting is fixed by the toothing.



7.0. Operation

7.1. General Information

Drive at a moderate speed.

Avoid abrupt braking and acceleration or the synthetic grass surface may shift or the synthetic grass blades could be sheared off.

The same applies for steering movements.

Avoid tight curves since the synthetic turf could shift.

The synthetic turf maintenance machine should not be used where the granulate is wet, as moist fibres clog the holes of the riddle screen.

The granulate should pass through the screen and fall onto the ground.

Where the holes in the sieve are closed, the granulate is conveyed to the collection tray.

CAUTION!
The self-propelled machine is **NOT** approved for travel on public roads.

7.2. Driving characteristics

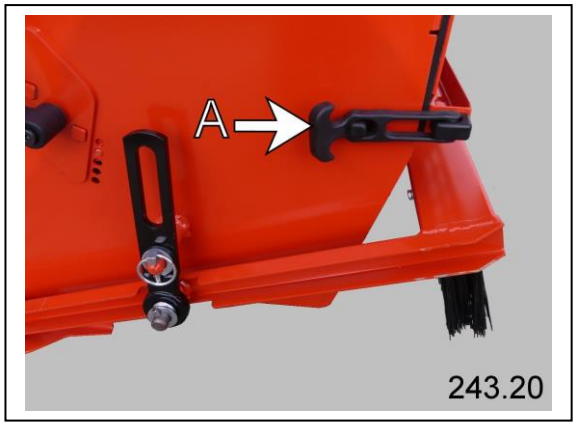
CAUTION:
The driving and operating characteristics of the tractor can be influenced by the disconnection of the machine.

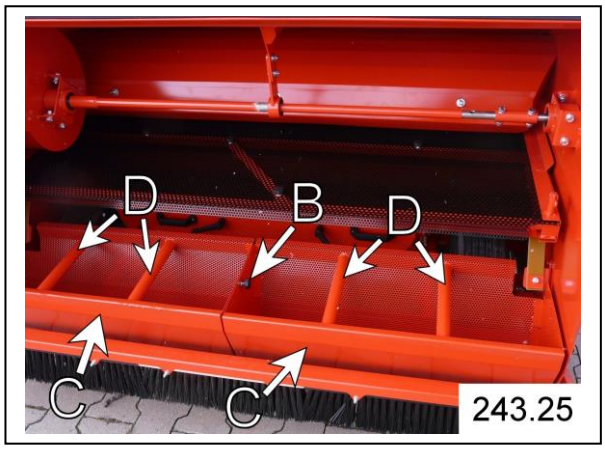
- The driving speed must be adjusted to the respective ground characteristics at full p.t.o. shaft speed.
- If no particular speed is specified by the manufacturer of the synthetic grass area, the working speed should not exceed 5 km/h.
- Where there is a high quantity of granulate, the operating speed must be reduced to 4 km/h.
- Switch off the engine on the Terra Clean 160 C when driving to and from the work site.

7.3. Emptying the Dirt Container

CAUTION:
Before carrying out any work, the engine of the machine and the tractor engine must be switched off.

1. Lower rear 3-point hitch of the tractor
2. Switch off the tractor PTO shaft drive.
3. Release tensioning belt lock (A) on both sides.
4. Swing the hopper gate up.
5. Remove the star grip screw (B)
6. Use reinforcing tubes (D) to lift out and carry the two basins (C).
7. Place the empty trays in the frame.
8. Screw in the star grip screw (B) to connect the two basins
9. Swing the hopper gate down.
10. Hook clip lock (A) on both sides and secure.





7.0. Operation

7.4. Malfunctions and troubleshooting

Description	Cause	Remedy
Machine does not riddle properly in the area of the baffle plate.	Synthetic turf area is too wet.	Reduce the driving speed accordingly.
		Leave the area to dry more.
		Reduce working depth accordingly.
	Driving speed too high for dry working conditions.	Reduce the driving speed accordingly.
		Reduce working depth accordingly.
	Unsuitable screen combination.	Check screen combinations, (see Chapter 6.8.)
	Unsuitable screen setting.	If necessary, set screen setting one level flatter.
	Unsuitable baffle plate setting.	Only if there has been no improvement as a result of the previous measures.
	Screen frequency may be too low.	Check PTO shaft speed; should be in the region of 480 - 540 rpm.
Absorption quality is unsatisfactory	Brush frequency may be too low.	Check PTO shaft speed; should be in the region of 480 - 540 rpm.
	Gap is too wide between baffle plate and brushes.	Check brushes, if necessary replace strip brushes (see Chapter 8.5.)
	Work site is badly littered.	Clean the area twice
		Adjust cleaning intervals to the level of contamination; see Care Intervals (see Chapter 8.2.).

7.0. Operation

7.4. Malfunctions and troubleshooting

Description	Cause	Remedy
A large amount of granulate in the dirt container	Synthetic turf area is too wet.	Reduce the driving speed accordingly.
		Leave the area to dry more.
		Reduce working depth accordingly.
	Driving speed too high for dry working conditions.	Reduce the driving speed accordingly.
		Reduce working depth accordingly.
	Absorption brush is set too deep	Reduce the working depth accordingly.
	Unsuitable screen combination.	Check screen combinations, (see Chapter 6.8.)
	Unsuitable screen setting.	Set the screen setting a level higher, readjust if necessary.
	Unsuitable baffle plate setting.	Check screen combinations, (see Chapter 6.8.)
Machine makes a loud noise or vibrates more strongly	Machine or absorption brush is set too deep.	Reduce working depth, (see Chapter 6.3.)
		Check tyre pressure
Quartz sand on top of the playing field	Machine or absorption brush is set too deep.	Reduce working depth, (see Chapter 6.3.)
		Check tyre pressure
	Harrow is set too deep.	Harrow is set too deep, (see Chapter 6.12.)
		Check tyre pressure
	Too little granulate on the playing field	Refill granulate, see synthetic turf manufacturer's care instructions

8.0. Maintenance

8.1. General Information

ATTENTION DANGER:

Only qualified personnel are permitted to perform maintenance, repair and disassembly tasks.

Only perform maintenance work when the device is attached. Turn off the tractor and secure it against being unintentionally switched on.

For all operations the engine must be switched off and the ignition key must be removed.

The mounted engine must be switched off when conducting work on the Terra Clean 160 C.

For this work, please use your personal protective equipment (PSA) such as: gloves, goggles, ear protectors.

Use **only original parts.** Third-party parts often do not match the required quality and thus endanger your safety. Moreover, the sustained warranty and recognition of justified warranty claims can only be guaranteed, if you exclusively use **original parts from Wiedenmann.** We expressly point out to you that non-original parts that have not been delivered by Wiedenmann also have not been approved and released by Wiedenmann. The installation and/or use of such products may actually have a negative impact on the constructional properties of your vehicle and thus may affect the active and/or passive safety. Damages arising from the use of non-original parts are excluded from the scope of the manufacturer's liability.

