Original inside

GB Operator‘s manual



"Translation of the original Operating Manual"

**Nr. 99 319.GB.80R.0**

# NOVAALPIN 301 B/T

**(Type PSM 319 :** + . . 01001**)**

# NOVAALPIN 261 B/T

**(Type PSM 316:** + . . 01001**)**

# NOVAALPIN 221 B/T

**(Type PSM 315 :** + . . 01001**)**

**Disc mower**

Chassis Nr.

# Pöttinger - Trust creates Affinity - since 1871

"Quality pays for itself." Therefore we apply the highest quality standards to our products which are constantly monitored by our in-house quality management and our management board. Because the safety, perfect function, highest quality and absolute reliability of our machines in operation are the core competencies for which we stand.

There may be deviations between these instructions and the product as we are constantly developing our products. Therefore no claims may be derived from the data, illustrations and descriptions. Please contact your Specialist Service Centre for any binding information about specific features of your machine.

We would ask you to please understand that changes to the scope of supply with regard to form, equipment and technical specifications are possible at any time.



# Product liability, information obligation

Product liability obliges manufacturers and dealers to issue operating instructions for the machine at the point of sale and to instruct the customer on the operation, safety and maintenance regulations governing the machine.

A confirmation is required to verify that the machine and operating instructions have been handed over correctly.

For this purpose

- **Document A** is to be signed and returned to Pöttinger or via the internet to www.poettinger.at
- **Document B** remains with the specialist dealer handing over the machine.
- **The customer receives document C**.

For the purposes of product liability law, every farmer is an entrepreneur.

In the terms of product liability law, damage to property is any damage arising due to the machine, but not to the machine, and an excess (500 euros) exists for this liability.

Corporate damage to property within the terms of the product liability law is excluded from this liability.

**Be advised!** The operating instructions must also be handed over with any subsequent machine sale or transfer and the transferee must be instructed in the regulations stated.

# Refer to PÖTPRO for additional information about your machine:

Are you looking for suitable accessories for your machine? No problem! All the information you require is here at your disposal. Scan the QR code on the machine's type plate or look under www.poettinger.at/poetpro

And if we don't have what your looking for, then your Specialist Service Centre is there for you with help and advice.

# (GB) INSTRUCTIONS FOR PRODUCT DELIVERY

**Dokument D**

PÖTTINGER Landtechnik GmbH
Industriegelände 1
A-4710 Grieskirchen
Tel. 07248 / 600 -0
Telefax 07248 / 600-2511

**According to the product liability please check the above mentioned items.**

**Please check.** [X]

- ❑ Machine checked according to delivery note. All attached parts removed. All safety equipment, drive shaft and operating devices at hand.
- ❑ Operation and maintenance of machine and/or implement according to operating instructions explained to the customer.
- ❑ Tyres checked re. correct pressure.
- ❑ Wheel nuts checked re. tightness.
- ❑ Drive shaft cut to correct lenght.
- ❑ Correct power-take-off speed indicated.
- ❑ Fitting to tractor carried out: to three-point linkage
- ❑ Trial run carried out and no defects found.
- ❑ Functions explained during trial run.
- ❑ Pivoting in transporting and operating position explained.
- ❑ Information given re. optional extras.
- ❑ Absolute need to read the operating manual indicated.

In order to prove that the machine and the operating manual have been properly delivered, a confirmation is necessary.
For this purpose please do the following:

- sign the **document A** and send it to the company Pöttinger or via the internet to www.poettinger.at
- **document B** stays with the specialist factory delivering the machine.
- **document C** stays with the customer.

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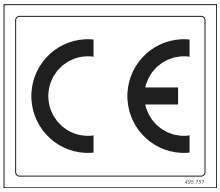
**Attention!**

**Observe Safety Hints in the supplement!**

## CE sign



The CE sign, which is affixed by the manufacturer, indicates outwardly that this machine conforms to the engineering guideline regulations and the other relevant EU guidelines.

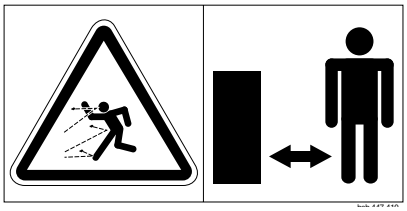
**EU Declaration of Conformity (see supplement)**

By signing the EU Declaration of Conformity, the manufacturer declares that the machine being brought into service complies with all relevant safety and health requirements.

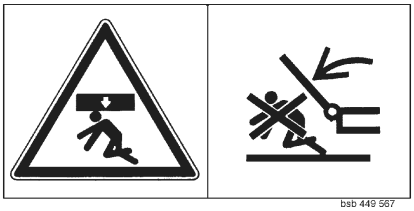
**Recommendations for work safety**

**All points referring to satety in this manual are indicated by this sign.**

## Meaning of warning signs

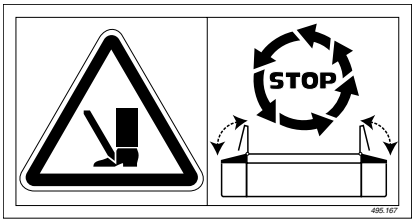


Danger - flying objects; keep safe distance from the machine as long as the engine is running.

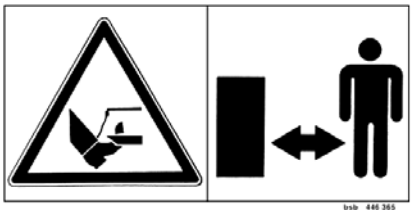



Stay clear of swinging area of implements

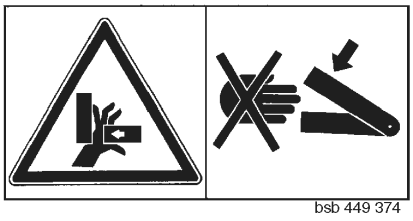

Wait until all machine components have stopped completely before touching them.



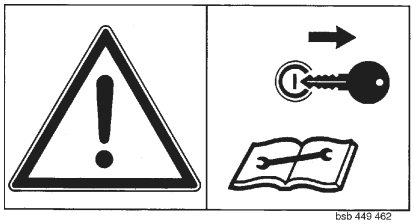

Close both side protective coverings before engaging p.t.o..



Stay clear of mower knife area as long as tractor engine is running with PTO connected.

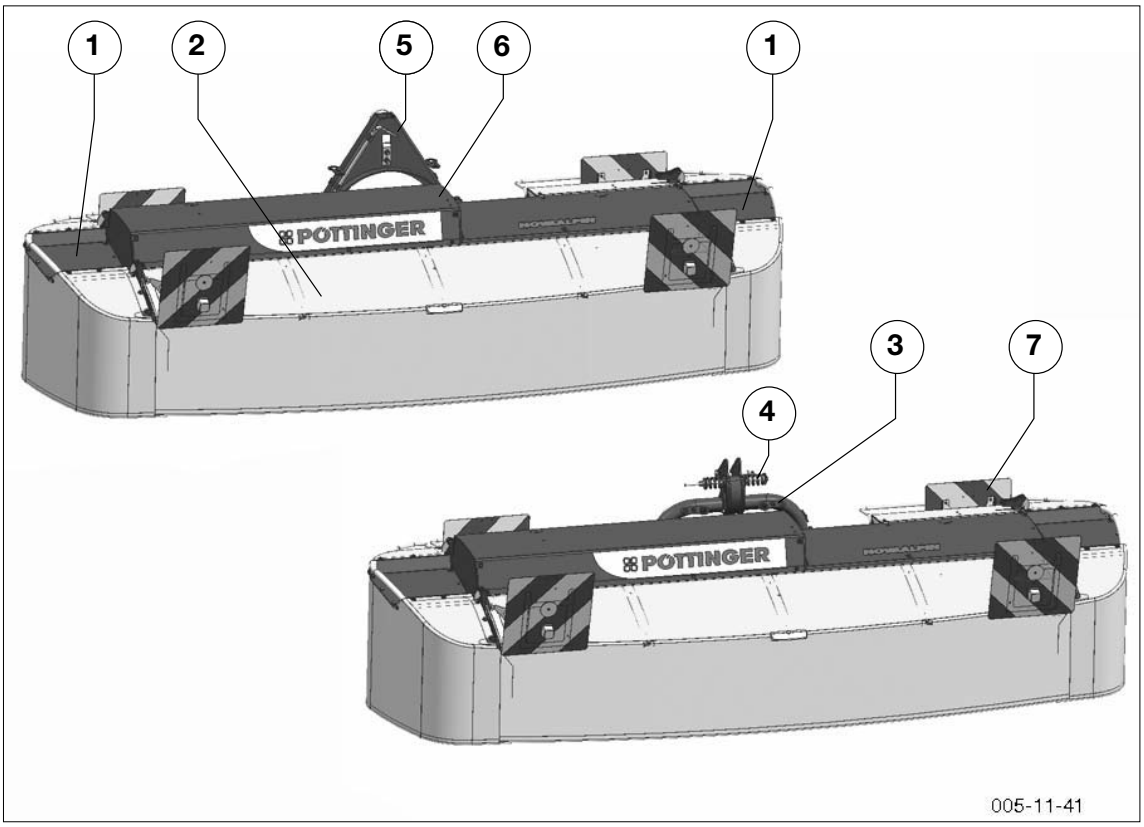



Never reach into the crushing danger area as long as parts may move.




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

## Overview




**Descriptions:**

1) Swivelling side protection (variants: mechanical / hydraulic)
2) Swivelling front protection
3) 3-point mounting frame (attachment type B)
4) Collision protection (only attachment type B)
5) Mounting frame for Weiste A-frame (attachment type T)
6) Drive
7) Warning signs with boundary lighting* (optional extra)

## Versions

| Name: | Attachment type | | Description |
|---|---|---|---|
| NOVAALPIN 301 | B | 3-point mounting frame | Working width: 3,04 m |
| | T | Mounting frame for Weiste A-frame | Working width: 3,04 m |
| NOVAALPIN 261 | B | 3-point mounting frame | Working width: 2,64 m |
| | T | Mounting frame for Weiste A-frame | Working width: 2,64 m |
| NOVAALPIN 221 | B | 3-point mounting frame | Working width: 2,20 m |
| | T | Mounting frame for Weiste A-frame | Working width: 2,20 m |

* not available for NOVAALPIN 221 B/T

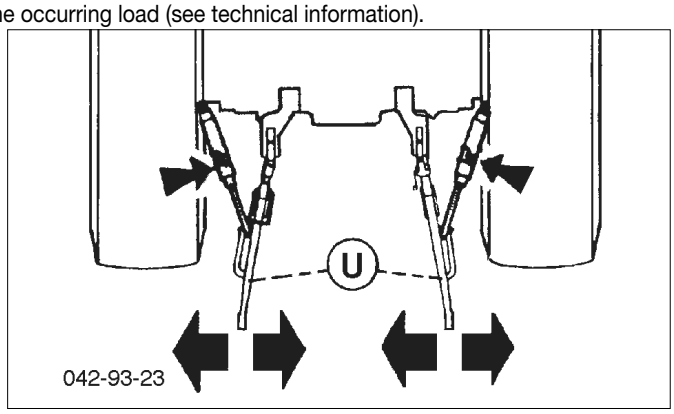
## Tractor

To operate this machine the following tractor requirements are necessary:

- Tractor power: upto 80kW/109HP
  and max. 4000 kg tare weight
- Linkage: Lower link Kat. I / II or Weiste A-frame Kat. II
  Lifting gear with single-action hydraulics (lifting gear must be switched to neutral for operation!)
- Connections: see table “Necessary hydraulic and power connections”

## Lifting gear (Three-point linkage)

- The tractor’s lifting gear (three-point linkage) must be designed for the occurring load (see technical information).
- The lifting struts are to be set at the same length (4) using the relevant adjusting equipment
  (See the tractor manufacturer’s operator’s manual)
- If the lifting struts on the lower linkage can be fixed in various positions, then select the back position. this will relieve the tractor’s hydraulic unit.
- The limiting chain or lower link stabilisers (5) are to be set so that the coupled implement CANNOT move sideways. (Safety measure for transportation)




## Necessary hydraulic connections

| Design | Used for | Single action hydraulic connection | Double action hydraulic connection | Identification (on the implement) |
|---|---|---|---|---|
| Standard | Side protection horizontal swing* (optional) | | X | |
| | Hydraulic lateral traversing (optional) | | X | |

| Operating pressure | |
|---|---|
| Operating pressure minimum | 170 bar |
| Operating pressure maximum | 200 bar |

**Caution!**

**Check the compatibility of the hydraulic oils before connecting the machine to the hydraulic system of your tractor.**

**Do not mix mineral oils with bio oils!**

## Necessary power connections

| Design | Used for | Pole | Volt | Power connection |
|---|---|---|---|---|
| Standard | Lighting* | 7-pin | 12 V DC | According to DIN-ISO 1724 |

* not available for NOVAALPIN 221.

## Attach machine to tractor (type B)

**Beware!**

**Danger of being crushed between tractor and mower when activating lifting gear.**

**Before activating lifting gear, ensure no one is standing in area around mower.**

**Do not stand between tractor and mower when using lifting gear external control.**

**NOTE**

**Ensure easy access. Always place hoses, cable and chains outside the coupling area.**

**Beware!**

**For front lifting gear with double-action hydraulic circuit (Danger of damage)!**

**Remedy:**

- Switch control valve to single-action
- Convert front lifting gear to single-action working (bypass line) through a specialist work shop.

*** When mower is attached to tractor, servo must not be moved to "LOWER"**

1) Bring tractor up to mounting frame and couple lower link to three-point linkage.

2) Secure tractor against rolling away.

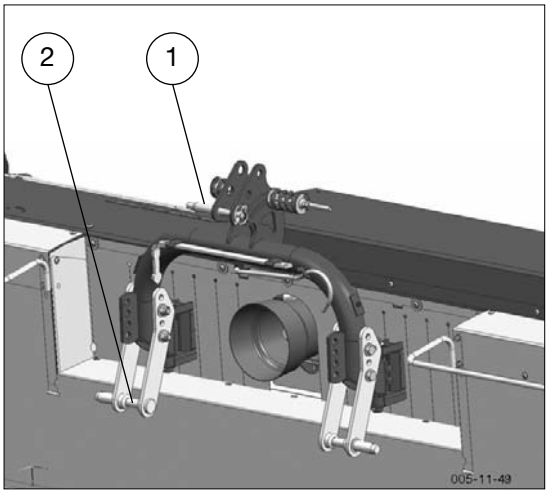
3) Couple upper link (1) to three-point linkage.

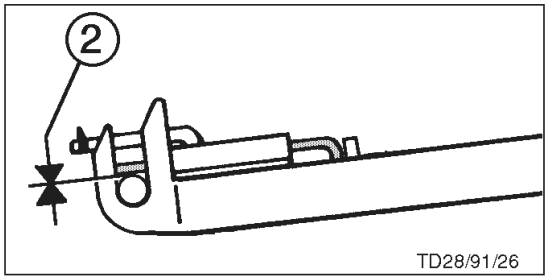
4) Secure position pins with linch pin.
   Secure lower link pins (2) free of play.

**NOTE**

**Mower can be adapted to tractor if there are attaching problems. details in chapter "Adapting Mower to Tractor"**

5) Centrally fix lower link, free of play, to prevent mower from swinging out sideways.



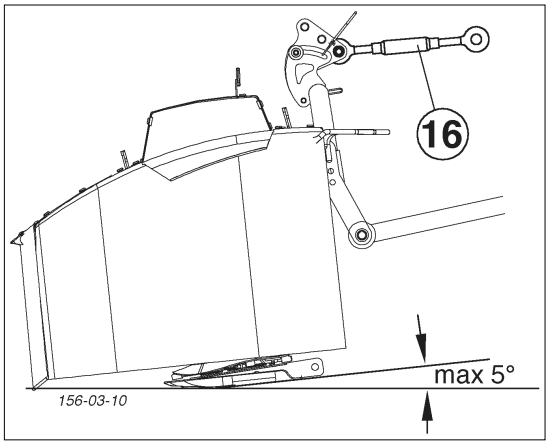

**Beware!**

**No one is to stand between tractor and mower if tractor is not secured against rolling using the parking brake and/or wheel chocks!**

**Direct everyone out of danger area between tractor and mower. Any assistants present can act as guides and must keep themselves at an appropriately safe distance from this danger area.**

6) Set the upper link (16) length so that cutter bar is horizontal or inclined slightly forward. The cutting height can be varied via the angle of inclination. The maximum incline must not exceed 5o.

7) Lift mower to transport position.



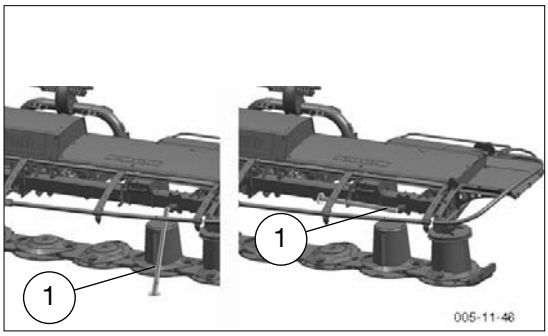

**Beware!**

**The support stand must be swivelled up before operation. Otherwise it can become damaged or cause damage to the cutter bar!**

**NOTE**

**To use the support stand, it is necessary to open the front protection.**

8) Release support stand (1), swivel up 90o, latch and secure.



## Attach machine to tractor (type T)

**Beware!**

**Danger of being crushed between tractor and mower when using lifting gear.**

**Before using lifting gear, ensure no one is standing in area around mower.**

**Do not stand between tractor and mower when using lifting gear external control.**

**NOTE**

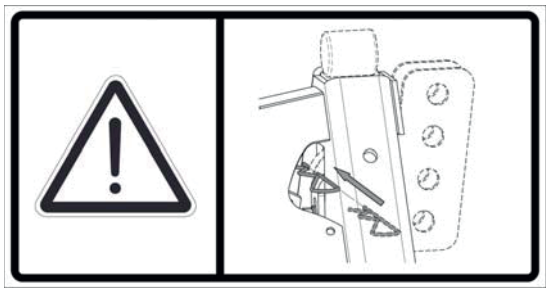
**Ensure easy access. Always place hoses, cable and chains outside the coupling area.**

1) Bring tractor carefully up to mounting frame in order to place the Weiste A-frame in the implement holder

2) Lift Weiste A-frame until locking hooks engage.

3) Secure tractor against rolling away.

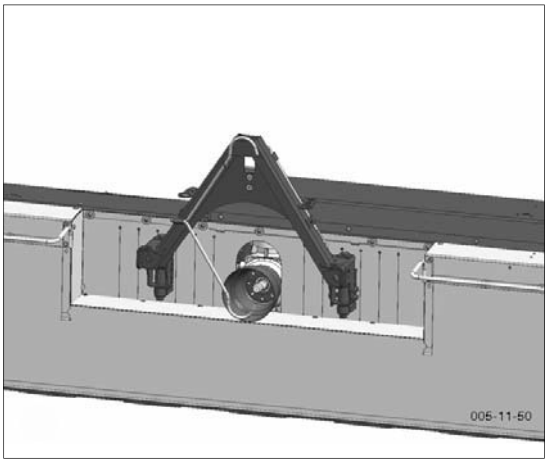
4) Secure Weiste A-frame in implement holder using a spring pin.

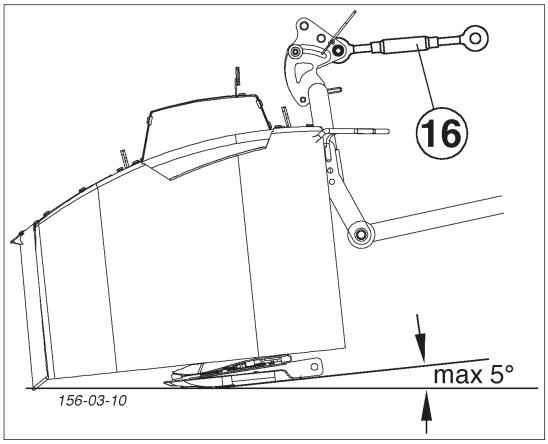


5) Centrally fix lower link, free of play, to prevent mower from swinging out sideways.

6) Set the upper link (16) length so that the cutter bar is horizontal or inclined slightly forward. The cutting height can be varied via the angle of inclination. The maximum incline must not exceed 5o.

7) Lift mower to transport position.




**Beware!**

**No one is to stand between tractor and mower if tractor is not secured against rolling by the parking brake and/or wheel chocks!**

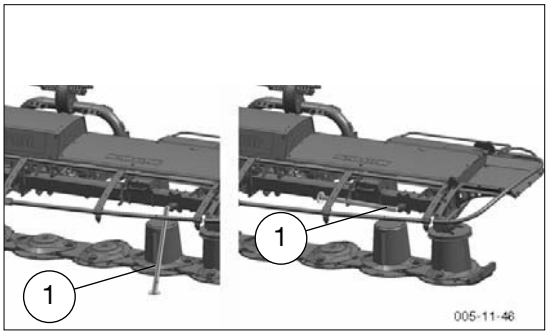
**Direct everyone out of danger area between tractor and mower. Any assistants present can act as guides and must keep themselves at an appropriately safe distance from this danger area.**

**Beware!**

**The support stand must be pushed in before operation. Otherwise it can be damaged or cause damage to the cutter bar!**

**NOTE**

**To use support stand, it is necessary to open front protection.**




8) Release support stand (1), turn it 90o, latch and secure.

## Take particularly care before attaching Weiste A-frame (type T)!

**Beware!**

**For front lifting gear with double-action hydraulic circuit (danger of damage)!**

**Remedy:**

- switch servo to single-action
- switch front lifting gear to single-action function (bypass line) through specialist workshop.

*** When mower is attached to tractor, hydraulic servo (ST) must not be moved to "LOWER".**

*** After an operating error of this kind, immediately reset adjustable plate (P1).**

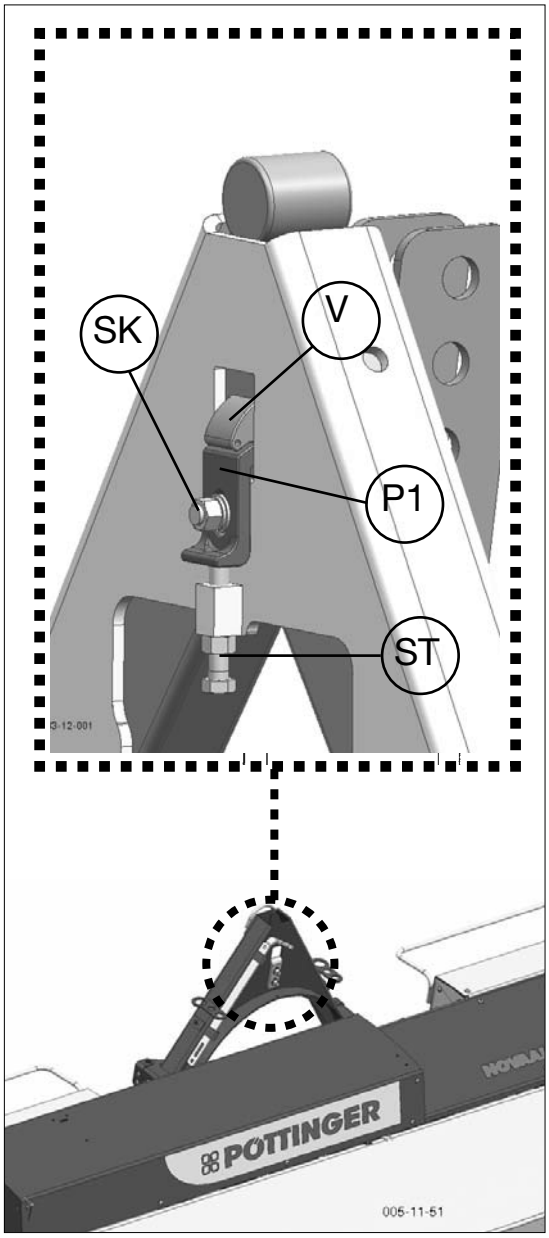
**Replace damaged parts beforehand.**

**The following could happen after an operator's error:**

- position of plate (P1) could change in slot making gap to locking hook (V) too wide.
- locking hook (V) breaks
- both levers on load relieving unit will be damaged
- springs could be damaged.

Reset adjustable plate (P1)

1) Loosen nuts and bolts (SK) enough to enable altering the plate (P1) position using the adjusting screw (ST).
2) Couple mower to tractor's lifting gear
3) Position adjustable plate (P1) so that locking hook can still be unlatched. Distance to hook should be as close as possible.
4) Uncouple mower from tractor's lifting gear.
5) Tighten bolts (SK) to 65 Nm.




**Be alert!**

**The following danger sources exist with a tractor's double-acting front lifting gear: The maximum lowering depth for a mower is set using springs. If this maximum is exceeded with the lifting gear, then springs are under great tension.**

**This can lead to the springs or the linch pin breaking, putting anyone in the danger area at risk of injury!**

## Coupling the cardan shaft

**Be alert!**

**Danger of being caught by and coiling around a working cardan shaft with faulty or damaged protection covering.**

**Only work with a fully protected cardan shaft. This means the cardan shaft safeguard rail, the protective shield on the tractor and the protective cap on the machine.**

**Always secure the cardan shaft protection coverings against rotating by hooking up the holding chains. Hook up the holding chains so that a cardan shaft swivel range is guaranteed in all operating positions. Ensure the holding chains are not able to become caught in the machine or tractor components.**

**Immediately replace damaged or faulty cardan shaft parts with genuine parts. Ensure that only a specialist workshop carriers out cardan shaft repairs.**

1) Secure p.t.o. against accidental starting.

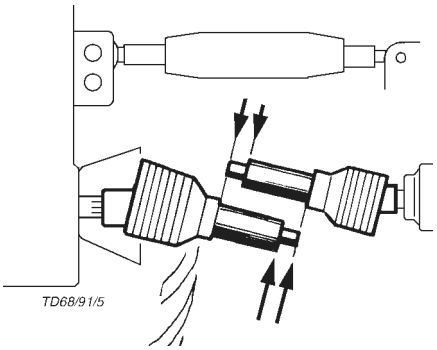
2) Secure the tractor against rolling.

3) Clean and grease the p.t.o. connection.

4) Push the cardan shaft lock onto the p.t.o. until the lock noticeably engages.

**Note!**

**Refer to the chapter “Initial cardan shaft coupling to the tractor” in the supplement of this operator’s manual, particularly the section “Cardan shaft”.**




5) Secure the protection covering holding chain.

## Connecting hydraulic hoses

**Be alert!**

**Danger of infection from hydraulic fluid spurting out under high pressure and penetrating the skin.**

**Ensure that the hydraulic system for tractor and machine is depressurized**

**When connected, the hydraulic hoses must give slightly with all movements without tensioning, kinking or rubbing when travelling around curves, and must not scuff against components.**

**Seek medical advice immediately when injured.**

1) Secure p.t.o. against accidental starting.

2) Secure the tractor against rolling.

3) Select appropriate servo.

4) Move the servo to “Neutral” position.

5) Clean hydraulic plug with a lint-free cloth.

6) Push the hydraulic plug into the servo socket until the plug noticeably engages.

**Take note:**

**Environment: When working with or on the hydraulics, ensure that fluid does not escape into the surrounding area.**

## Hook up relieving springs

The relieving spring tension determines the bearing pressure on the ground. The mower should sit on the ground with a total weight of approx. 150 kg.

**Take note:**

**If tractor is fitted with an electronic lifting gear control, then relieving springs are not necessary when bearing pressure of mower can be minimized to 150 kg with it!**

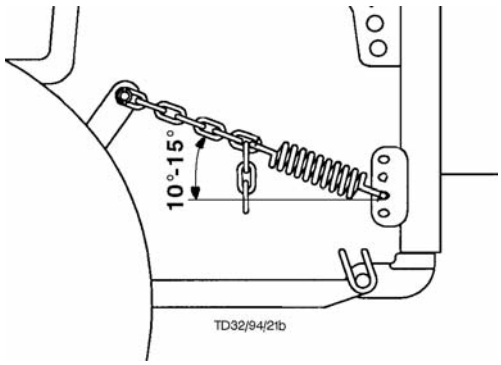
1) Secure p.t.o. against accidental starting.

2) Secure the tractor against rolling.

3) Lift mower to transport position in order to create the smallest distance between the connection points of the relieving springs.

4) Hook springs into left and right hole plate on mower, and stretch to tractor (upper link, chain links sit sideways on tractor) at an angle of between 10o .... 15o.

   (More spring tension = less bearing weight)




5) Lower machine to working position

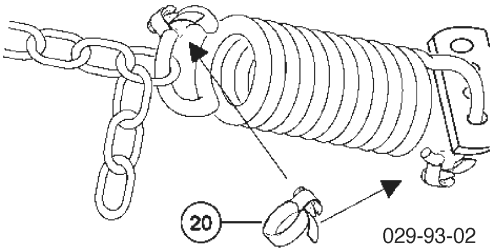
6) Check the spring tension angle. The angle should be between 10o and 15o.

7) Check bearing pressure of both sides of machine. This should be about 75 kg.

   (e.g. using tension scales or by lifting one side of the machine and estimating the weight.)

**Take note:**

**Fit hose clamps to springs. Position them so that checking is not required with each connection. Repositioning is then only necessary when tractors are changed.**



## Check functions (trial run)

**Beware!**

**Danger of being caught by mower discs and/or blades.**

**Guide everyone out of the danger area around the mower before conducting a trial run.**

**Start the trial run from the tractor driver's seat.**

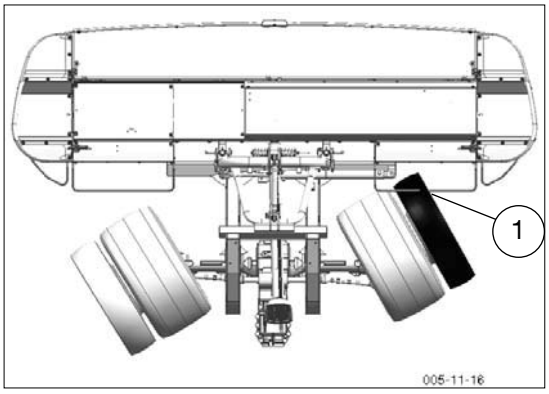
**Turn p.t.o. off immediately when anything conspicuous occurs.**

### Tractor lifting gear:

Check whether the tractor wheels collide with the mower with any sharp steering turns (1) in the working and transport positions.

If this should happen, and there is no suitable coupling position possible with the included coupling console, then a special lower linkage console must be fitted. Please contact your specialist service centre for this.

If the machine is fitted with a lateral traversing, then pay attention to this function during the trial run.




### Drive:

Compare the given nominal speed on the mower with the p.t.o. r.p.m. of the tractor.

The mower can be tuned to a p.t.o. r.p.m. of 540 r.p.m, 750 r.p.m. or 1000 r.p.m.

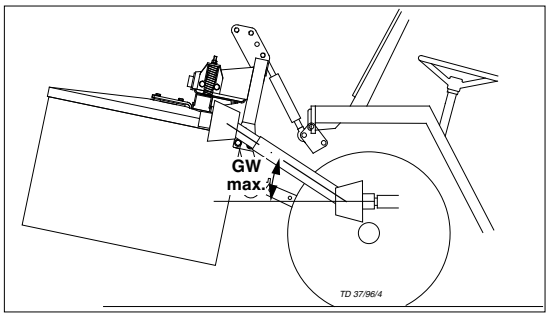
Change the tractor p.t.o. direction of rotation to suit the mower (mower direction of rotation: see sticker on the mower).

If tractor p.t.o. drive cannot be suitably adjusted, the direction of rotation can be adapted by changing the angular gear on the mower. Refer to "Adapting angular gear" for this.

Increase the p.t.o. r.p.m. smoothly up to the nominal speed.

Check for unusual noises and vibrations

Check the maximum possible cardan shaft angles in the transport and working positions. The maximum possible angle can be obtained from the cardan shaft operating instructions and must not be exceeded.