Before maintenance, remove all parts not belonging to TERRA CLEAN 160 C. Then reinstall all safety covers/guards.

8.0. Maintenance

8.2. Maintenance and inspection list

Maintenance Interval	Area	Maintenance Task
First use after 5 hours	Machine	Check all moving parts and screws for tightness.
First use after 20 hours	V-belt pulley tensioning	Initial check See Chapter 8.7.
According to grounds	Emptying flap	Open the lever and close it again; see Chapter 7.5.
	Membranes of filter unit	Empty by pressing See Chapter 7.4.
Daily	Screen	Basic cleaning
	Fine screen	Check for contamination or clogging. Screen must be cleaned if the open surface cross section is < 50%.
	Filter insert	Rinse out cyclone filter with water and allow to dry overnight.
	Cardan shaft	Lubricate (See separate universal-joint shaft manufacturer's operating instructions)
	Machine	Clean
As required	Wheels	Check air pressure
	Cylinder broom	Adjust or reset See Chapter 8.5.
	Brush strips	If brush length is (shorter than 90 mm) install new brush strip set See Chapter 8.6.
Weekly	Filter unit (maintain regular maintenance regulations and dry care conditions	Disassemble cyclone filter with water and allow to dry overnight. See section 8.4.
	Lubrication points	Lubricate following the instructions in Section 8.9.
100 hours	V-belt pulley tensioning	Carry out inspection following the instructions in Section 8.6., retension if required
Annually	Gearbox	Replace gearbox oil
	Machine	Conserve
	HONDA - engine	All information required for performing maintenance on the Honda engine can be obtained from the enclosed manufacturer's operating instructions.

8.3. Cleaning the Synthetic Turf Maintenance Machine

CAUTION:
Cleaning must only be carried out using hand brushes or water - never with bare hands.
- RISK OF INJURY!

Clean the machine daily when work is completed to ensure a faultless function during the next usage.

Main cleaning points are:

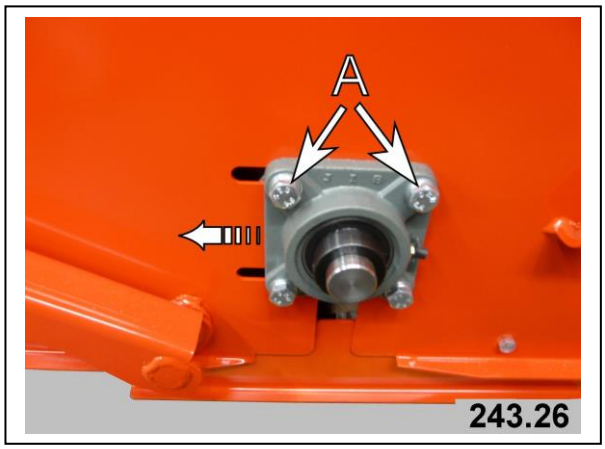
- all brush rails
- riddle screen in container
- perforated mesh in collecting tray
- after usage on wet grounds, we recommend that you check the intake channel and if necessary clean.
- Filter unit
  (see Chapter 8.4.)

8.4. Setting or Resetting the Cylinder Broom

CAUTION :
Before carrying out any work, the engine of the machine and the tractor engine must be switched off.
- RISK OF INJURY !

The ideal distance between the bristle tips and the front conveyor wall is 10-20 mm.

- Undo the screws **(A)** on the flange bearings of the right and left cylinder broom (not illustrated).
- Move the flange roller bearings on the right and left until the ideal distance between the bristle tips and the front conveyor wall is reached.
- Tighten the screws on the flange roller bearings.
- Check the V-belt tension on the right side (see Chapter 8.7.). If required, retension the V-belt.



INFORMATION

When the bristles have been shortened by 30 mm by wear, the ideal distance between the bristle tips and the front conveyor wall cannot be set anymore. Replace the sweeping bars.

8.0. Maintenance

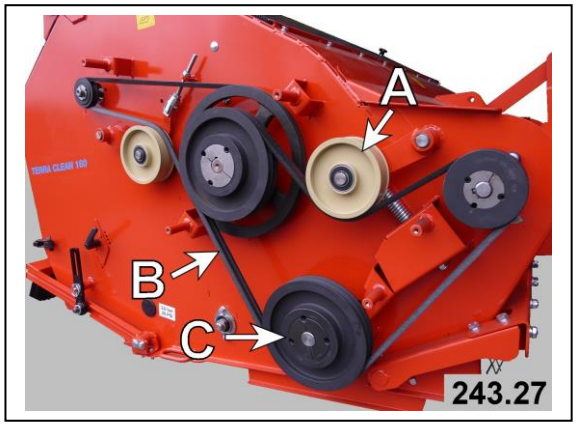
8.5.1. Kehrleisten drehen bzw. auswechseln bei Zapfwellenantrieb

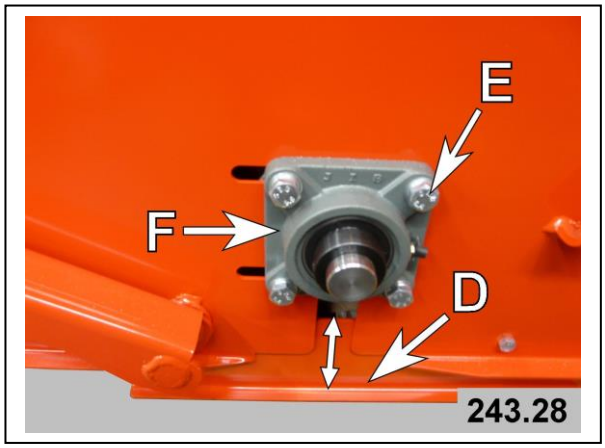
CAUTION :

Before carrying out any work, the engine of the machine and the tractor engine must be switched off.

- RISK OF INJURY !

1. Remove the right drive protection.
2. Undo V-belt tensioner **(A)**.
3. Disassemble V-belt set **(B)**.
4. Disassemble V-belt pulley **(C)**.
5. Remove baffle wall **(D)** on both sides.
6. Undo the fixing screws **(E)** on both lower lateral bearings **(F)**.
7. Pull both lateral bearings **(F)** outwards.
8. Place the cylinder broom down onto the floor.
9. Lift the machine using the tractor rear hydraulics.
10. Pull out the cylinder broom.
11. In the case of slightly deformed brush rails, these can be reinstalled turned through 180°.
12. In the case of severely deformed brush rails, all brush rails have to be replaced.
13. Position the cylinder broom under the machine.
14. Lower the machine onto the jockey wheels.
15. Raise the cylinder broom in the side notches **(⇔)**.
16. All further steps to be performed in reverse order, as described.
17. Ensure that the V-belt pulley is correctly installed.
18. Perform adjustments according to Chapters 8.5. /8.7. and 8.8.