**Take note:**

**If the machine is fitted with the optional "Hydraulic lateral traversing", then it is to be checked also during this trial run.**

### Hydraulic functions:

If the machine is fitted with a hydraulic lateral traversing, then this function is to be checked!

If the machine is fitted with a hydraulic side protection horizontal swing, then this function is to be checked!

**Beware!**

**Guide everyone out of the danger area around the mower before conducting a trial run.**

**Start the trial run from the tractor driver's seat.**

## Transport run

Transport runs are defined as runs from and to the working location. If such runs include public streets and lanes, then the machine must be in a roadworthy condition. The light fittings should be fixed vertically to the road and must function. If the lighting is dirty then it must be cleaned.

**Take note!**

**Before every transport run (except Novaalpin 221 B/T):**

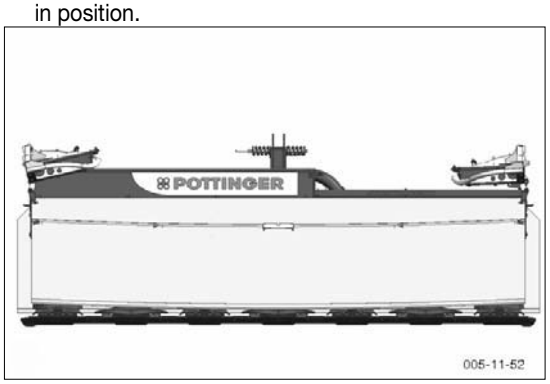
**Swing side protection up. Total mower width is thereby reduced to less than 3m.**

1) Lift the mower to transport position.

2) Plug the cable for the lighting unit into the tractor. Check that lighting unit is functioning properly.

3) Lift the mower to transport position.

4) Swing the left and right side protection up and secure in position.

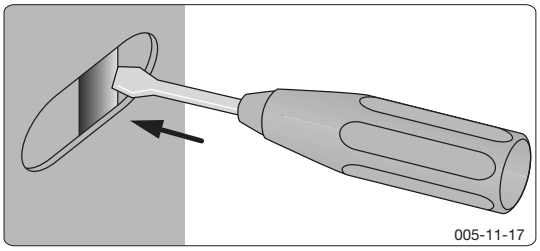



5) If the mower is fitted with the optional "Hydraulic lateral traversing", this is to be set so that the maximum legal transport width is not exceeded. Secure the hydraulic lateral traversing during transport on roads with the mechanical stop valve!

**Side protection swinging:**

Manually

Push an accessory tool (e.g. screw driver) into the protection lock and then swing the protection up until it engages in the holder.




**Note:**

**Unlock the front protection also with an accessory tool.**

**To push the support stand in it is necessary to swing the front protection up!**

Hydraulic (Optional)

Activate the servo for the hydraulic side protection horizontal swing until both protective units are raised completely. The horizontal swing speed is set by altering the oil flow. Reduce the oil flow to slow down the horizontal swing mechanism and to take care of your additional feature.

## General working

**For your safety:**

**Before operation, check the machine and the tractor for traffic and operating safety. Only move the tractor and machine when correctly coupled to each other!**

**When starting and during travel ensure that no one is in the turning and swinging range of the machine, or in the danger area between tractor and machine.**

**Performance, steering and braking capabilities are influenced by coupled or mounted machines and ballast. When travelling through curves consider the machine's wide overhang and balance weight, and take care that there are sufficient steering and braking capabilities.**

**Always adapt your speed and driving manner to the surrounding conditions. Particularly when travelling through hills and valleys, and cross travel on slopes, avoid any sudden curve manoeuvres. Otherwise danger of tipping over exists!**

**Pay attention to the machine's dimensions. Particularly with low or narrow passages, bridges and power lines or other obstacles. Observe the legally permissible transportation dimensions!**

**Never leave the driver's seat during the run!**

**Passengers are not permitted to travel on the machine!**

**With safety-relevant machine variations or its operational behaviour, shut the machine down immediately!**

**Before leaving the tractor, secure it, turn the motor off and take the ignition key with you.**

**No one is to be between the tractor and the machine if the tractor has not been secured against rolling with the parking brake and/or wheel chocks!**

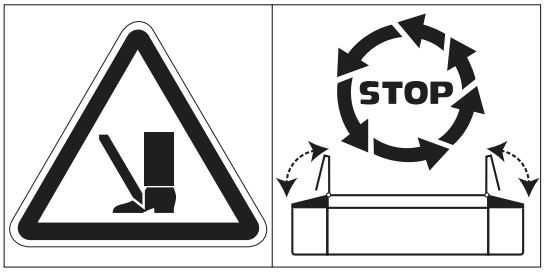
**BE ALERT**

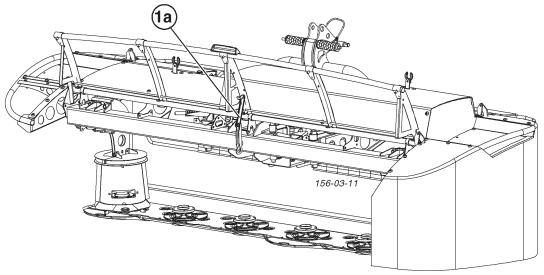
**When mowing, watch out for obstacles like large stones (e.g. boundary stones) or pieces of wood. These could damage the mower. Drive accordingly, carefully and slowly, if you are not sure whether the area to be mowed is free of such obstacles.**

**Consider the best way to mow the area. That way unnecessary turning procedures can be avoided.**

## Protective coverings

Close protective coverings before every operation. Replace any damaged protective curtains.



## Mowing

**Beware!**

**Danger due to ejected objects e.g. stones.**

**Swing protective coverings down before operation.**

**Guide everyone out of the danger area around the mower and make sure that no one is able to enter the danger area. Be particularly careful on stony fields or near roads and lanes.**

**Beware!**

**Danger due to high noise level during mowing.**

**Always wear hearing protection when the noise level in the tractor cabin reaches 90 dB(A) or higher.**

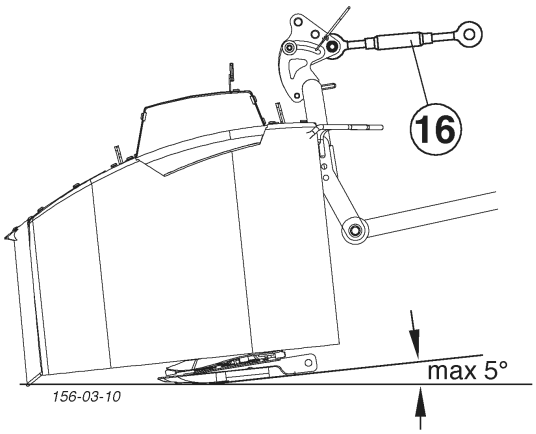
- For mowing, slowly couple the p.t.o. away from the crop then bring the cutter discs up to full speed.
- Through a smooth, even r.p.m. increase, noises caused in the p.t.o. free-running system are avoided.
- The speed adapts itself according to terrain conditions and crop.

## Alter cutting height

**Beware!**

**Danger through being caught by the cutter blades! The upper link must only be operated when the p.t.o. drive is turned off and the tractor is stopped!**

- Cutting height adjustment takes place by adjusting the upper link (16).




## Turn-overs

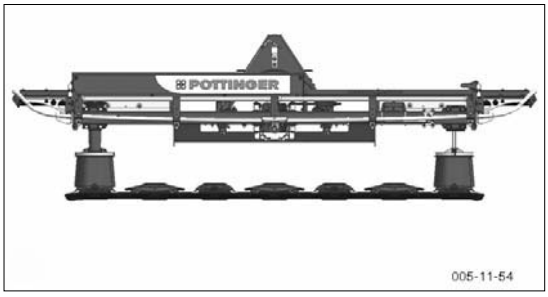
- Raise the machine for the turn- over procedure. The p.t.o. can remain turned on in the process.

## Swath former

**Novaalpin 301 B/T:**

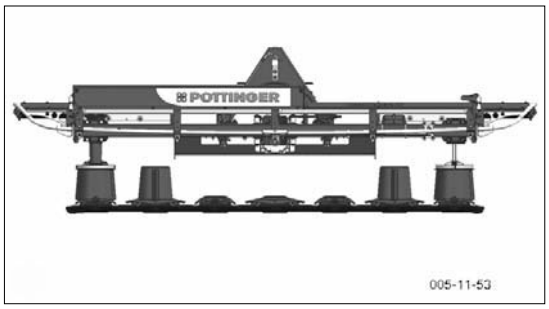
The mower's standard fitting is 2 drums.

These 2 drums form a wide swath.



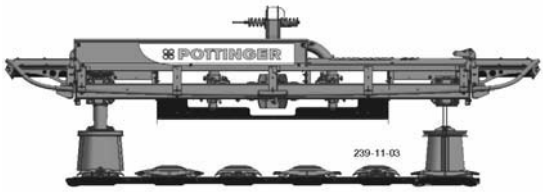

If a narrower swath is required, exchange the outside left and right cutting discs for mowing drums. These are available as optional extras.

See your sales representative for more information.

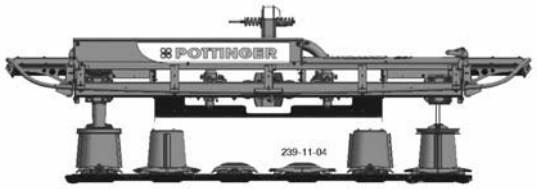



**Novaalpin 261 B/T:**

The Novaalpin 261 B/T mower is fitted with 2 drums as standard.

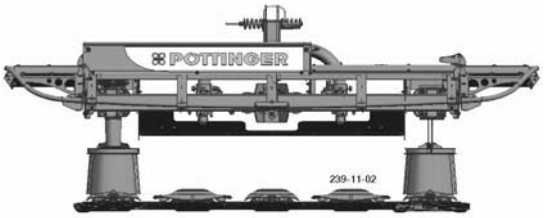



If a narrower swath is required, exchange the outside left and right cutting discs for mowing drums. These are available as optional extras.




**Novaalpin 221 B/T:**

The Novaalpin 221 B/T standard fitting is with 2 mowing drums. There is no provision for further mowing drums.



## Collision safety device

The collision protection with spring loaded pins is only provided for type B mounting frames and not for mounting frames with Weiste A-frames.

## Mechanical collision safety device,

**with spring-loaded pins (2)**

Collisions between cutter bar and obstacles when mowing can still occur even travelling carefully and slowly. Therefore, in order to prevent such damage, collision protection has been planned for the cutting device.

## Function of collision safety device

If the mower encounters an obstacle, the springloaded pin (1) is released and the cutter bar can swing back.

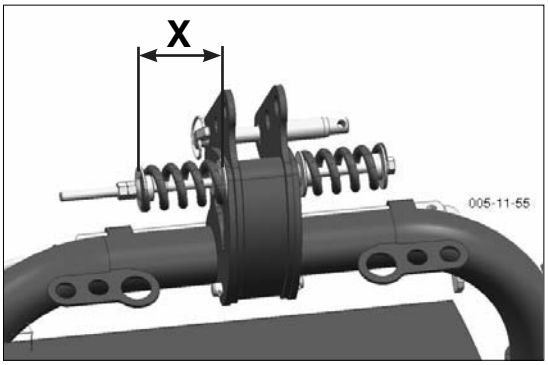
If you reverse a short distance then, the pin is relocked into position.

**Adjustment:**

In case the safety device trips to easy adjust hexagonal nut.

Setting measurement:

**X = 95 mm**

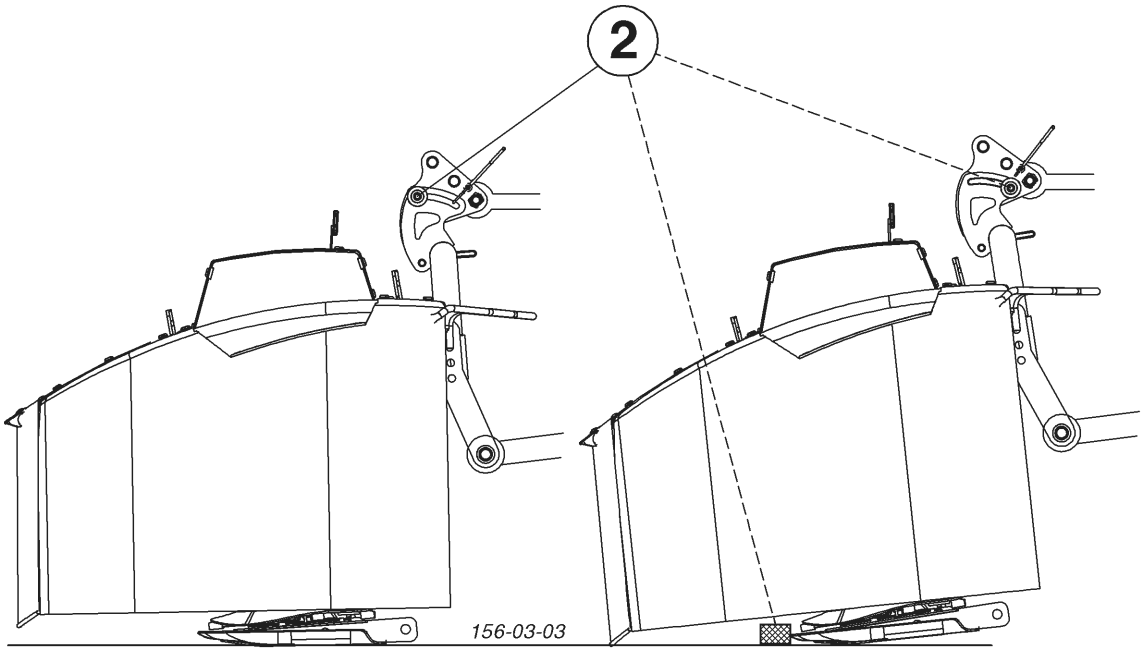



**Attention!**

**It is not the intention of the collision safety device to prevent damage to the machine when working at full speed.**

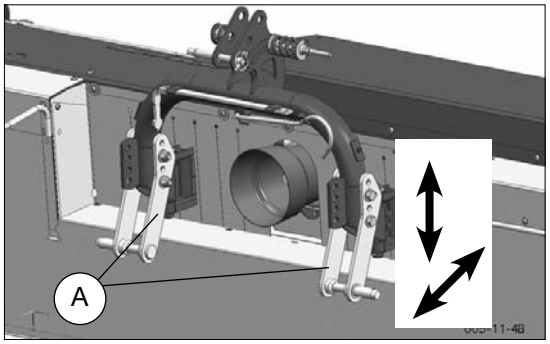
**Attention!**

**If you are not sure whether the cutting area is really free of obstacles, please work at an appropriate slow speed!**



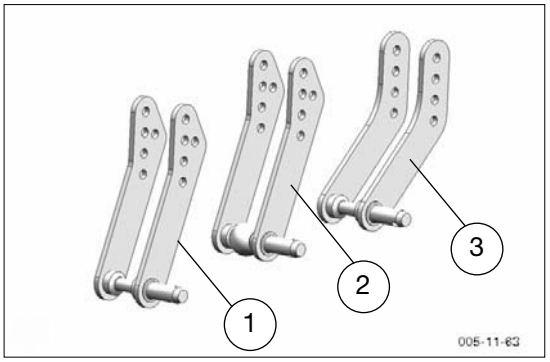
## Mounting adaptor

Mounting adaptors (1) can be attached in various positions and are to be fitted to the tractor.