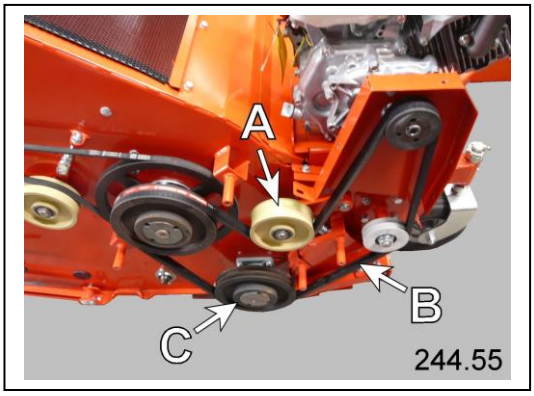


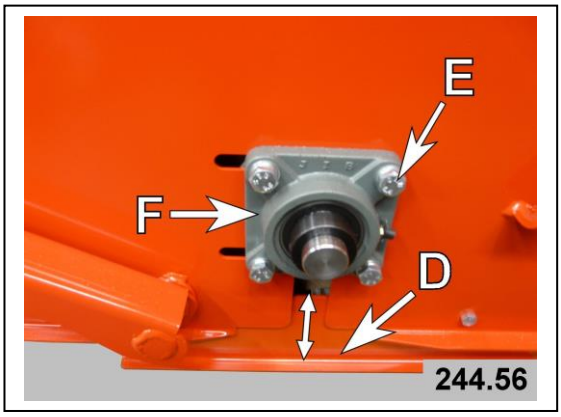


8.5.2. Kehrleisten drehen bzw. auswechseln bei Motorantrieb

CAUTION :
Before carrying out any work, the engine of the machine and the tractor engine must be switched off.
- RISK OF INJURY !

1. Remove the right drive protection.
2. Undo V-belt tensioner **(A)**.
3. Disassemble V-belt set **(B)**.
4. Disassemble V-belt pulley **(C)**.
5. Remove baffle wall **(D)** on both sides.
6. Undo the fixing screws **(E)** on both lower lateral bearings **(F)**.
7. Pull both lateral bearings **(F)** outwards.
8. Place the cylinder broom down onto the floor.
9. Raise the machine with a crane.
10. Pull out the cylinder broom.
11. In the case of slightly deformed brush rails, these can be reinstalled turned through 180°.
12. In the case of severely deformed brush rails, all brush rails have to be replaced.
13. Position the cylinder broom under the machine.
14. Lower the machine onto the jockey wheels.
15. Raise the cylinder broom in the side notches **(⇔)**.
16. All further steps to be performed in reverse order, as described.
17. Ensure that the V-belt pulley is correctly installed.
18. Perform adjustments according to Chapters 8.5. /8.7. and 8.8.





8.0. Maintenance

8.6.1. Keilriemenspannung prüfen bei Zapfwellenantrieb

CAUTION :
Before carrying out any work, the engine of the machine and the tractor engine must be switched off.
- RISK OF INJURY !

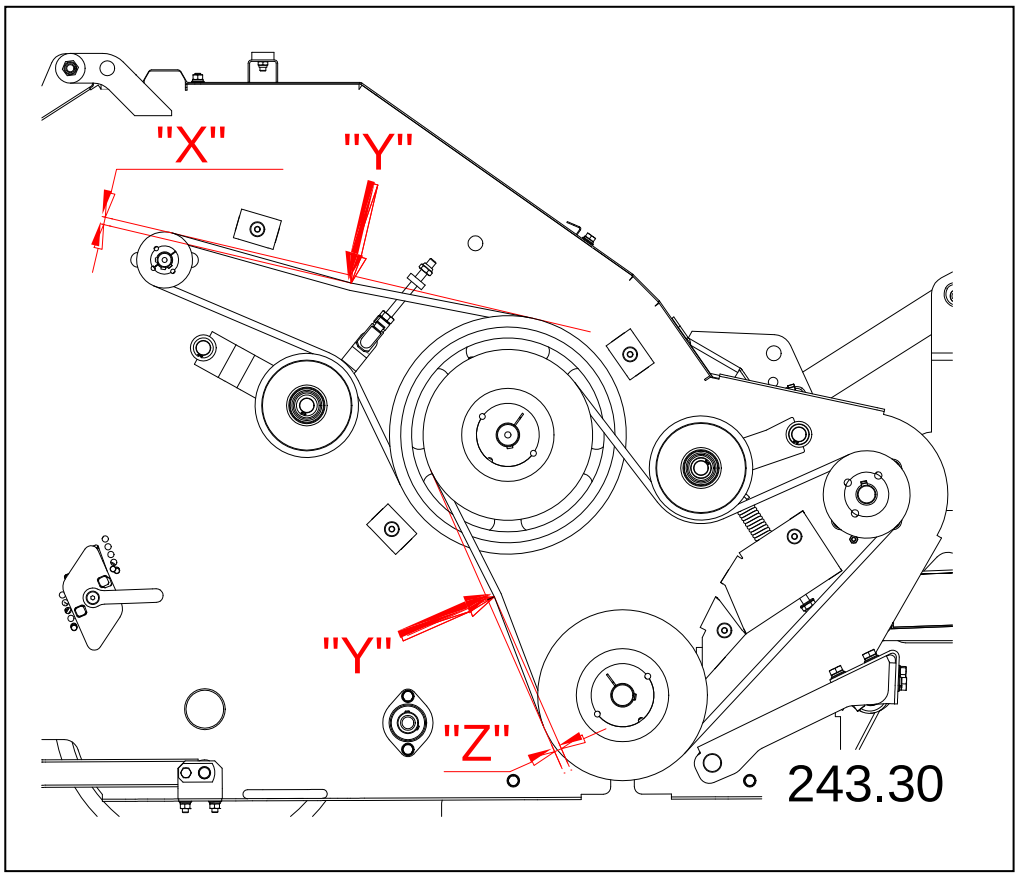
Regularly check the V-belt tension.

Shut off the tractor and remove the ignition key.

Remove the drive guard

Check the V-belt tension

The V-belt must pass through between belt pulleys at
dimension “X“ = about 16 mm
dimension “X“ = about 12 mm
at a force of
“Y“ = 50 N.



The drive guard must be reattached after maintenance work is completed.

8.6.2. Keilriemenspannung prüfen bei Motorantrieb

CAUTION :

Before carrying out any work, the engine of the machine and the tractor engine must be switched off.

- RISK OF INJURY !

Regularly check the V-belt tension.

Shut off the tractor and remove the ignition key.

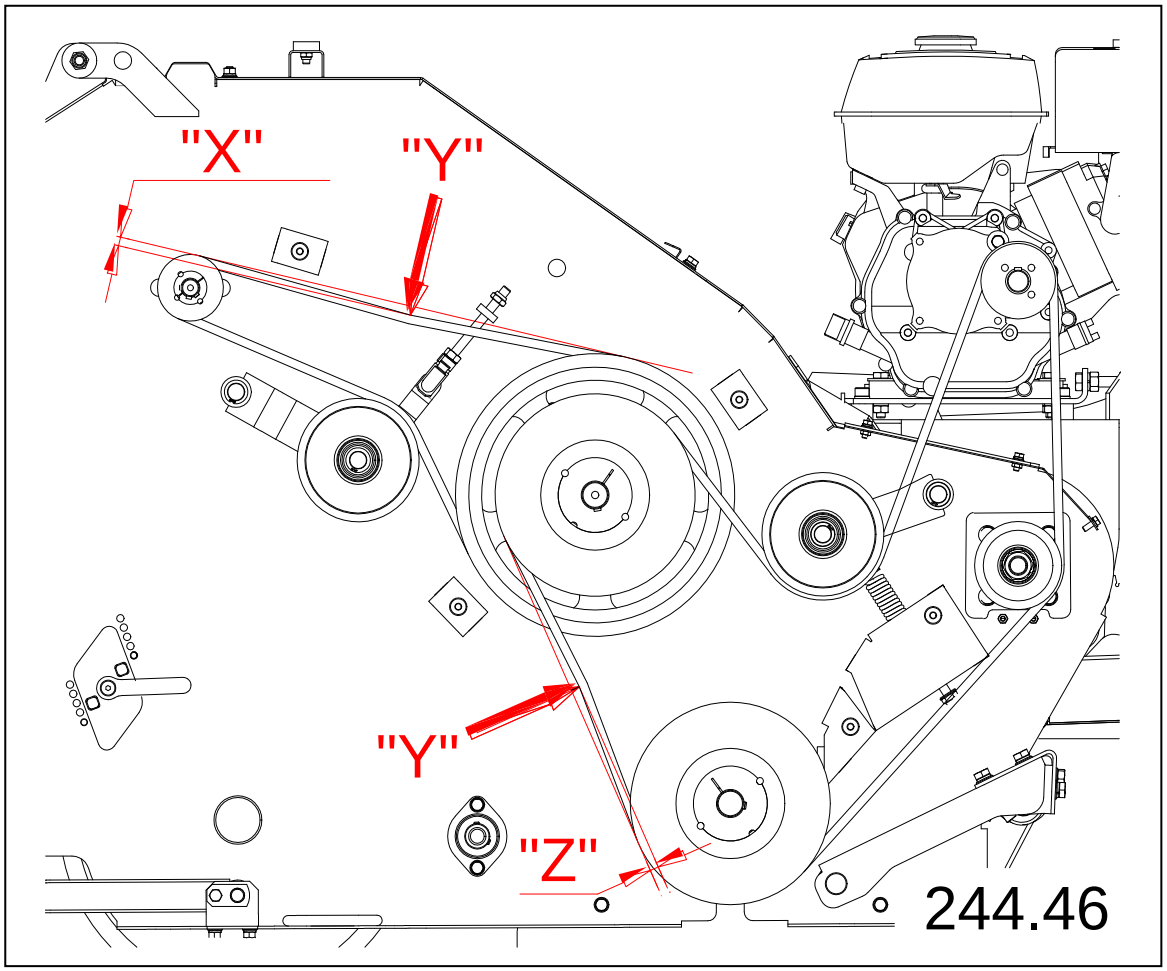
Remove the drive guard

Check the V-belt tension

The V-belt must pass through between belt pulleys at

dimension “X“ = about 16 mm
dimension “X“ = about 12 mm

at a force of **“Y“ = 50 N.**



The drive guard must be reattached after maintenance work is completed.

8.7. Retensioning V-belts

CAUTION :
Before carrying out any work, the engine of the machine and the tractor engine must be switched off.
- RISK OF INJURY !

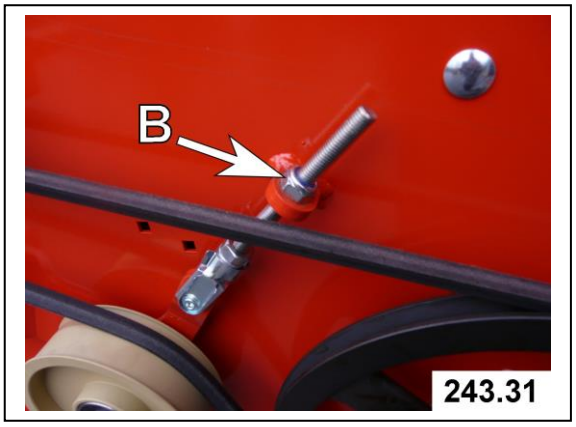
Proceed as follows to retension the V-belts:

1. Shut off the tractor and remove the ignition key.

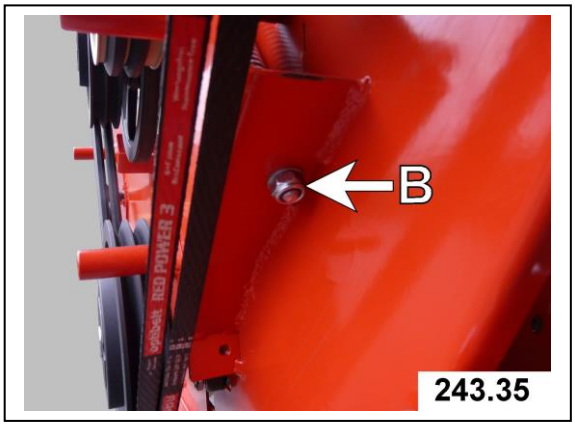
2. Switch off the Terra Clean 160 C motor

3. Remove the drive guard.

4. Turn nut (B) clockwise until the values (see Section 8.7.) for the correct V-belt tension are reached.



5. After the setting takes place, mount the drive guard.

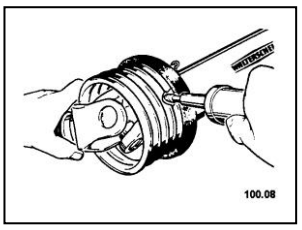


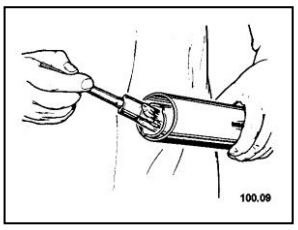
8.8. Lubrication – General Information

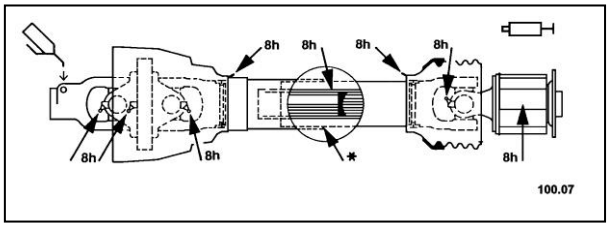
- The engine must be shut off and the ignition key must be removed for all lubrication work.
- Where required, lubricate more often than specified.
- Always keep all exposed machine parts, threaded spindles and guides lightly lubricated.
- Clean grease nipple before lubrication.
- Clean up leaking grease.
- Before starting the machine after a longer standstill, lubricate and maintain the entire machine.