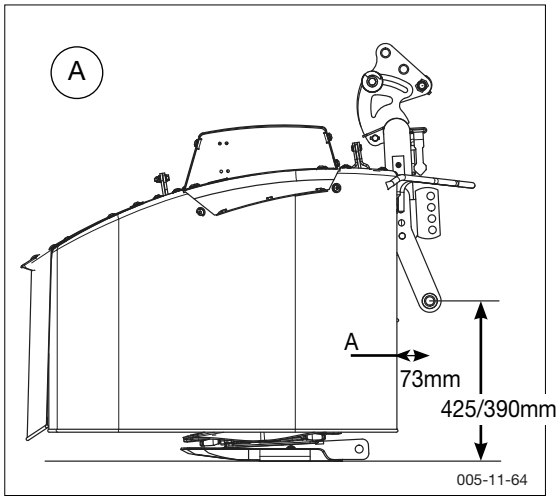



**Adaptor:**

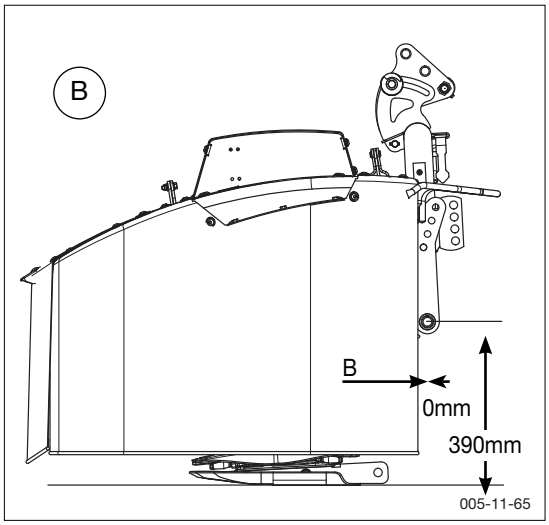
| Adaptor | Receiver | Tractor distance |
|---|---|---|
| Standard 1 | Cat I / width I<br>Cat II / width II | Distance (A) and (B)<br>(See sketches 1 and 2) |
| Option 2 | Cat II ball / width I<br>Cat II ball / width II | Distance (A) and (B)<br>(See sketches 1 and 2) |
| Option 3 | Cat I / width I<br>Cat II / width II | Distance (C)<br>(See sketch 3) |



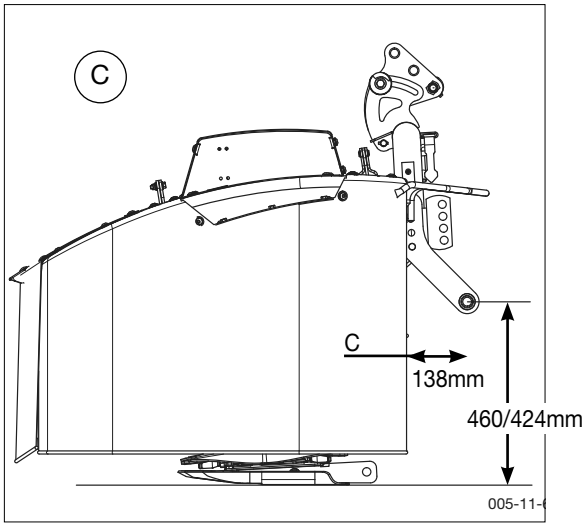

(Diagram 1)




(Diagram 2)

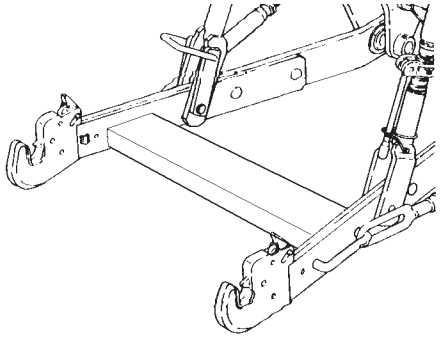



(Diagram 3)




The possibility exists of fitting onto the tractor using the mounting adaptor and gearing position.

**In every position of the lifting gear, check whether the mower (with the chosen mounting adaptors) collides with any part of the lifting gear.**




**Take note!**

**When carrying out adaptation work on the mower, turn it off and secure it against rolling or tipping!**

**If it is necessary to work on a raised mower, ensure it is secured against lowering!**

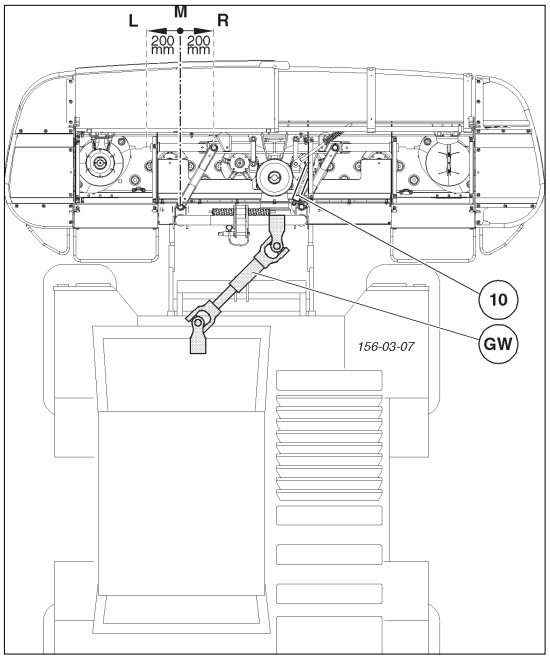
## Lateral traversing

Before initial operation check the cardan shaft length and adapt if necessary. (See chapter “Adapting the cardan shaft” also in Supplement B)

Check the cardan shaft length at every position especially with the optional “Lateral traversing” or machine lateral traversing:

**At checking positions:**

- max. lateral traverse to the left and mower in working or transport position
- max. lateral traverse to the right and mower in working or transport position

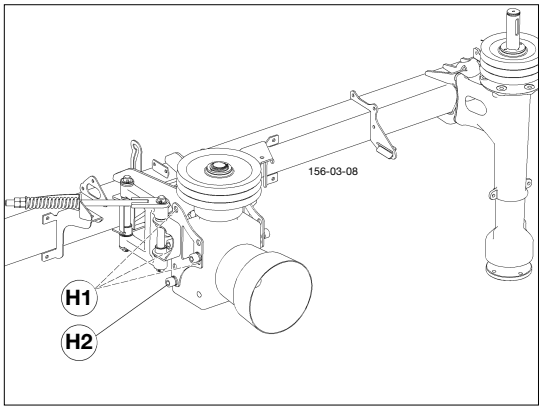


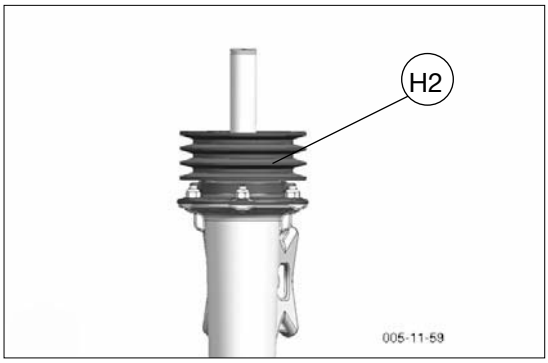

## Gearing position on mower

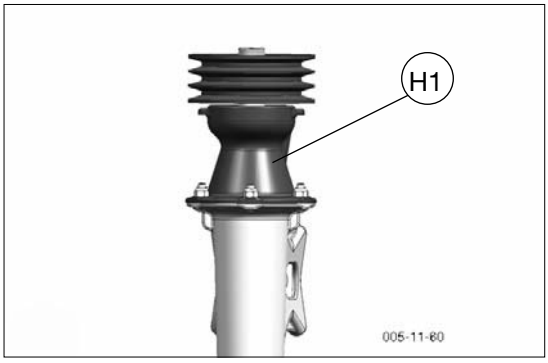
The mower’s gearing can be fitted in 2 different positions. If the cardan shaft angle is too great with the standard gearing position, then change the gearing position from H1 to H2:

**NOTE**

**With reference to the maximum possible angle, refer also to the advice in the accompanying cardan shaft manufacturer’s operating manual.**




**Take note!**

**When carrying out adaptation work on the mower, turn it off and secure it against rolling or tipping!**

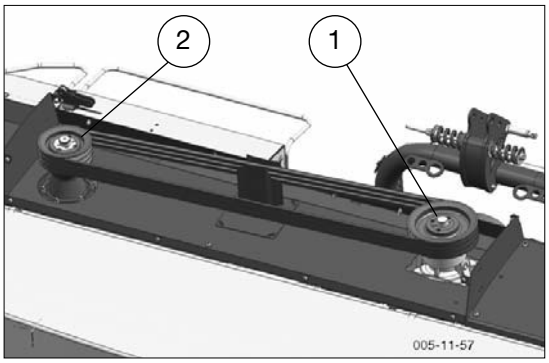
**If it is necessary to work on a raised mower, ensure it is secured against lowering!**

## Drive speed

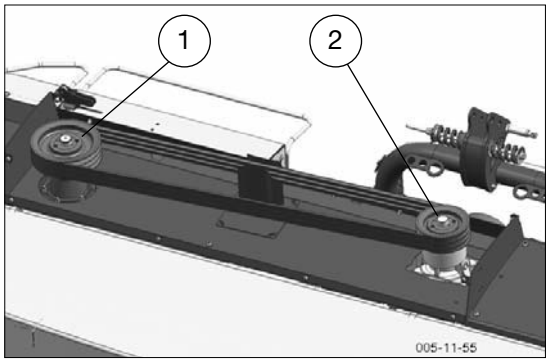
The machine drive speed can be adapted to 540 r.p.m. and 1000 r.p.m. using the V-belt pulleys included.

Fit the ø212 mm V-belt pulley (1) and the ø160 mm V-belt pulley (2) in the respective position (see example).

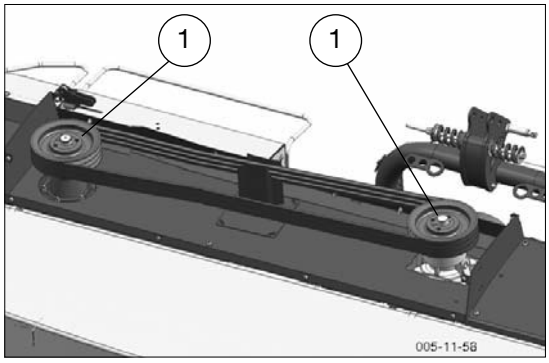
**Drive speed: 540 rpm**




**Drive speed: 1000 rpm**




**Drive speed: 750 rpm**




For a drive speed of 750 r.p.m, two 190mm V-belt pulleys (1) are required.

## Alter direction of rotation

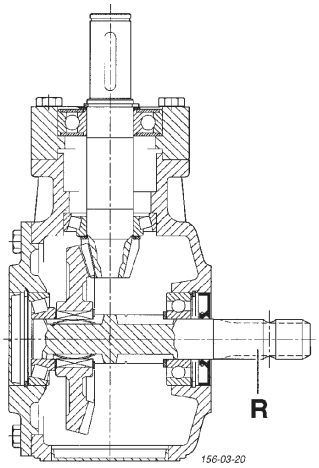
If it is not possible to change the direction of rotation of the p.t.o. shaft according to the sticker or the mower equipment on the tractor, then the direction of rotation can be altered in the angular gear.

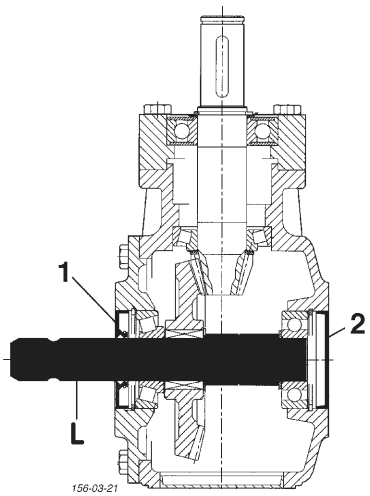
1) Drain oil from angular gear (details in chapter “Maintenance”)
2) Remove angular gear drive shaft
3) Turn angular gear drive shaft 180o and refit.

**Be advised:**

**In the course of this activity, the angular gear shaft seal (1) and the sealing cover (2) are to be replaced also (details in spare parts book).**

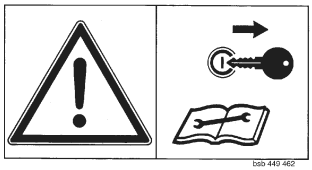
4) After reassembly, refill angular gear with oil to the correct level (details in chapter “Maintenance”).



## Safety advice

- Switch off engine prior to any adjustment, maintenance or repair work.



## General maintenance information

Please observe the infiormation below to maintain the implement in good condition even after a long period in operation:

- Re-tighten all bolts after the first hours in operation.

**The following should be checked in particular:**

Blade bolt connections at mower

Tine bolt connections at rake and tedder

### Spare parts

a. Original parts and accessories are specially designed for the implements.

b. We expressly point out that we have not tested or approved any original parts and accessories not supplied by us.

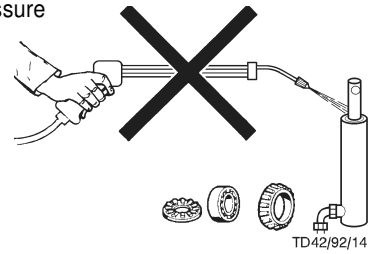
c. The installation and/or use of such products may under certain circumstances negatively modify or impair the propeties of the implement as specified in the design. Any liability on the part of the manufacturer is excluded in the event of any damage due to the use of non-original parts and accessories.

d. Any unauthorised modifications or the use of components and attachments at the implement rules out any liability on the part of the manufacturer.

## Cleaning of machine parts

Be advised! Do not use high-pressure washers for the cleaning of bearing- and hydraulic parts.

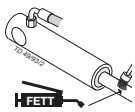
- Danger of rust!
- After cleaning, lubricate the implement according to the lubrication plan and perform a brief test run.
- Cleaning pressure being too high may damage the paint.



TD42/92/14

## Parking in the open

Clean and protect the piston rods with grease prior to longer periods parked outside.




## Winter storage

- Clean implement thoroughly prior to winter storage.
- Put up protection against weather.
- Change or top up gear oil.
- Protect exposed parts from rust.
- Lubricate all greasing points according to lubrication chart.
- Disconnect terminal, store dry and protected from frost.

## Cardans

- See information in Attachment

**Please observe the following for maintenance!**

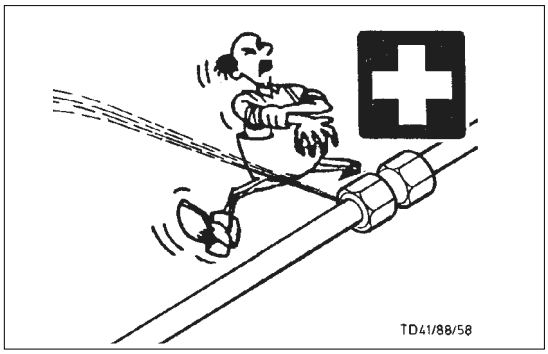
The instructions in these Operating Instructions apply.

If no particular instructions are available here, then the information in the instructions supplied by the respective cardan shaft manufacturer apply.

## Hydraulic unit

**Caution injury and infection hazard!**

Liquids discharging at high pressure may penetrate the skin. Therefore seek immediate medical help!



TD41/88/58

Make sure that the hydraulic system is suitable for the tractor before connecting the hydraulic lines.

**After the first 10 hours in operation and thereafter every 50 hours in operation**

- Check hydraulic unit and piping for leaks and if necessary re-tighten bolt connections.

**Prior to every taking into operation**

- Check hydraulic hoses for wear.

  Replace any worn or damaged hydraulic hoses immediately. The replacement hoses must meet the manufacturer's technical requirements.

Hose lines are subject to natural ageing. The period of use should not exceed 5 – 6 years.

**Safety advice**

**• Switch off engine and remove ignition key prior to any adjustment, maintenance or repair work.**

**• Only perform work underneath the implement with secure supports.**

**• Re-tighten all bolts after the first hours in operation.**

**• Only park implement on flat, firm ground.**

**Repair information**

**Please observe the repair information in the Attachment (If available).**

**Safety advice**

**Clean the coupling plug of the hydraulic hoses and the oil socket prior to each connection.**

**Note any abrasion and clamping points.**

## Cutter bar oil level check

- Under normal operating conditions, oil is to be replenished annually.

**Caution**

**Cleaning and maintenance works shall be performed only with the machine turned off and the mowing units lowered.**

**Note:**

- Carry out oil level check at operating temperature.

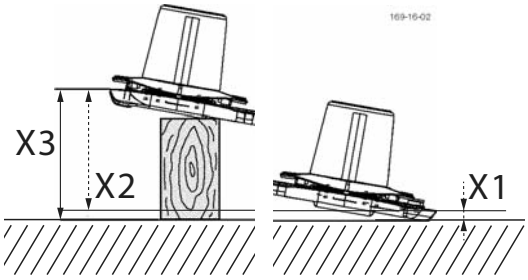
  The oil is too viscous when cold. Too much old oil sticks to the gearwheels which then gives a false reading.

**1. Lift one side of the mower bar X3 and support it.**

X3 = X2 + X1

X1 = Distance from the ground to the vats upper edge.

X2 = Distance from the vats upper edge left to the vats upper edge right.




**NOVAALPIN 301 B/T: X2 = 300 mm**

**NOVAALPIN 261 B/T: X2 = 175 mm**

**NOVAALPIN 221 B/T: X2 = 200 mm**

- The side where the oil refill screw is located remains on the ground.
- Lift the other side of the mower bar X1 and support with a suitable prop.

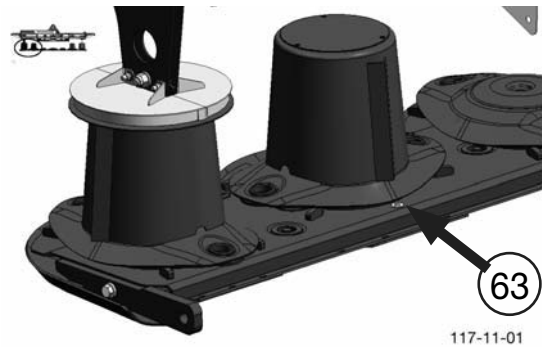
**2. Leave mower bar in this position for about 15 minutes.**

- This time is necessary to allow the oil to collect in the lower area of the mower bar.

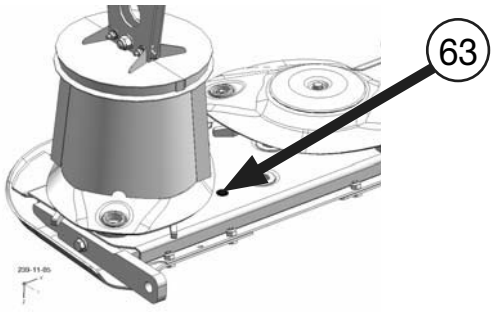
**3. Remove oil fill screw (63).**

Measure oil level through the opening (63).

**For NOVAALPIN 301 B/T:**




**For NOVAALPIN 261 B/T:**

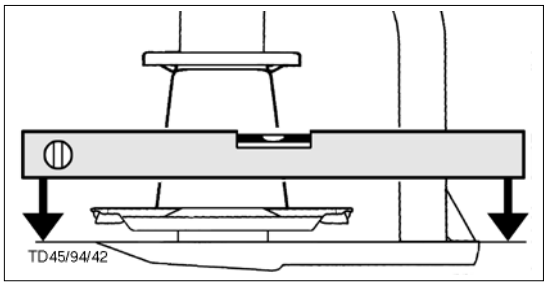



**4. Oil level check**

**Important information when measuring the oil level:**

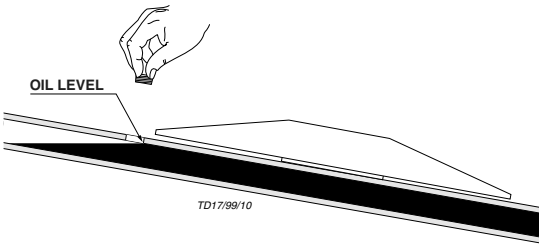
**Jack up the cutter bar depending on the length.**

**The cutter bar width must be adjusted in precise horizontal position (see image).**




**4.1 Oil level check for NOVAALPIN 221 B/T and NOVAALPIN 261 B/T**

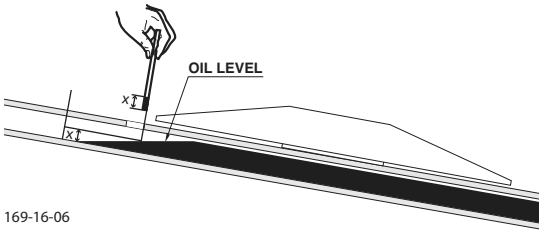
**The oil level is correct if the gear oil reaches the lower edge of the level opening (63).**



### 4.2. Oil level check for NOVAALPIN 301 B/T

**The oil level is correct if x= 16 mm.**

X is the oil level at the lower edge of the level opening (63)




### 5. Topping up oil

Complete with the missing oil quantity.

**Note**

**• Too much oil can cause the cutter bar to overheat during operation.**

**• Too little oil does not guarantee the necessary lubrication.**

## Cutter bar oil change

### Oil change

- Change oil after the first 50 operating hours or after 100 ha at the latest.

**• Change oil at operating temperature.**

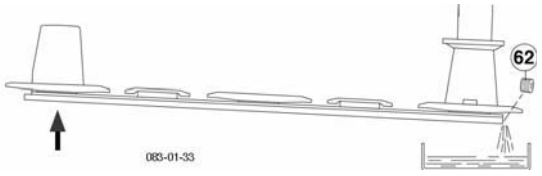
**• The oil is too viscous when cold. Too much old oil remains stuck to the gearwheels preventing the removal of any suspended matter present in the gearbox.**

**• It can take some time until the used oil has completely drained.**

**NOVAAPLIN 301 B/T: 3.0 litre SAE 90**

**NOVAAPLIN 261 B/T: 2.6 litre SAE 90**

**NOVAAPLIN 221 B/T: 2.1 litre SAE 90**



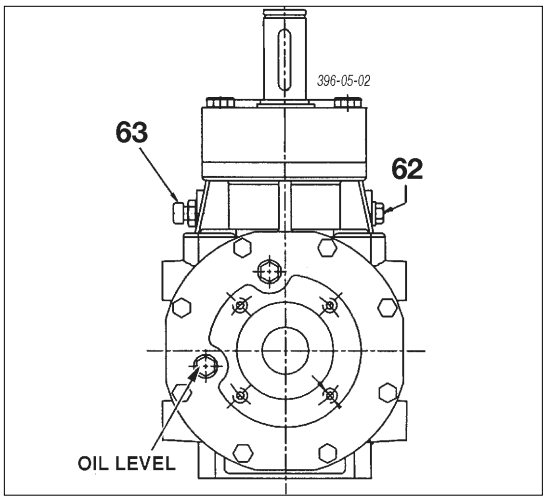

- Lift the right side of the cutter bar.
- Take out oil drain plug (62), let oil run out and dispose of waste oil correctly.

## Angular gear

- Change oil after the first 50 operating hours.

  Under normal operating conditions, oil is to be replenished annually (OIL LEVEL).
- Change oil after 100 ha at the latest.

Oil quantity: 1.4 litre SAE 90

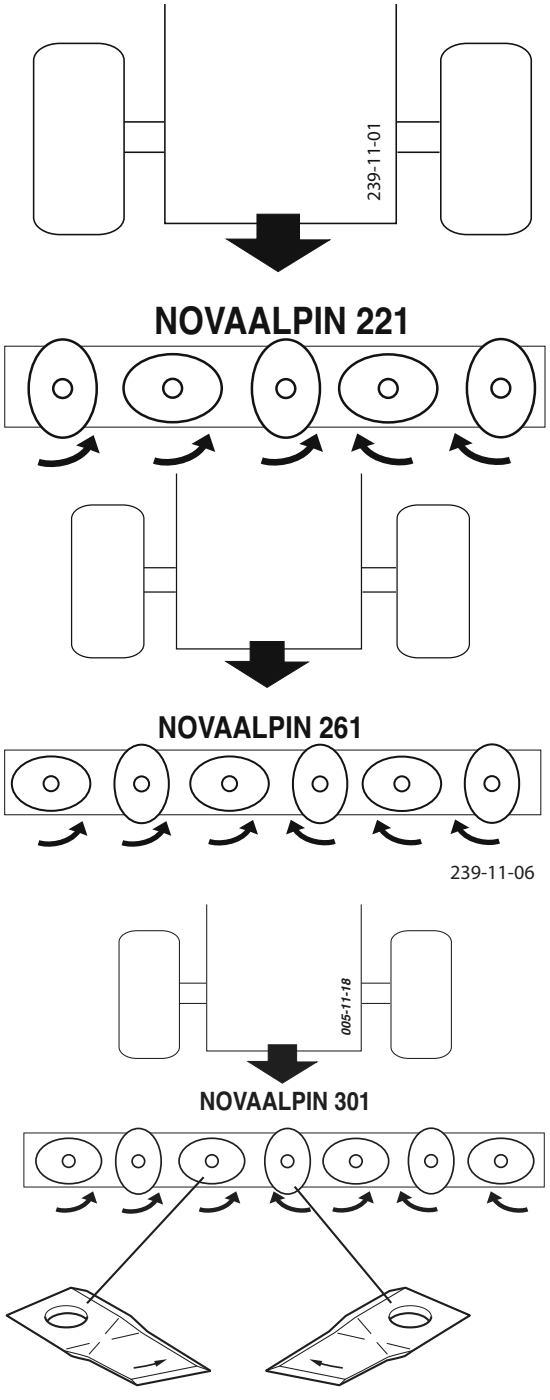


## Installing cutter blades

**Be advised!**

**The arrow on the cutter blade shows the cutter disc's direction of turn.**

**Before assembly, clean the lake from the screwing surfaces.**



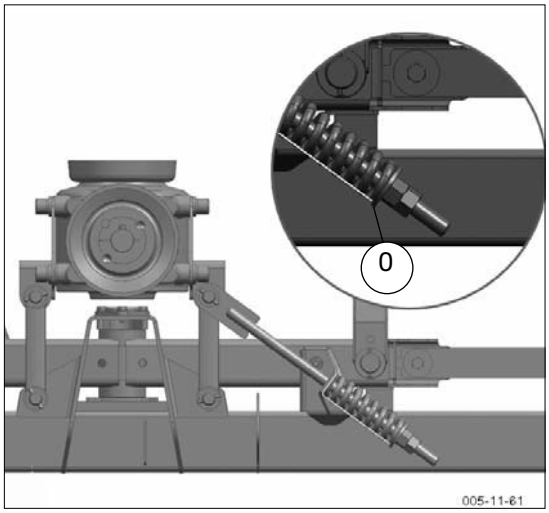

## V-belt tensioning

- When the V-belt tension is set correctly (0), the distance between the indicator and the disc is "0 mm".
- If the distance is longer, you must tension the spring accordingly.

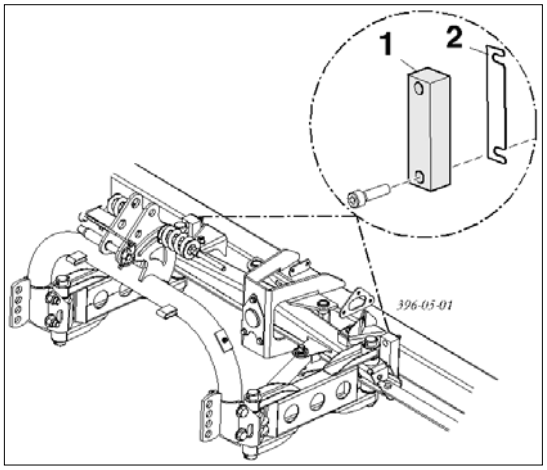
**Note:**

**This check must be performed for every blade change!**

**At least 2x / year!**




## Equalising sheet



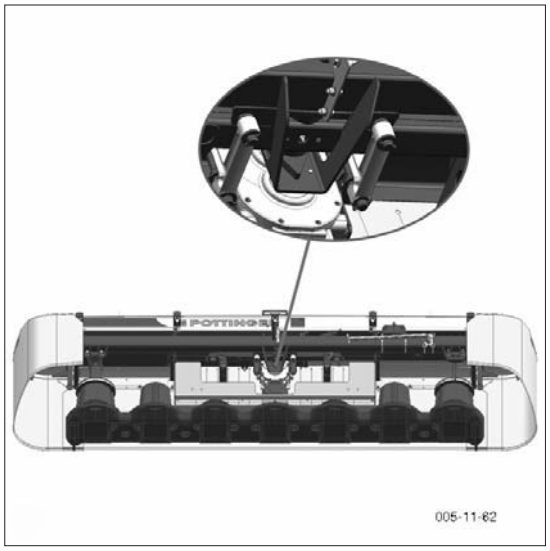

### Equalising sheet

Mount the delivered equalising sheets (2) when the sliding blocks (1) are worn off.

**Note:**

**This check must be performed at least 2x / year!**

## Lubrication




### Lubrication point

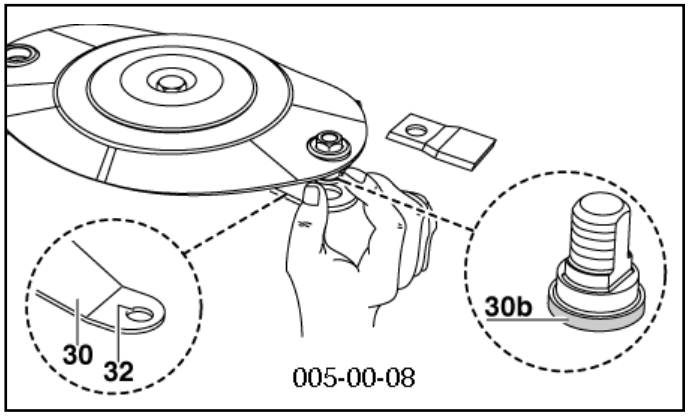
**Note:**

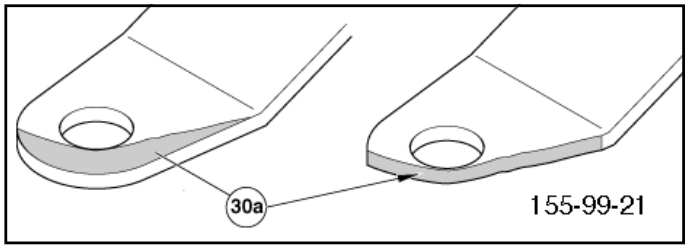
**This lubrication point must be lubricated at least 2x / year!**

**PTO shaft guarding**

- **Lubricate the cardan joint of the articulated shaft every 25h.**
- **Lubricate the slide ring every 100h.**
- **Clean and lubricate the articulated shaft before any longer standstill.**
- **For the operation in winter, grease the tube guards to prevent freezing.**

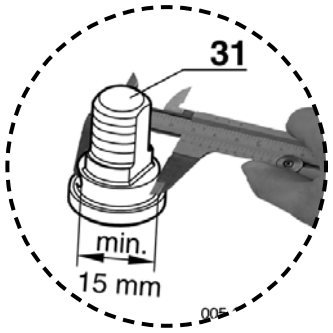
## Wear control cutting blades bracket




**The following parts are subject to wear:**

- Cutting blade brackets (30)
- Cutting blades pins (31)




**Be advised!**

**Danger of accident if wear parts are worn off.**

**Such worn off wear parts may not be used further.**

**Otherwise there is accident hazard due to fling-off pieces (e.g. cutting blades, fragments of parts. . .).**

**Procedure - Visual control**

1. **Remove the cutting blades.**
2. **Remove the feed residues and dirt**
   - around the pin (31).

**Check the cutting blades suspension for wear and other damages:**

- Before every putting into operation.
- More frequently during operation.
- Immediately after driving over a solid obstacle (e.g. stone, wood piece, metal …).
- If you hear grinding noises from the cutter bar

**Be advised!**

**There is danger of accidents if:**

**- the blade pin in the middle is worn off up to 15 mm**

**- the wear area (30a) has reached the edge of the hole.**

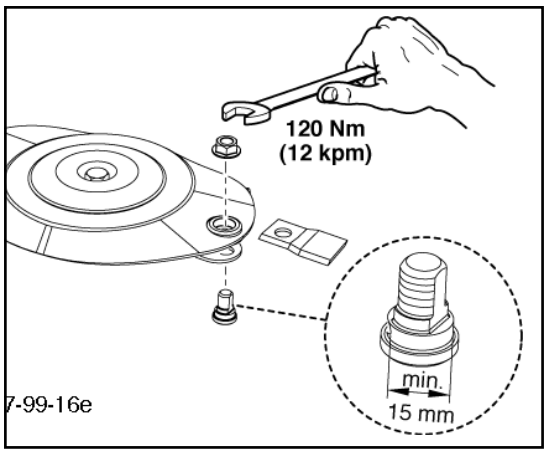
**- the lower blade pin (30b) is worn off**

**- the blade pin is no longer stable in position**

**If you find one or several wear signs, do not continue mowing.**

**Worn off parts are to be replaced with new Pöttinger original parts immediately.**

**Blade pins and nuts shall be fastened with 120 Nm.**



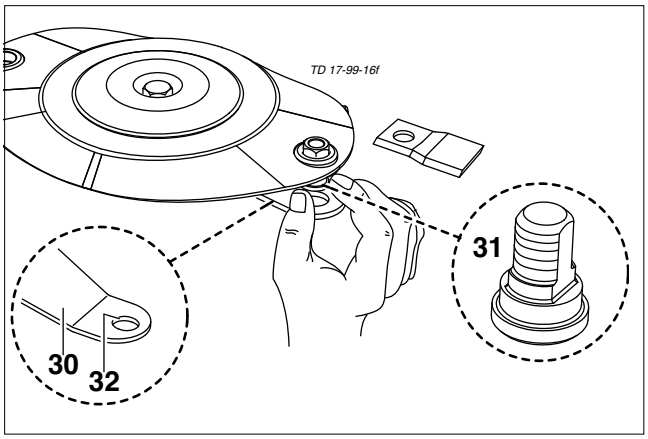
## Holder for a quick change of cutter blades

**Attention!**

**For Your Safety**

- **Regularly check that cutter blades are tightened firmly!**
- **Cutter blades on a cutter disc should wear out simultaneously (danger of imbalance).**

  **Otherwise they are to be replaced with new ones (replace in pairs).**
- **Buckled or damaged cutter blades must not be used further.**
- **Buckled, damaged and/or worn cutter blade holders (30) should not be used further.**




## Checking the mowing blade suspension

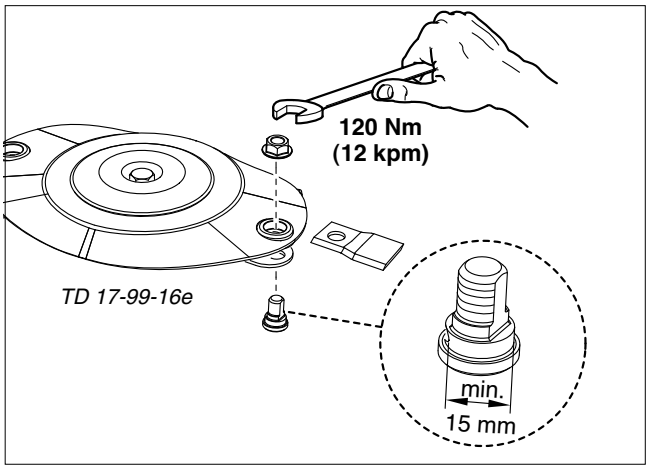
- Normal check every 50 hours.
- Check more often when mowing on stony terrain or in other difficult operating conditions.
- Check immediately after driving over a hard obstacle (e.g. stones pieces of wood, ect).

### Carry out a check

- as described in chapter „Changing the Cutter Blades“

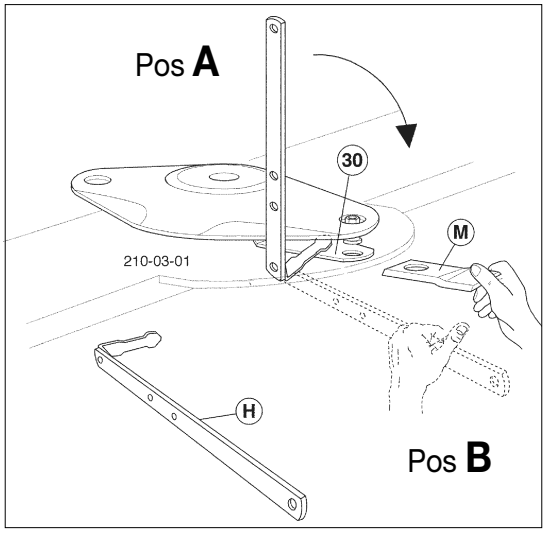
**Take note!**

**Damaged, buckled and worn out parts must not be used further (danger of accident).**

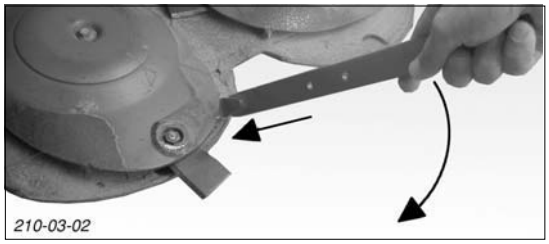


## Changing the Cutter Blades (from 2004 model)

1. **Insert lever from left or right side on the cutter disc "Pos A" until it stops.**
2. **Swing lever from "pos. A" to "pos. B" and push the movable holder (30) down.**
3. **Remove cutter blade (M)**

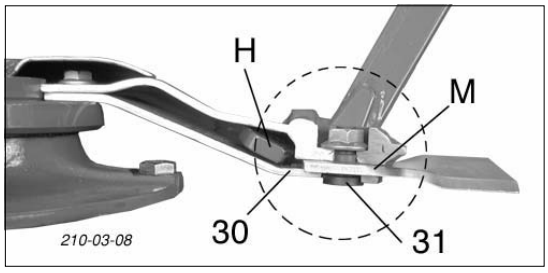



4. **Clean forage remains and dirt away.**
   - around the bolts (31) and inside the borehole (32)




5. **Check:**
- blade bolts (31) for damage, wear and fitting
- holder (30) for damage, change in position and fitting
- borehole (32) for damage.
  - Side surfaces must not show signs of deformation

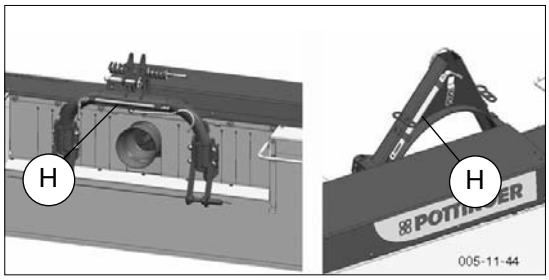
6. **Install cutter blades**

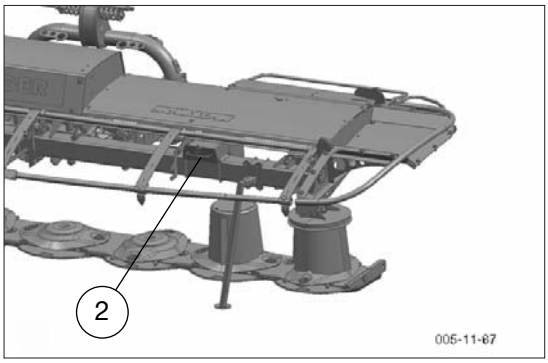



7. **Visual check! Check that blade (M) is correctly positioned between blade bolts (31) and holder (30)** (see diagram)**.**
8. **Swivel lever (H) to "A" again and remove.**

## Storing the lever

- Place and secure lever (H) in holding bracket on mounting frame after use.
- Blade box with spare blades (2)



## Technical data

| Name | NOVAALPIN 301 B/T | NOVAALPIN 261 B/T | NOVAALPIN 221 B/T |
|---|---|---|---|
| **Three-point linkage** | Kat.I/II or Weiste Kat. II | Kat.I/II or Weiste Kat. II | Kat.I/II or Weiste Kat. II |
| **Working width** | 3.04 m | 2.64 m | 2.20 m |
| **No. of cutter blades** | 7 | 6 | 5 |
| **No. of blades per disc** | 2 | 2 | 2 |
| **P.T.O.rpm** | 540 / 750 / 1000 rpm | 540 / 1000 rpm | 540 / 1000 rpm |
| **Standard weight** [1] | 495 kg | 400 kg | 370 kg |
| **Power required** | 41 kW (55 hp) | 22 kW (30 hp) | 19 kW (26 hp) |
| **Operate with tractors up to max.** | 4000 kg | 4000 kg | 4000 kg |
| **Continuous sound pressure level** | 78.3 dB(A) | 76.5 dB(A) | 76.2dB(A) |

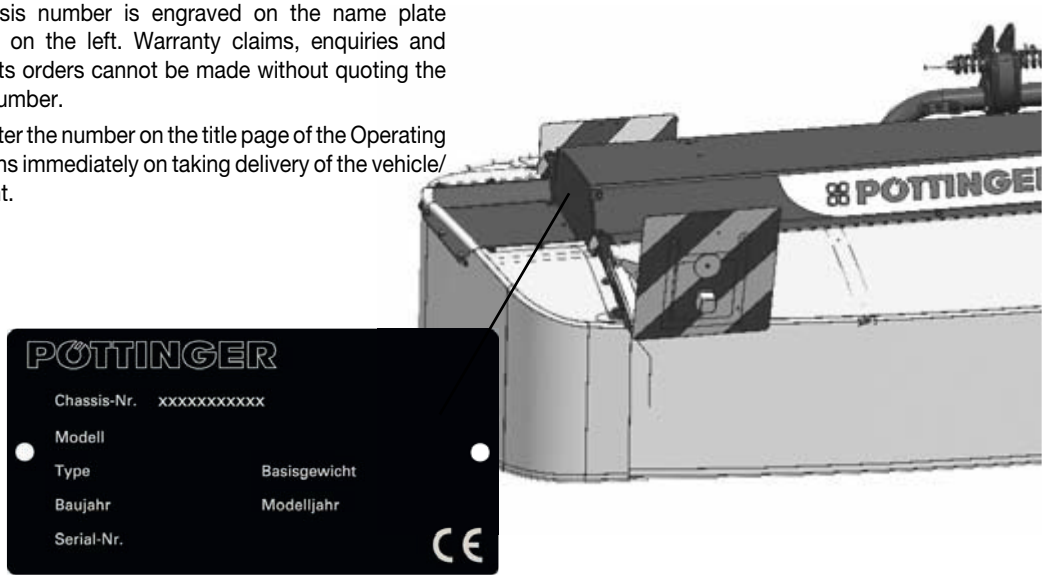
**Optional extras:**

Hydr. lateral traversing ..... 5 kg
Hydr. side protection horizontal swing ..... 10 kg
Wear and tear runners ..... 13 kg
High-cut runners ..... 47 kg
Lighting and warning signs ..... 10 kg
Attachment variant type B or type T

## Position of Vehicle Identification Plate

The chassis number is engraved on the name plate illustrated on the left. Warranty claims, enquiries and spare parts orders cannot be made without quoting the chassis number.

Please enter the number on the title page of the Operating Instructions immediately on taking delivery of the vehicle/ equipment.




## The defined use of the mower unit

The mowers referred to above are designated only for normal use during agricultural working.

- The mowing of grassland and short stemmed fodder.

  Any other uses outside of these are regarded as undefined.

  The manufacturer takes no responsibility for any resulting damage which occurs henceforth. The risk is carried by the user alone.
- The keeping of operating, service and maintenance requirements layed down by the manufacturer also come under the heading of „defined use“.

[1] Weight: Variations possible depending on machine features.

# *SUPPLEMENT*

# The original cannot be copied ...

GB

## Things will run better with genuine Pöttinger parts

**Original** inside

- **Quality and precise fitting**
  - Operating safety.
- **Reliable operation**
- **Longer lasting**
  - Economy
- **Guaranteed availability** through your Pöttinger Sales Service.

The decision must be made, ”original” or ”imitation”? The decision is often governed by price and a ”cheap buy” can sometimes be very expensive.

***Be sure you purchase the ”Original” with the cloverleaf symbol!***

PÖTTINGER

### Recommendations for work safety

All points refering to safety in this manual are indicated by this sign.

### 1. Operating instructions

a. The operating instructions are important for the correct operation of the machine. Make sure that the operating instructions are always on hand when operating the machine.

b. Keep the operating instructions as long as the machine is in your hands.

c. Pass the operating instructions on to the buyer when selling the machine.

d. Make sure that all safety and warning symbols remain attached on the machine and keep them readable. The hazard warnings provide important information for a safe operation and, thus, your safety.

### 2. Qualified personnel

a. Only persons of legal age, mentally and physically able and having been trained or familiarized accordingly must operate this machine.

b. Persons not yet trained or familiarized or under training must only operate this machine under the supervision of an experienced person.

c. Inspection, setting and repair work must only be performed by authorized persons.

### 3. Repair work

a. These instructions only refer to service, maintenance and repair operations the user is able to carry out without assistance. Any work beyond this scope has to be carried out at authorized workshops only.

b. Repairs on the electrical and hydraulic system, preloaded springs, pressure accumulators, etc. require sufficient knowledge, correct tools and protective clothing and, thus, must only be performed at authorized workshops.

### 4.) Defined use

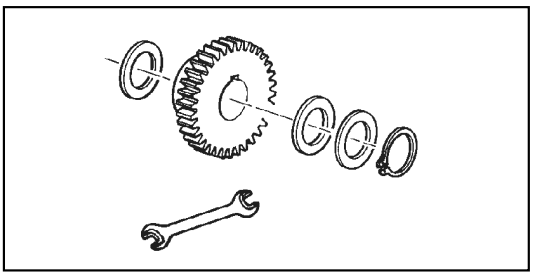
a. See "Technical Data".

b. The keeping of operating, service and maintenance requirements layed down by the manufacturer also come under the heading of "defined use".

### 5.) Spare parts

a. The **original components and accessories** have been designed especially for these machines and appliances.

b. We want to make it quite clear that components and accesories that have not been supplied by us have not been tested by us.



c. The installation and/or use of such products can, therefore, negatively change or influence the construction characteristics of the appliance. We are not liable for damages caused by the use of components and accessories that have not been supplied by us.

d. Alterations and the use of auxiliary parts that are not permitted by the manufacturer render all liability invalid.

### 6.) Protection devices

a. All protection devices must remain on the machine and be maintained in proper condition. Punctual replacement of worn and damaged covers is essential.

### 7.) Before starting work

a. Before commencing work, the operator must be aware of all operating devices and functions. The learning of these is too late after having already commenced operation!

b. The vehicle is to be tested for traffic and operating safety before each operation.

### 8.) Asbestos

a. Certain sub-supplied components of the vehicle may contain asbestos due to technical reasons. Observe the warning on spare parts.

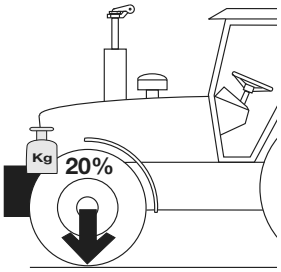
### 9.) Transport of persons prohibited

a. The transport of persons on the machine is not permitted.

b. The machine may only be driven on public roads when in the position stipulated for road transport.

### 10.) Driving ability with auxiliary equipment

a. The towing vehicle is to be sufficiently equiped with weights at the front or at the rear in order to guarantee the steering and braking capacity (a minimum of 20% of the vehicle's tare weight on the front axle).




b. The driving ability is influenced by ground conditions and by the auxiliary equipment. The driving must be adapted to the corresponding terrain and ground conditions.

c. When driving through curves with a connected appliance, observe the radius and swinging mass of the appliance.

d. When travelling in a curve with attached or semimounted implements, take into account the working range and swing mass of the implement!

### 11.) General

a. Before attaching implement to three-point linkage, move system lever into a position whereby unintentional raising or lowering is ruled out!

b. Danger of injury exists when coupling implement to tractor!

c. Danger of injury through crushing and cutting exists in the three-point linkage area!

d. Do not stand between tractor and implement when using three-point linkage external operation!

e. Attach and detach drive shaft only when motor has stopped.

f. When transporting with raised implement, secure operating lever against lowering!

g. Before leaving tractor, lower attached implement to the ground and remove ignition key!

h. Nobody is to stand between tractor and implement without tractor being secured against rolling using parking brake and/or wheel chocks!

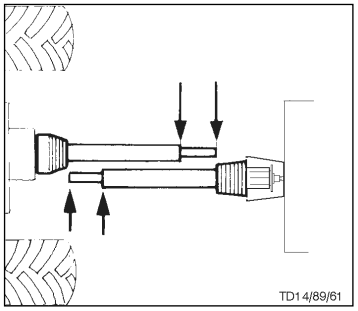
i. For all maintenance, service and modification work, turn driving motor off and remove universal drive.

### 12.) Cleaning the machine

a. Do not use high-pressure washers for the cleaning of bearing- and hydraulic parts.

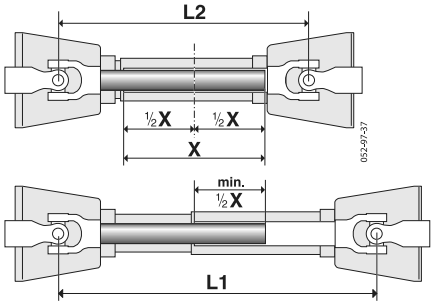
## Matching driveshaft to tractor

To determine the actual length required, hold the two halves of the driveshaft side by side.



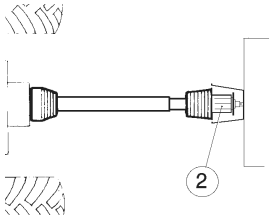

### Procedure for cutting to length

- To determine length required, set implement in closest working position (L2) to tractor, hold driveshaft halves side by side and mark off.




**Important!**

- Note the maximum operating length (L1)
  - Try to attain the greatest possible shaft overlap (min. ½ X)!
- Shorten inside and outside tube guard by the same amount.
- Fit torque limiter (2) of drive shaft to implement end of driveshaft!

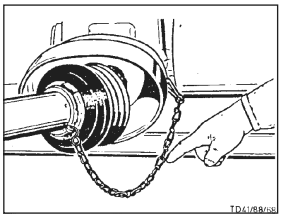



- Always check that drive shaft locks are securely engaged before starting work.

### Retaining chain

- Use chain to prevent tube guard from rotating.

  Take care that chain does not impede driveshaft pivoting.

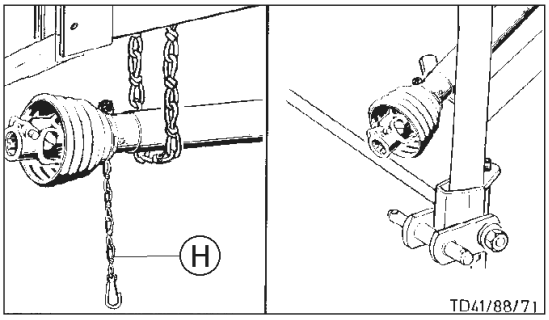



## Rules for working

Never exceed the maximum p. t. o. speed when using the implement.

- When the p.t.o. is switched off, the implement hitched up may not stop at once.

  Do not go close to the implement until all motion has stopped; only then may work be done on it.
- When the implement ist parked, either remove the driveshaft and store it, or secure it with a chain. Do not use retaining chain (H) for this.



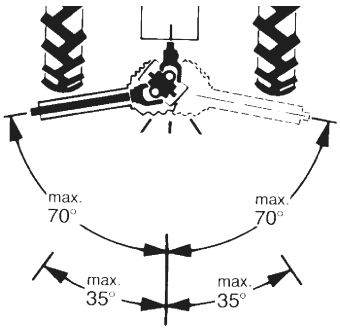

### Wide-angle joint:

Maximum angle of deflection when working/stationary: 70°

### Standard joint :

Maximum angle of deflection when stationary: 90°

Maximum angle of deflection when working: 35°

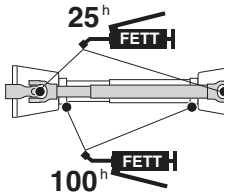



**Maintenance**

**Replace worn-out covers/guards at once.**

- Grease universal joint with a trademark grease every hours of operation.
- Grease slide protection with a trademark grease every 100 hours of operation.
- Before any extended period of non-use, clean and lubricate driveshaft.

  For winter working, grease the tube guards, to avoid them freezing together.




**Important!**

**Only use the indicated or accompanying drive shaft, otherwise the right to claim under guarantee for any possible damage does not exist.**

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# Lubricants

## Edition 2013

The performance and the lifetime of the farm machines are highly depending on a careful maintenance and application of correct lubricants. our schedule enables an easy selection of selected products.

The applicable lubricants are symbolized (eg. “III”). According to this lubricant product code number the specification, quality and brandname of oil companies may easily be determined. The listing of the oil companies is not said to be complete.

Gear oils according to operating instructions - however at least once a year.

- Take out oil drain plug, let run out and duly dispose waste oil.

Before garaging (winter season) an oil change and greasing of all lubricating points has to be done. Unprotected, blanc metal parts outside (joints, etc.) have to be protected against corrosion with a group "Iv" product as indicated on the reverse of this page.

Corrosion protection: Fluid 466

| **Lubricant indicator** | **I** |  | **III** |  | **V** | **VI** | **VII** |
|---|---|---|---|---|---|---|---|
| required quality level niveau | HYDRAULIKöL HLP DIN 51524 Teil 2<br><br>See notes:<br>*<br>**<br>*** | motor oil SAE 30 according to API CD/SF | gear oil, SAE 90 resp. SAE 85 W-140 according to API-GL 4 or API-GL 5 | lithium grease | transmission grease | complex grease | gear oil SAE 90 resp. SAE 85 W-140 according to API-GL 5 |

| Company | I | (II) | III | (IV) | V | VI | VIII | NOTATIONS |
|---|---|---|---|---|---|---|---|---|
| AGIP | OSO 32/46/68<br>ARNICA 22/46 | MOTOROIL HD 30<br>SIGMA MULTI 15W-40<br>SUPER TRACTOROIL UNIVERS. 15W-30 | ROTRA HY 80W-90/85W-140<br>ROTRA MP 80W-90/85W-140 | GR MU 2 | GR SLL<br>GR LFO | - | ROTRA MP 80W-90<br>ROTRA MP 85W-140 | * The international specification J 20 A is necessary for compound operation with wet brake tractors.<br>** HLP-(D) + HV hydraulic oils<br>*** HLP + HV hydraulic oils with a vegetable oil basis, biodegradable and therefore environmentally friendly. |
| ARAL | VITAM GF 32/46/68<br>VITAM HF 32/46 | SUPER KOWAL 30 MULTI TURBORAL<br>SUPER TRAKTORAL 15W-30 | GETRIEBEÖL EP 90 GETRIEBEÖL HYP 85W-90 | ARALUB HL 2 | ARALUB FDP 00 | ARALUB FK 2 | GETRIEBEÖL HYP 90 | |
| AVIA | AVILUB RL 32/46<br>AVILUB VG 32/46 | MOTOROIL HD 30<br>MULTIGRADE HDC 15W-40 TRACTAVIA HF<br>SUPER 10 W-30 | GETRIEBEÖL MZ 90 M MULTIHYP 85W-140 | AVIA MEHRZWECKFETT<br>AVIA ABSCHMIERFETT | AVIA GETRIEBEFLIESSFETT | AVIALUB SPEZIALFETT LD | GETRIEBEÖL HYP 90 EP MULTIHYP 85W-140 EP | |
| BAYWA | HYDRAULIKÖL HLP 32/46/68 SUPER 2000 CD-MC *<br>HYDRA HYDR. FLUID * HYDRAULIKÖL MC 530 ** PLANTOHYD 40N *** | SUPER 2000 CD-MC<br>SUPER 2000 CD<br>HD SUPERIOR 20 W-30<br>HD SUPERIOR SAE 30 | SUPER 8090 MC<br>HYPOID 80W-90<br>HYPOID 85W-140 | MULTI FETT 2<br>SPEZIALFETT FLM<br>PLANTOGEL 2 N | GETRIEBEFLIESSFETT NLGI 0<br>RENOLIT DURAPLEX EP 00 PLANTOGEL 00N | RENOPLEX EP 1 | HYPOID 85W-140 | |
| BP | ENERGOL SHF 32/46/68 | VISCO 2000<br>ENERGOL HD 30<br>VANELLUS M 30 | GEAR OIL 90 EP<br>HYPOGEAR 90 EP | ENERGREASE LS-EP 2 | FLIESSFETT NO<br>ENERGREASE HTO | OLEX PR 9142 | HYPOGEAR 90 EP<br>HYPOGEAR 85W-140 EP | |
| CASTROL | HYSPIN AWS 32/46/68 HYSPIN AWH 32/46 | RX SUPER DIESEL 15W-40 POWERTRANS | EPX 80W-90<br>HYPOY C 80W-140 | CASTROLGREASE LM | IMPERVIA MMO | CASTROLGREASE LMX | EPX 80W-90<br>HYPOY C 80W-140 | |
| ELAN | HLP 32/46/68<br>HLP-M M32/M46 | MOTORÖL 100 MS SAE 30 MOTORÖL 104 CM 15W-40 AUSTROTRAC 15W-30 | GETRIEBEÖL MP 85W-90 GETRIEBEÖL B 85W-90 GETRIEBEÖL C 85W-90 | LORENA 46<br>LITORA 27 | RHENOX 34 | - | GETRIEBEÖL B 85W-90 GETRIEBEÖL C 85W-140 | |
| ELF | OLNA 32/46/68<br>HYDRELF 46/68 | PERFORMANCE 2 B SAE 30 8000 TOURS 20W-30 TRACTORELF ST 15W-30 | TRANSELF TYP B 90 85W-140 TRANSELF EP 90 85W-140 | EPEXA 2<br>ROLEXA 2<br>MULTI 2 | GA O EP<br>POLY G O | MULTIMOTIVE 1 | TRANSELF TYP B 90 85W-140 TRANSELF TYP BLS 80 W-90 | |
| ESSO | NUTO H 32/46/68<br>NUTO HP 32/46/68 | PLUS MOTORÖL 20W-30 UNIFARM 15W-30 | GEAROIL GP 80W-90 GEAROIL GP 85W-140 | MULTI PURPOSE GREASE H | FIBRAX EP 370 | NEBULA EP 1<br>GP GREASE | GEAR OIL GX 80W-90<br>GEAR OIL GX 85W-140 | |
| EVVA | ENAK HLP 32/46/68<br>ENAK MULTI 46/68 | SUPER EVVAROL HD/B SAE 30 UNIVERSAL TRACTOROIL SUPER | HYPOID GA 90<br>HYPOID GB 90 | HOCHDRUCKFETT LT/SC 280 | GETRIEBEFETT MO 370 | EVVA CA 300 | HYPOID GB 90 | |
| FINA | HYDRAN 32/46/68 | DELTA PLUS SAE 30<br>SUPER UNIVERSAL OIL | PONTONIC N 85W-90 PONTONIC MP 85W-90 85W-140<br>SUPER UNIVERSAL OIL | MARSON EP L 2 | NATRAN 00 | MARSON AX 2 | PONTONIC MP 85W-140 | |
| FUCHS | • TITAN HYD 1030<br>• AGRIFARM STOU MC 10W-30<br>• AGRIFARM UTTO MP<br>• PLANTOHYD 40N *** | • AGRIFARM STOU MC 10W-30<br>• TITAN UNIVERSAL HD | • AGRIFARM GEAR 80W90<br>• AGRIAFRM GEAR 85W-140<br>• AGRIFARM GEAR LS 90 | • AGRIFARM HITEC 2<br>• AGRIFARM PROTEC 2<br>• RENOLIT MP<br>• RENOLIT FLM 2<br>• PLANTOGEL 2-N | • AGRIFARM FLOWTEC 000<br>• RENOLIT SO-GFO 35<br>• RENOLIT DURAPLEX EP 00<br>• PLANTOGEL 00N | • RENOLIT DURAPLEX EP 1 | • AGRIFARM GEAR 8090<br>• AGRIFARM GEAR 85W-140<br>• AGRIFARM GEAR LS90 | |
| GENOL | HYDRAULIKÖL HLP/32/46/68 HYDRAMOT 1030 MC * HYDRAULIKÖL 520 **<br>PLANTOHYD 40N *** | MULTI 2030<br>2000 TC<br>HYDRAMOT 15W-30 HYDRAMOT 1030 MC | GETRIEBEÖL MP 90<br>HYPOID EW 90<br>HYPOID 85W-140 | MEHRZWECKFETT<br>SPEZIALFETT GLM<br>PLANTOGEL 2 N | GETRIEBEFLIESSFETT<br>PLANTOGEL 00N | RENOPLEX EP 1 | HYPOID EW 90<br>HYPOID 85W-140 | |
| MOBIL | DTE 22/24/25<br>DTE 13/15 | HD 20W-20<br>DELVAC 1230<br>SUPER UNIVERSAL 15W-30 | MOBILUBE GX 90<br>MOBILUBE HD 90<br>MOBILUBE HD 85W-140 | MOBILGREASE MP | MOBILUX EP 004 | MOBILPLEX 47 | MOBILUBE HD 90<br>MOBILUBE HD 85W-140 | |
| RHG | RENOLIN B 10/15/20 RENOLIN B 32 HVI/46HVI | EXTRA HD 30<br>SUPER HD 20 W-30 | MEHRZWECKGETRIEBEÖISAE90<br>HYPOID EW 90 | MEHRZWECKFETT<br>RENOLIT MP<br>DURAPLEX EP | RENOSOD GFO 35 | RENOPLEX EP 1 | HYPOID EW 90 | |

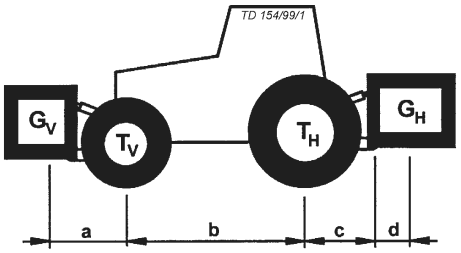
| Company | I | (II) | III | (IV) | V | VI | VIII | NOTATIONS |
|---|---|---|---|---|---|---|---|---|
| SHELL | TELLUS S32/S46/S68 TELLUS T 32/T46 | AGROMA 15W-30<br>ROTELLA X 30<br>RIMULA X 15W-40 | SPIRAX 90 EP<br>SPIRAX HD 90<br>SPIRAX HD 85/140 | RETINAX A<br>ALVANIA EP 2 | SPEZ. GETRIEBEFETT H SIMMNIA GREASE O | AEROSHELL GREASE 22 DOLIUM GREASE R | SPIRAX HD 90<br>SPIRAX HD 85W-140 | * The international specification J 20 A is necessary for compound operation with wet brake tractors.<br>** HLP-(D) + HV hydraulic oils<br>*** HLP + HV hydraulic oils with a vegetable oil basis, biodegradable and therefore environmentally friendly. |
| TOTAL | AZOLLA ZS 32, 46, 68 EQUIVIS ZS 32, 46, 68 | RUBIA H 30<br>MULTAGRI TM 15W-20 | TOTAL EP 85W-90<br>TOTAL EP B 85W-90 | MULTIS EP 2 | MULTIS EP 200 | MULTIS HT 1 | TOTAL EP B 85W-90 | |
| VALVOLINE | ULTRAMAX HLP 32/46/68<br>SUPER TRAC FE 10W-30*<br>ULTRAMAX HVLP 32 **<br>ULTRAPLANT 40 *** | SUPER HPO 30<br>STOU 15W-30<br>SUPER TRAC FE 10W-30<br>ALL FLEET PLUS 15W-40 | HP GEAR OIL 90<br>oder 85W-140<br>TRANS GEAR OIL 80W-90 | MULTILUBE EP 2<br>VAL-PLEX EP 2<br>PLANTOGEL 2 N | RENOLIT LZR 000<br>DEGRALUB ZSA 000 | DURAPLEX EP 1 | HP GEAR OIL 90<br>oder 85W-140 | |
| VEEDOL | ANDARIN 32/46/68 | HD PLUS SAE 30 | MULTIGRADE SAE 80/90<br>MULTIGEAR B 90<br>MULTIGEAR C SAE 85W-140 | MULTIPURPOSE | - | - | MULTIGEAR B 90<br>MULTI C SAE 85W-140 | |
| WINTERSHALL | WIOLAN HS (HG) 32/46/68<br>WIOLAN HVG 46 **<br>WIOLAN HR 32/46 ***<br>HYDROLFLUID * | MULTI-REKORD 15W-40<br>PRIMANOL<br>REKORD 30 | HYPOID-GETRIEBEÖL<br>80W-90, 85W-140<br>MEHRZWECKGETRIEBEÖL<br>80W-90 | WIOLUB LFP 2 | WIOLUB GFW | WIOLUB AFK 2 | HYPOID-GETRIEBEÖL<br>80W-90, 85W-140 | |
| MOTOREX | COREX HLP 32 46 68**<br>COREX HLPD 32 46 68**<br>COREX HV 32 46 68**<br>OEKOSYNT 32 46 68*** | EXTRA SAE 30<br>FARMER TRAC 10W/30 | GEAR OIL UNIVERSAL<br>80W/90<br>GEAR OIL UNIVERSAL<br>85W/140 | FETT 176 GP<br>FETT 190 EP<br>FETT 3000 | FETT 174 | FETT 189 EP<br>FETT 190 EP<br>FETT 3000 | GEAR OIL UNIVERSAL<br>80W/90<br>GEAR OIL UNIVERSAL<br>85W/140 | |

## Combination of tractor and mounted implement

The mounting of implements on the front or rear three point linkage shall not result in exceeding the maximum permissible weight, the permissible axle loads and the tyre load carrying capacities ot the tractor. The front axle of the tractor must always to be loaded with at least 20 % of the unladen weight of the tractor.

Make sure before buying an implement that these conditions are fulfilled by carrying out the following calculations or by weighing the tractor/implement combination.

### Determination of the total weight, the axle loads, the tyre load carrying capacity and the necessary minimum ballasting




### For the calculation you need the following data:

| | | | | | |
|---|---|---|---|---|---|
| $T_L$ [kg] | unladen weight of tractor | 1 | **a** [m] | distance from centre of gravity for combined front mounted implement/front ballast to front axle centre | 2 3 |
| $T_V$ [kg] | front axle load of unladen tractor | 1 | | | |
| $T_H$ [kg] | rear axle load of unladen tractor | 1 | **b** [m] | Tractor wheelbase | 1 3 |
| $G_H$ [kg] | combined weight of rear mounted implement/rear ballast | 2 | **c** [m] | distance from rear axle centre to centre of lower link balls | 1 3 |
| $G_V$ [kg] | combined weight of front mounted implement/front ballast | 2 | **d** [m] | distance from centre of lower link balls to centre of gravity for combined rear mounted implement/rear ballast | 2 |

1 see instruction handbook of the tractor
2 see price list and/or instruction handbook of the implement
3 to be measured

### Consideration of rear mounted implement and front/rear combinations

### 1. CALCULATION OF MINIMUM BALLASTING AT THE FRONT $G_{V\ min}$

Record the calculated minimum ballasting which is needed at the front of the tractor into the table.

$$G_{V\ min} = \frac{G_H \bullet (c+d) - T_V \bullet b + 0{,}2 \bullet T_L \bullet b}{a+b}$$

### Front mounted implement

### 2. CALCULATION OF THE MINIMUM $G_{H\ min}$

$$G_{H\ min} = \frac{G_V \bullet a - T_H \bullet b + 0{,}45 \bullet T_L \bullet b}{b+c+d}$$

Record the calculated minimum ballasting which is needed at the rear of the tractor into the table.

## 3. CALCULATION OF THE REAL FRONT AXLE LOAD $T_{V\ tat}$

(If with the front mounted implement ($G_V$) the required minimum front ballasting ($G_{V\ min}$) cannot be reached, the weight of the front mounted implement has to be increased to the weight of the minimum ballasting at the front!)

$$T_{V\ tat} = \frac{G_V \bullet (a+b) + T_V \bullet b - G_H \bullet (c+d)}{b}$$

Record the calculated real front axle load and the permissible front axle load of the tractor into the table.

## 4. CALCULATION OF THE REAL TOTAL WEIGHT $G_{tat}$

(If with the rear mounted implement ($G_H$) the required minimum rear ballasting ($G_{H\ min}$) cannot be reached, the weight of the rear mounted implements has to be increased to at least the weight of the minimum ballasting at the rear!)

$$G_{tat} = G_V + T_L + G_H$$

Record the calculated real and the permissible total weight given in the instruction handbook for the tractor into the table.

## 5. CALCULATION OF THE REAL REAR AXLE LOAD $T_{H\ tat}$

Record the calculated real and the permissible rear axle load given in the instruction handbook for the tractor into the table.

$$T_{H\ tat} = G_{tat} - T_{V\ tat}$$

## 6. TYRE LOAD CARRYING CAPACITY

Record double the value (two tyres) of the permissible load carrying capacity into the table (see for instance documentation provided by the tyre manufacturer).

## Table

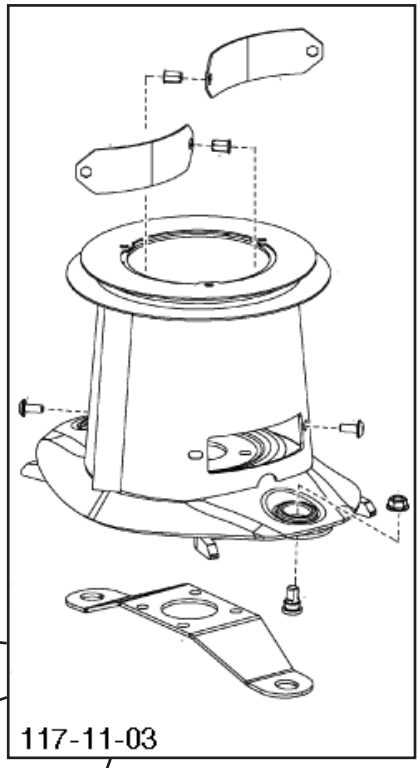
| | Real value according to calculation | | Permissible value according to instruction handbook | | **Double** permissible tyre load carrying capacity (two tyres) |
|---|---|---|---|---|---|
| Minimum ballasting front/rear | / kg | | --- | | --- |
| Total weight | kg | ≤ | kg | | --- |
| Front axle load | kg | ≤ | kg | ≤ | kg |
| Rear axle load | kg | ≤ | kg | ≤ | kg |

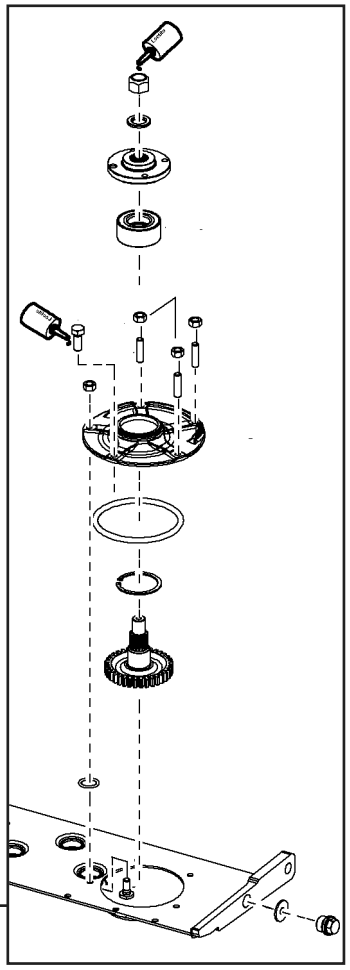
**The minimum ballasting has to be attached to the tractor either in form of a mounted implement or ballasting weight!**

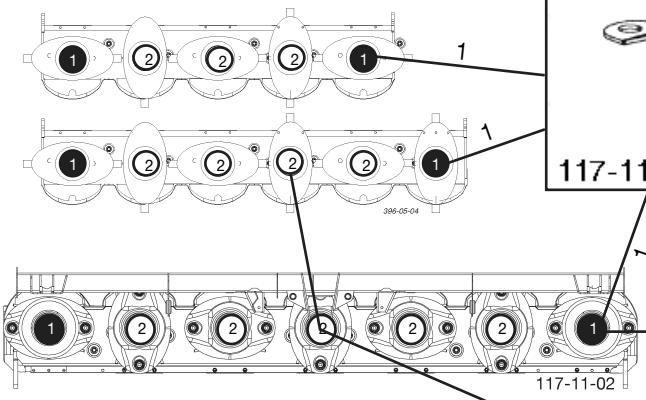
**The calculated values must be less or equal (<) the permissible values!**

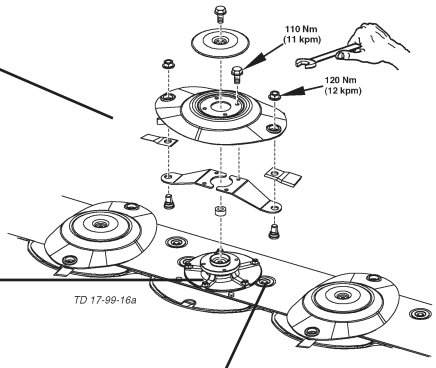
## Repairs on the cutter bar

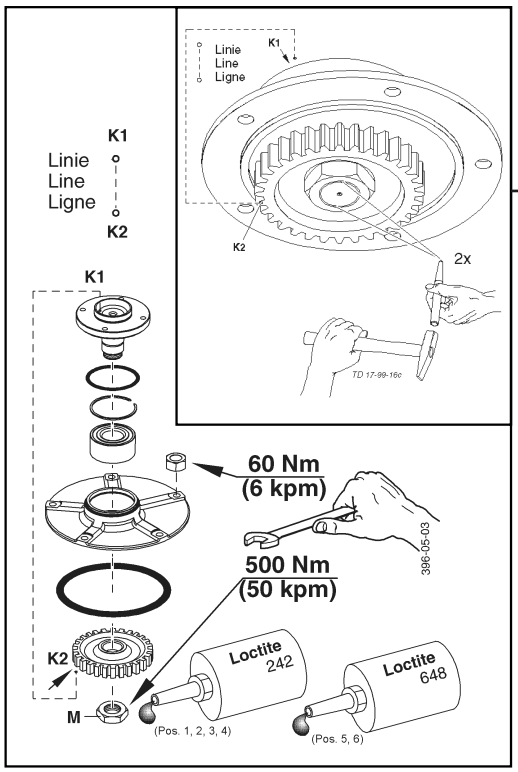
- Adjust markings in a line (K1, K2).
- Only screw the nut (M) on when there is sufficient thread length in order to prevent any damage.
- Secure nut (M) against loosening.
  - with „Loctite 242“ or an equivalent product (Pos. 1, 2, 3, 4, 5)
  - with „Loctite 648“ or an equivalent product (Pos. 6, 7)
  - and center-point (2x)

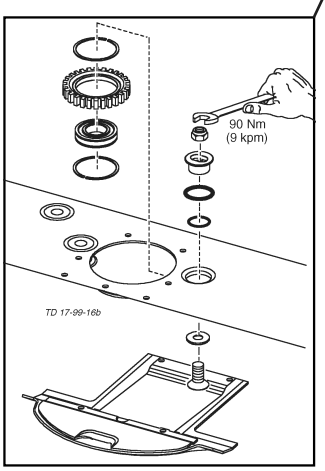




## Taper bushes installation instructions

### To assemble

1. Clean and degrease the bore and taper surfaces of the bush and the tapered bore of the pulley.
2. Insert the bush in the pulley hub and line up the holes (half thread holes must line up with half straight holes).
3. Lightly oil the grub screws (bush size 1008 to 3030) or the cap screws (bush size 3535 to 5050) and screw them in, do not tighten yet.
4. Clean and degrease the shaft. Fit pulley with taper bush on shaft and locate in desired position.
   - When using a key it should first be fitted in the shaft Keyway. There should be a top clearance between the key and the keyway in the bore.
   - Using a hexagon socket wrench (DIN 911) gradually tighten the grub/cap screws in accordance with the torques as listed in the schedule of screw tightening torques

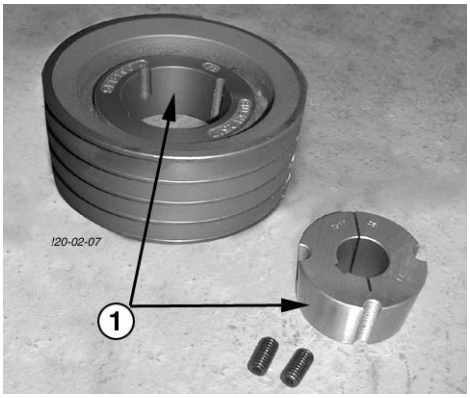
| Bush identifier | Torque [Nm] |
|---|---|
| 2017 | 30 |
| 2517 | 49 |

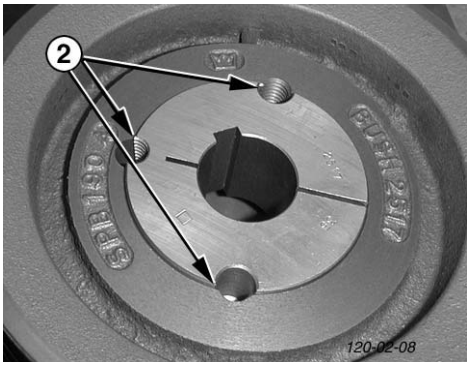
   - When the drive has been operating under load for a short period (half to on hour) check and ensure that the screws remain at the appropriate tightening torque.
   - In order to eliminate the ingress of dirt fill all empty holes with grease.

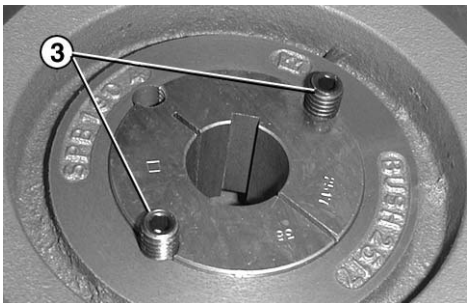
### Removal

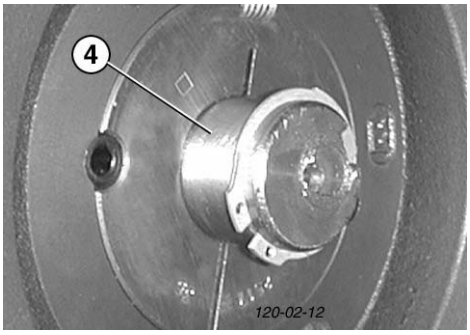
1. Slacken all screws. Depending on the size of the bush remove one or two.

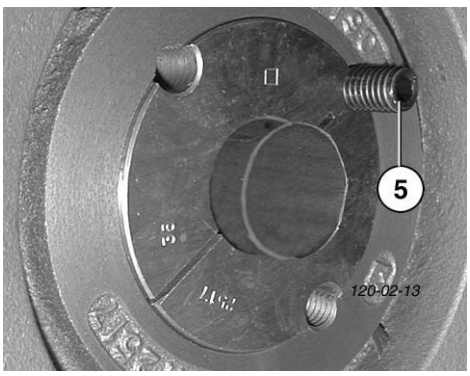
   After oiling point and thread of grub screws or under head and thread of cap screws insert them into the jacking off holie(s) in bush (Pos. 5).
2. Tighten screw(s) unitormly and alternately until the bush is loose in the hub and pulley is free on the shaft.
3. Remove pulley bush assembly from shaft.



The CE norm is not valid in the United States of America and Canada.

# EC Conformity Declaration

*Original Conformity Declaration*

*Name and address of the manufacturer:*

**PÖTTINGER Landtechnik GmbH**
**Industriegelände 1**
**AT - 4710 Grieskirchen**

*Machine (interchangeable equipment)*:

| | Novaalpin 221 B/T | 261 B/T | 301 B/T |
|---|---|---|---|
| **mower** | 315 | 316 | 319 |
| **Type** | | | |
| **Serial no.** | | | |

*The manufacturer declares that the machines adhere to all relevant provisions in the following EU directive:*

**machinery 2006/42/EG**

*In addition to this, the manufacturer also declares adherence to the other following EU directives and/or relevant provisions*

*Source of applied, harmonised norms:*

EN ISO 12100 EN ISO 4254-1 EN ISO 4254-12

*Source of applied miscellaneous technical norms and / or specifications:*

*Person responsible for documentation:*
Andreas Gadermayr
Industriegelände 1
A-4710 Grieskirchen

Markus Baldinger,
CTO R&D

Jörg Lechner,
CTO Production

Grieskirchen, 01.08.2016

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