8.8.1. Lubrication (daily)

- Clean the profile pipes and protective pipes if they are contaminated.
- Grease the inside of the outer sliding profile.
- The points indicated in the figure by the arrows must be lubricated daily.
- Clean and lubricate the universal-joint shaft before any long shutdown period.





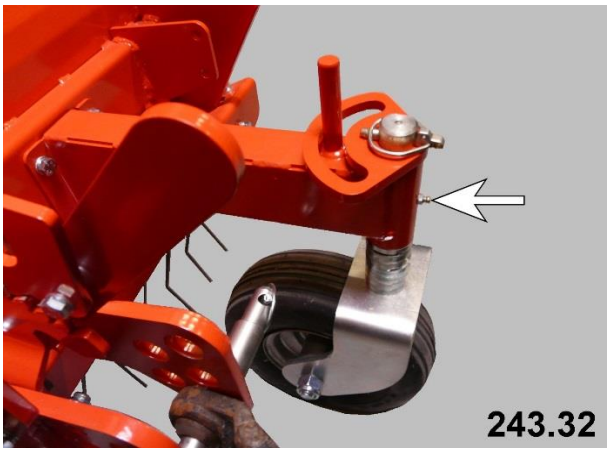


8.8.2. Lubrication (weekly)

The points indicated in the figure by the arrows must be lubricated once a week.

The figures only show one of several corresponding assembly groups with lubrication points.

Jockey wheel bearing



Side bearing

8.9. Wheels and Tyres

Regularly check the tyre pressure: **200 kPa**

CAUTION:
Serious or fatal injuries can be caused by the explosion-type bursting of the tyres and by the rim parts.

Only carry out tyre installation if you have appropriate experience and equipment.

Always adhere to the recommended tyre pressure. Never inflate the tyres over the recommended pressure. Do not heat the wheels or tyres or carry out welding on them. Heating the tyres can lead to explosion-type tyre bursts as the pressure in the tyre thereby becomes very high. Welding can lead to deformations or damage of the wheel.

When inflating the tyres, select a filling connection with a safety clip and an extension hose with sufficient length so that you can stand to one side when inflating the tyres. Never stand in front of or on the tyre. If available, use a safety cage.

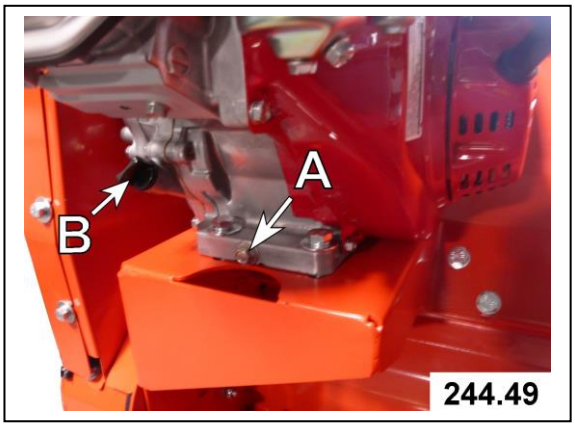
Check wheels and tyres daily for low pressure, slits, bulges, damaged rims, missing wheel bolts or –nuts.

8.10. Ölwechsel Honda-Motor

Auffangwanne unter dem Motor auf den Boden stellen.

Ölablaßschraube **(A)** entfernen.

Verschluß **(B)** am Öleinfüllstutzen entfernen.



Vor dem Einfüllen die Ölablaßschraube **(A)** eindrehen.

Die erforderliche Ölsorte und Ölmenge entnehmen Sie der mitgelieferten Bedienungs-anleitung des Herstellers.

WICHTIG:
Beachten Sie unbedingt die Vorschriften und Gesetze zur Entsorgung von umweltbelastenden Stoffen. Informieren Sie sich eingehend über deren Entsorgung.

8.11. Unauthorised Modification and Spare Part Manufacturing

Conversion and modifications to the machine are permitted only after prior co-ordination with the manufacturer!

Original spare parts and accessories authorised by the manufacturer guarantee your safety. The use of other parts can change the properties of the machine. We assume no liability for the consequences of using other parts.

8.12. Disassembly / Disposal

CAUTION:

Proceed carefully when disassembling the machine. Read the Section "Safety and Precautions" and observe local safety regulations.

The dangers are as follows:

- **Heavy parts which could fall down after disassembly**
- **Sharp edges**
- **The parts might topple over and crush someone.**

Disassembly for Disposal

1. Place the equipment on firm ground.
2. Disassemble the machine, working from top to bottom.

IMPORTANT:
Strictly observe the regulations and laws concerning the disposal of environmentally hazardous substances. Get detailed information about their disposal.

9.0. Equipment

9.1. Scope of Delivery

- Terra Clean 160 C with:
  - 540 rpm drive,
    clockwise rotation;
    incl. universal-joint shaft

  or

  - 5.3 KW (7.2 hp)
    engine drive

  - Standard riddle screen
    Upper 8 mm hole
    Lower 6 mm hole
- Attachment components:
  - CAT.I three-point linkage

  or

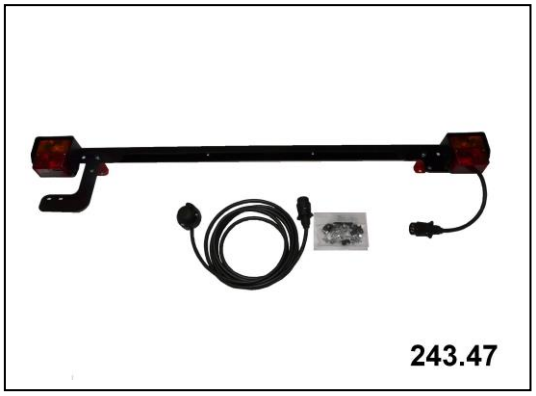
  - Lower hitch drawbar

  or

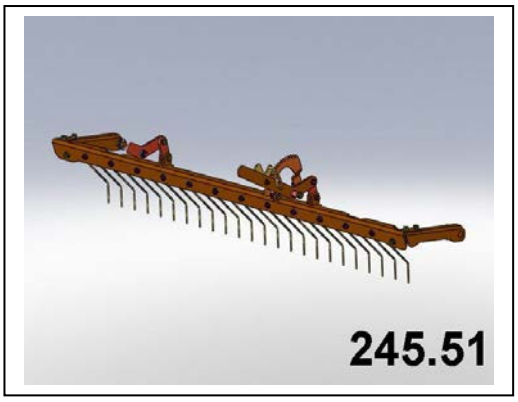
  - Drawbar with electrospindle
    for lifting out the
    sweeping head
- 90 litre collecting tray
- Operating instructions,
  transfer declaration with
  guarantee card.

9.2. Special equipment

Lighting system



Coarse tines



10.0. Technical Specifications

10.1. Technical specifications – PTO shafts – three-point linkage version

A	Device length from bottom connecting rod connection	1722 mm
B	Machine width	1865 mm
B1	From the centre of the machine to the outer edge on the right	950 mm
B2	From the centre of the machine to the outer edge on the left	915 mm
C	Machine height	1090 mm
D	Working width	1600 mm
E	Min. height up to lower guide bar connection	ça. 354 mm
F	Height up to middle of drive shaft	522 mm

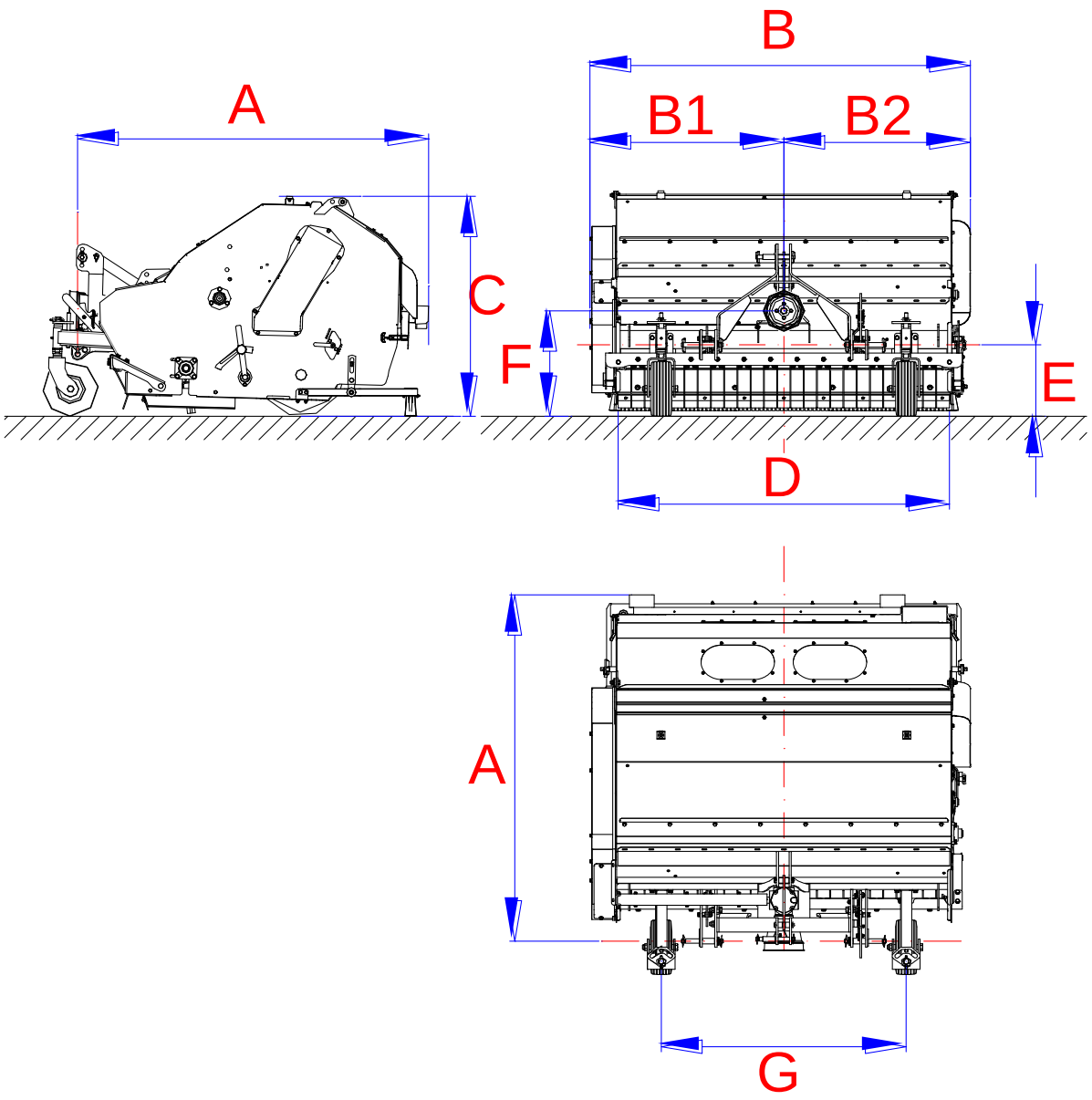
	Max. drive speed	540 rpm
	Cylinder broom working speed	ça. 510 rpm
	Riddle screen working speed	ça. 510 rpm
	Fan working speed	ça. 2260 rpm
	Min. power required for tractor	25 KW / 35 PS
	Operating speed	5 km/h
	Cylinder broom working depth	5 – 7 mm

	Tyre equipment at front	11x4.00-5 / 2PR
	Diameter of tyres	270 mm
	Tyre pressure	2 bar
G	Front track	1200 mm
	Tyre equipment at back	16x6.50-8 / 4PR
	Diameter of tyres	410 mm
	Tyre pressure	2 bar
G	Rear track	1300 mm
	Collecting tray volume	90 litre

	Weights:	
	Version with three-point linkage cat.1	538 kg
	Lighting system	4 kg

10.0. Technical Specifications

10.1. Technical specifications – PTO shafts – three-point linkage version



10.0. Technical Specifications

10.2. Technical specifications – engine version

A	Machine length including drawbar	2730 mm
B	Machine width	1865 mm
C	Machine height	1125 mm
D	Working width	1600 mm
E	Max. height of the lower draw shackle	315 mm

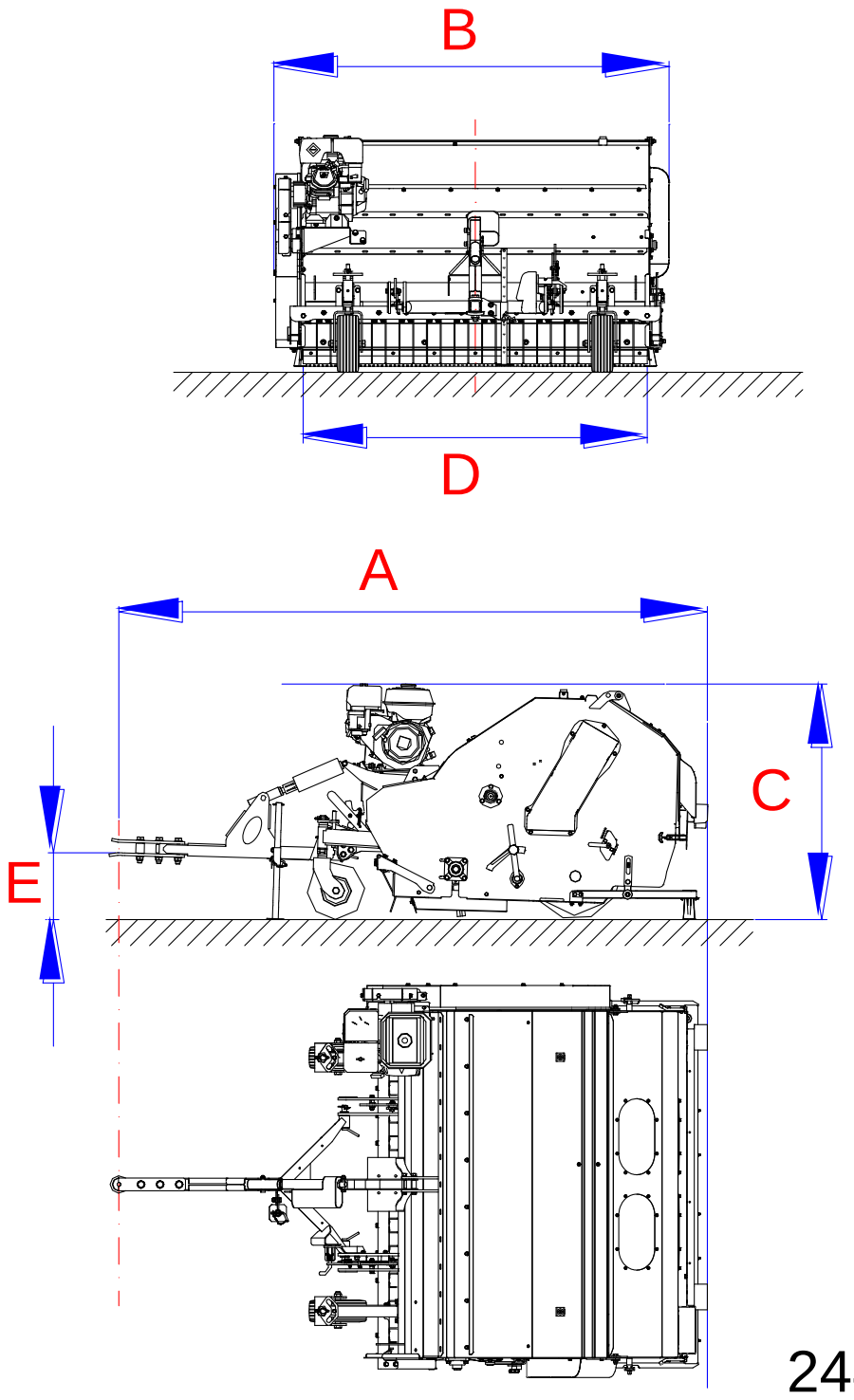
	Power drive	Honda GX 240
	Motor capacity	5,3 KW / 7,2 PS
	Contents of the unleaded petrol fuel tank	5,3 litre
	Motor oil - filling capacity	1,1 litre
	Nominal engine speed	2300 1/min
	Please refer to the enclosed manufacturer's operating instructions for all further engine details.	
	Cylinder broom working speed	ça. 510 1/min.
	Riddle screen working speed	ça. 510 1/min.
	Fan working speed	ça. 2260 1/min.
	Operating speed	5 km/h
	Cylinder broom working depth	5 – 7 mm

	Min. power required for tractor	9 KW / 12 PS
	Tyre equipment at front	11x4.00-5 / 2PR
	Diameter of tires	270 mm
	Tyre pressure	2,0 bar
	Front track	1200 mm
	Tyre equipment at back	16x6.50-8 / 4PR
	Diameter of tires	410 mm
	Tyre pressure	2,0 bar
	Rear track	1300 mm
	Collecting tray volume	90 litre

	Weights:	
	Design with drawgear and mounted engine	566 kg

10.0. Technical Specifications

10.2. Technical specifications – engine version



10.0. Technical Specifications

10.3. Technical specifications – PTO shafts – trailer version

A	Machine length from centre of the connecting hole	2675 mm
B	Machine width	1865 mm
B1	From the centre of the machine to the outer edge on the right	950 mm
B2	From the centre of the machine to the outer edge on the left	915 mm
C	Machine height	1136 mm
D	Working width	1600 mm
E	Min. height to lower edge of fishplate	ça. 247 mm
F	Height up to middle of drive shaft	520 mm

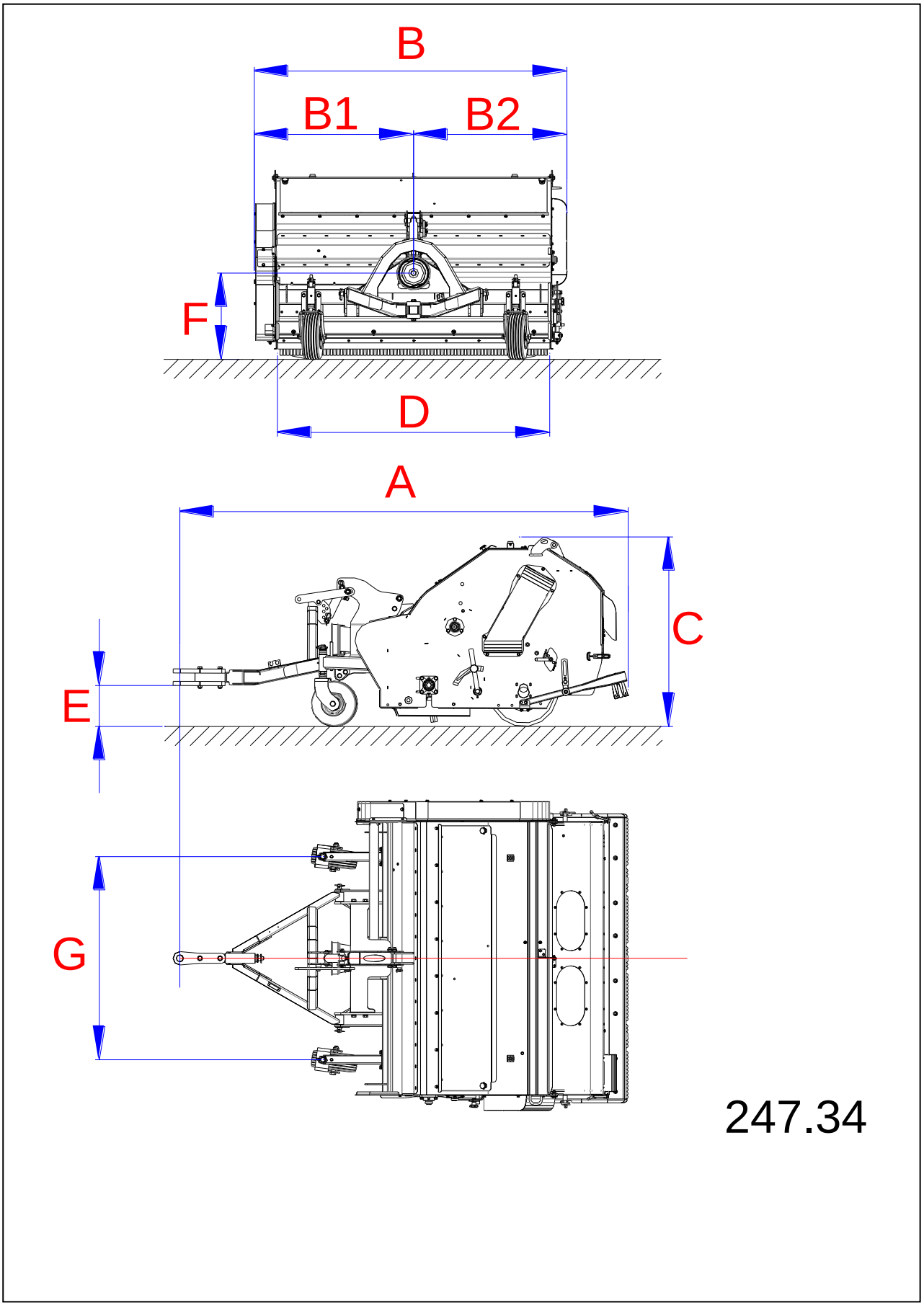
	Max. drive speed	540 rpm
	Cylinder broom working speed	ça. 510 rpm
	Riddle screen working speed	ça. 510 rpm
	Fan working speed	ça. 2260 rpm
	Min. power required for tractor	25 KW / 35 PS
	Operating speed	5 km/h
	Cylinder broom working depth	5 – 7 mm

	Tyre equipment at front	11x4.00-5 / 2PR
	Diameter of tyres	270 mm
	Tyre pressure	2 bar
G	Front track	1200 mm
	Tyre equipment at back	16x6.50-8 / 4PR
	Diameter of tyres	410 mm
	Tyre pressure	2 bar
G	Rear track	1300 mm
	Collecting tray volume	90 litre

	Weights:	
	Design with drawbar bottom hitch	590 kg
	Lighting system	4 kg

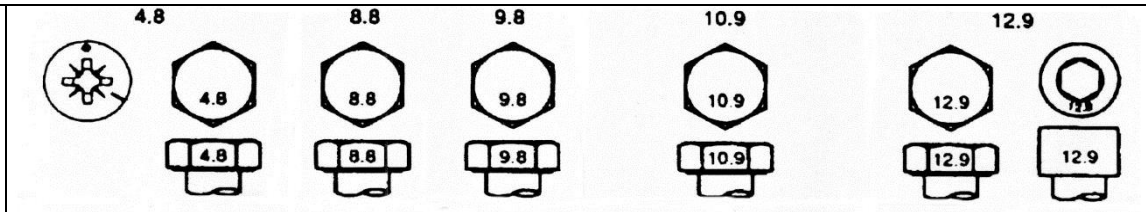
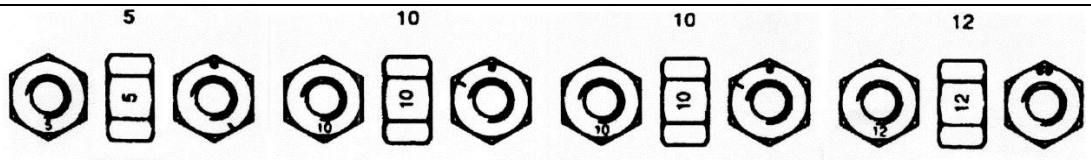
10.0. Technical Specifications

10.3. Technical specifications – PTO shafts – trailer version



10.0. Technical Specifications

10.4. Metric bolt and cap screw torque values

Property Class and Head Markings	
Property Class and Nut Markings	

Size	class 4.8				class 8.8 or 9.8				class 10.9				class 12.9			
	Lubricated *		Dry **		Lubricated *		Dry **		Lubricated *		Dry **		Lubricated *		Dry **	
	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft
M6	4,8	3,5	6	4,5	9	6,5	11	8,5	13	9,5	17	12	15	11,5	19	14,5
M8	12	8,5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	255	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designet to fail under predetermined loads. Always replace shear bolt with identical property class

Fasteners should be replaced with the same or higher property class. If higher property class fasteners used, these should only be tightened to the strength of the original.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent therm from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

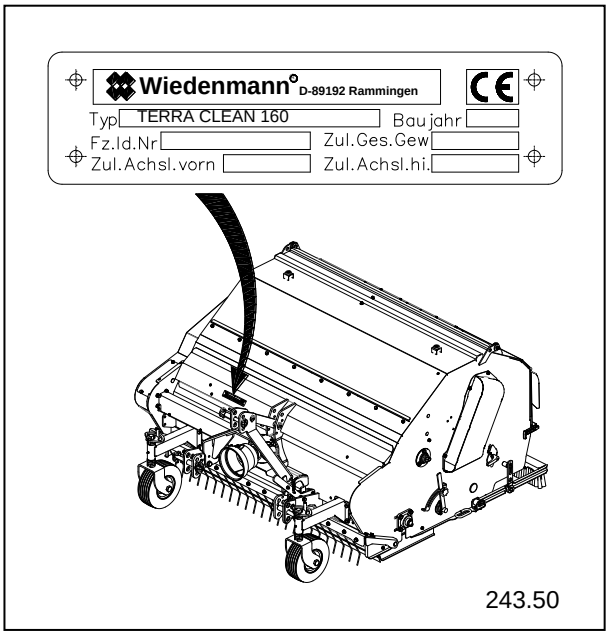
** "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phossphate and oil coatings.

** "Dry" means plain or zinc platend without any lubrication.

10.0. Technical Specifications

10.5. Chassis Number

Enter the respective product identification no. in the space provided below. Always quote this number when ordering spare parts or in case of warranty claims.



Veh. Id. no. _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _