

Ihre / Your / Votre • Masch.Nr. • Fgst.Ident.Nr.



### Dear Farmer

You have just made an excellent choice. Naturally we are very happy and wish to congratulate you for having chosen Pöttinger. As your agricultural partner, we offer you quality and efficiency combined with reliable servicing.

In order to assess the spare-parts demand for our agricultural machines and to take these demands into consideration when developing new machines, we would ask you to provide us with some details. Furthermore, we will also be able to inform you of new developments.

### Important information concerning Product Liability.

According to the laws governing product liability, the manufacturer and dealer are obliged to hand the operating manual to the customer at the time of sale, and to instruct them in the recommended operating, safety, and maintenance regulations. Confirmation is necessary to prove that the machine and operating manual have been handed over accordingly.

For this purpose, document A is to be signed and sent to Pöttinger, document B remains with the dealer supplying the machine, and the customer receives document C.



In accordance with the laws of product liability, every farmer is an entrepreneur. According to the laws of product liability, property damage is damage caused by a machine and not to it. An excess of Euro 500 is provided for such a liability. In accordance with the laws of product liability, entrepreneurial property damages are excluded from the liability.

**Attention!** Should the customer resell the machine at a later date, the operating manual must be given to the new owner who must then be instructed in the recommended regulations referred to herein.

# INSTRUCTIONS FOR PRODUCT DELIVERY



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. ☒

- ☐ 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 length.
- ☐ 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.pottinger.at](http://www.pottinger.at)
- **document B** stays with the specialist factory delivering the machine.
- **document C** stays with the customer.

## Technical data

Type .....	PTM 334
Working width .....	1650 mm
Weight .....	350 kg
Transport width .....	1400 mm
Transport length .....	2850 mm
Max. height .....	1110 mm
Max. p.t.o. speed .....	540 rpm
Speed of drums .....	1920 rpm
No. of knives .....	6
Basic drive .....	3 V-belts
Drive of drums .....	bevel wheels
Required power .....	20 KW
Permanent sound emission level .....	92,5 dB (A)

## Before putting into operation

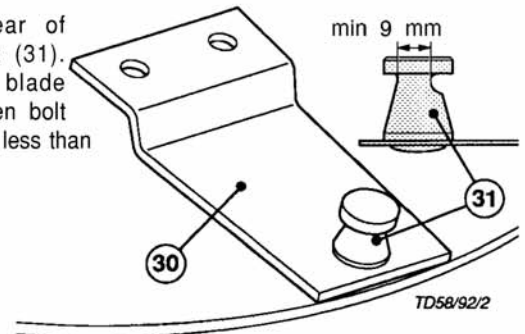
**Attention!** You will find this symbol with all important safety hints in this operating manual.

Please give them your most particular care and attention.



### Check

- Check wear of blade bolt (31). Replace blade holder when bolt diameter is less than 9 mm!



## The defined use of the mower unit

The „CAT 170 economy (Type PTM 334)“ mower is intended solely for normal use in agricultural work.

- 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“.

Observe safety hints in supplement-A!



## Position of Vehicle Identification Plate

The factory number is imprinted on the accompanying Vehicle Identification Plate (as shown) and on the frame. Guarantee issues and further inquiries cannot be processed without the factory number being stated.

Please enter the number onto the front page of the operating manual immediately after taking delivery of the vehicle/implement.

		<b>PÖTTINGER</b>	
<small>A. Pöttinger Maschinenfabrik Ges. m. b. H. A-4710 Grieskirchen Oberösterreich</small>			
	Modell <input type="text"/>		
Type	<input type="text"/>	Ges. Gew.	<input type="text"/>
Masch.Nr. <input type="text"/>			



## 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.

## Meaning of warning signs

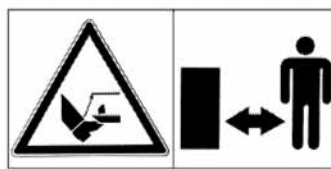
Danger - flying objects; keep safe distance from the machine as long as the engine is running.



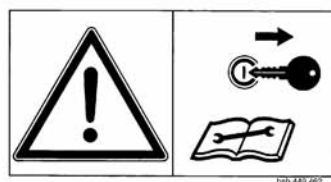
Do not open or remove safety shields while engine is running



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



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



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



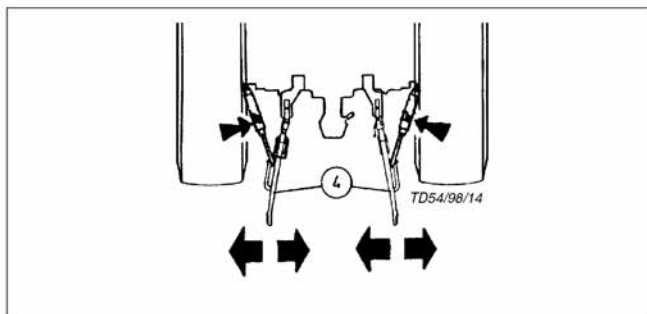
Stay clear of swinging area of implements



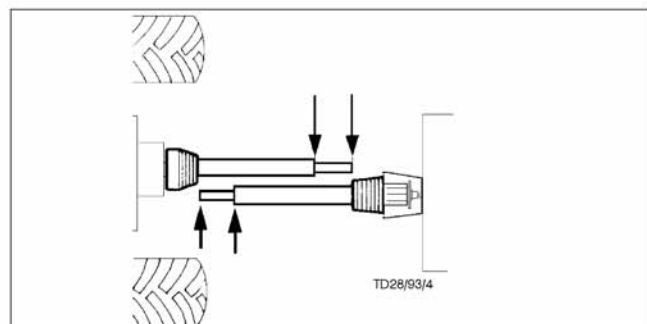
Never reach into the crushing danger area as long as parts may move.

## Attaching

1. Observe safety hints in supplement-A.
2. Pull jack stand out and stand implement on even ground.
3. Mark off the implement at the tractor's three-point linkage.
4. Push jack stand in and secure.
5. Fasten lower hydraulic link (4) so that implement cannot swing out sideways.

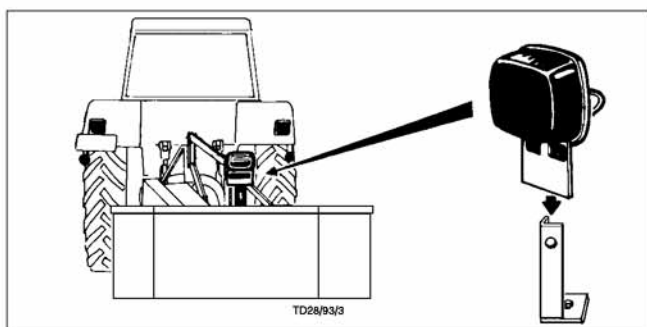


6. Before operating for the first time, drive shaft has to be checked and adapted if necessary (see also chapter "Fitting the drive shaft" in supplement-B).



## Road Transport

- Observe the regulations issued by your country's legislative body.
- Travelling on public roads may only be undertaken as is described in the chapter "Transporting Position".
- Fasten lower hydraulic link (4) so that implement cannot swing out sideways.
- The stop valve on the hydraulic cylinder (optional extra) must be in the "closed" position.

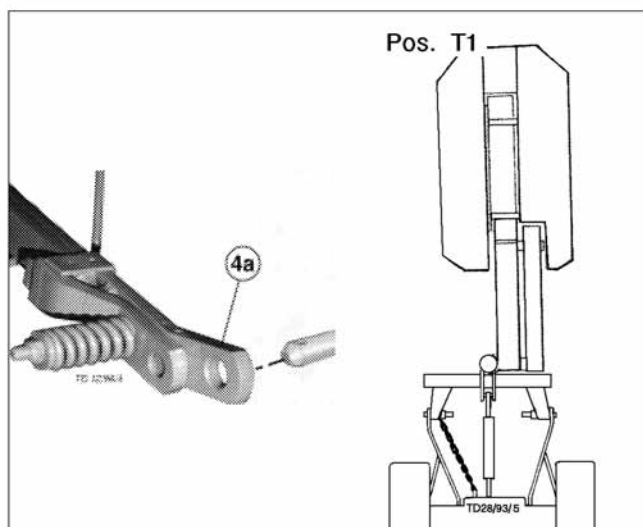


## Take care when converting to transport position

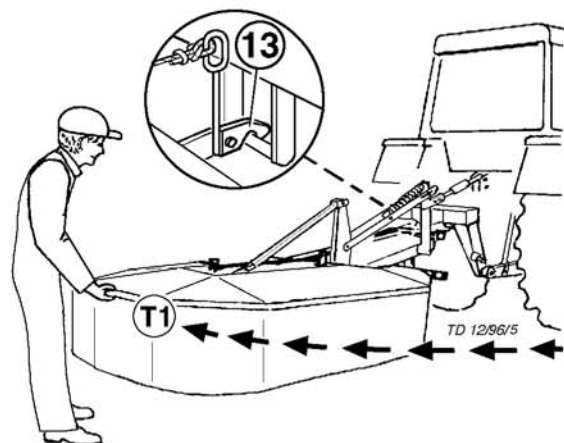
- Do not enter the swivelling range of the mower bar.
- No-one is to stand between tractor and implement.
- Wait until mowing drums have completely stopped before changing.

## Change-over into Working Position (T1)

1. Let the cutter bar down almost to the ground on a level terrain.



2. Dismantle the strut (4a).

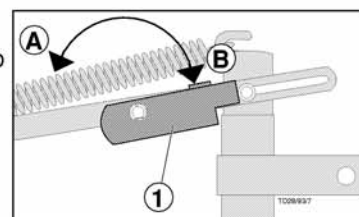


3. Seize the machine at the outside and swivels back as far as possible until the hooks (41) are locked into position.



**Always check lock (13) is engaged correctly before every road trip!**

4. Swing safety catch (1) into position "B".



## Converting from transport to working position



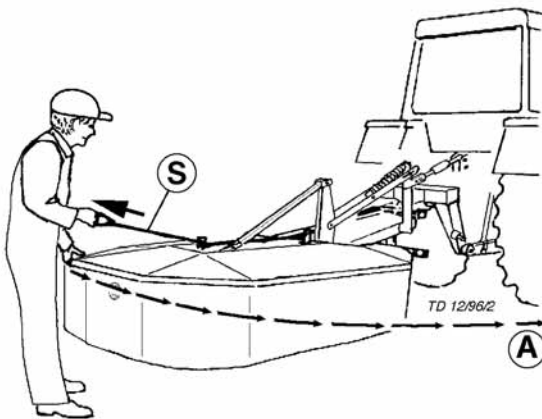
### Safety Precaution!

Changing from working position to transport position is only to be carried out on even, firm ground.

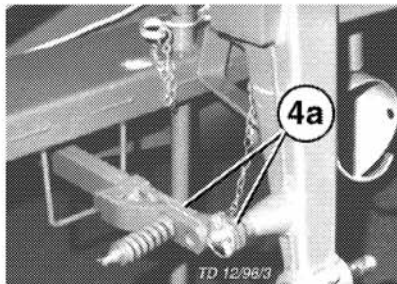
**Caution!** When converting to working position do not enter the swivelling range of the mower bar. No-one is to stand between tractor and implement.

## Change-over from Transport into Working Position

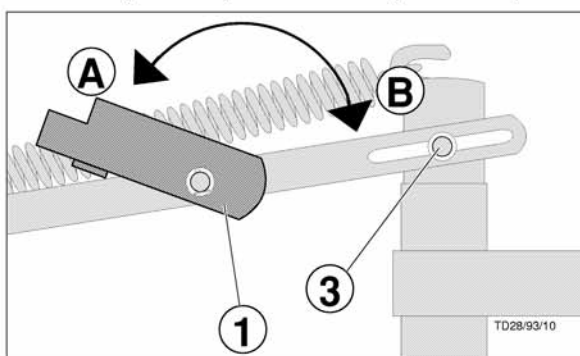
1. Let the cutter bar down almost to the ground on a level terrain.



2. Seize the cutter bar at the outside and undo the lock by actuating the cable (S).
3. Swing the cutter bar into its working position (A).



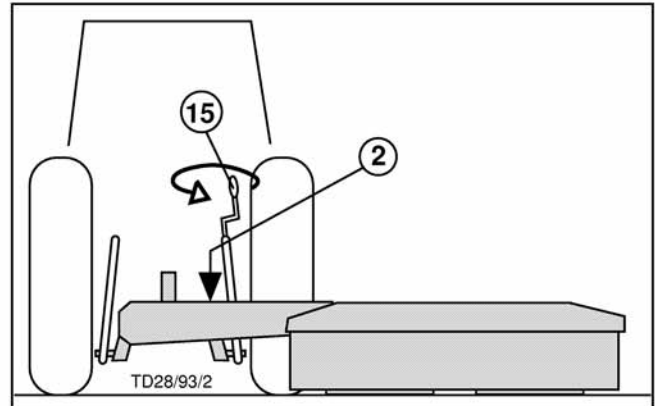
4. Fit the strut (4a) and secure with cotter pin.
  5. Swing safety catch (1) open (position A).
- When mowing the safety catch must always be in this position.



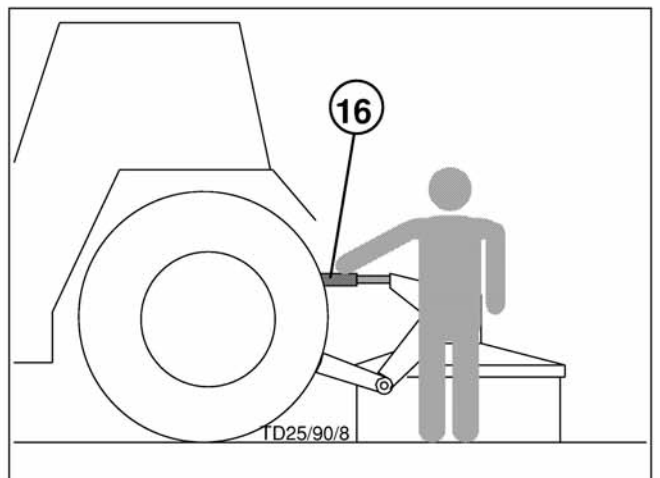
## Important remarks before starting work

### Setting the tractor hydraulics

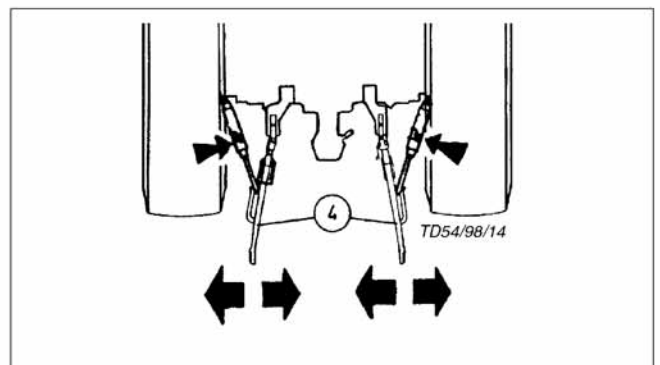
- Set the tractor's lifting gear so that the bolt (3) is located approx. in the centre of the slot. In doing this, the mowing drums can follow the ground contours.
- The attaching frame (2) should therefore be positioned horizontally.



- Adjust cutting height by turning upper link spindle (16).



- Fasten lower hydraulic link (4) so that implement cannot swing out sideways.



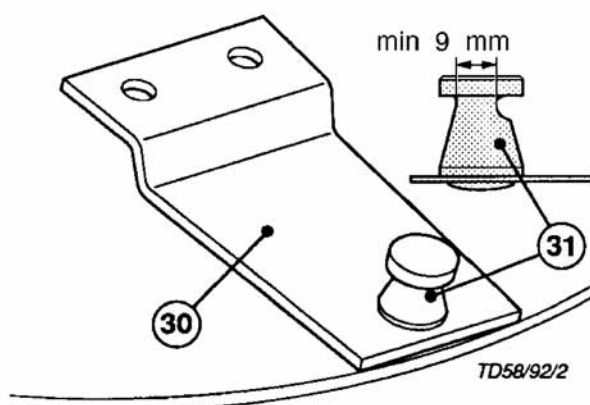
## Checks before operation

- Check the condition of knives and the knife holder. Check cutting drums for damage. Replace damaged parts immediately.
- Observe safety hints in supplement A.

## Safety hints

### 1. Check:

- Check wear of blade bolt (31).  
Replace blade holder when bolt diameter is less than 9 mm.



- Check blade holder (30) on damage.
- In case of grinding noises check whether the blade holder (30) is buckled and therefore the blade does not lie correctly any more.

### 2. Turn p.t.o. on.

Turn the p.t.o. on only when all safety devices (coverings, protective aprons, casings, etc.) are in proper condition and attached to the implement in the correct protective positions.

### 3. Switch-on the machine only in working position and do not exceed the prescribed power take-off speed (for example max. 540 rpm).

A transfer, which is located near the gear, advises which p.t.o. speed your mower unit is equipped for.

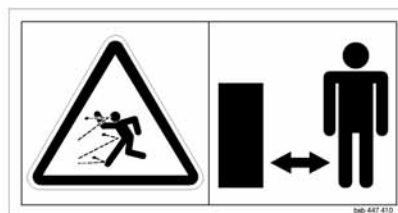
**540 Upm**
**1000 Upm**

### 4. Pay attention to correct p.t.o. direction of rotation!

- To mow, gradually supply power to the p.t.o. before entering the crop and bring the mowing discs up to full revs.  
Smoothly increase the p.t.o. speed, in order to avoid noises in the free-wheel conditioned by the system.
- Adjust travel speed to terrain and crop.

### 5. Stay clear while engine is running

Refer people to the danger area, the danger coming from stones



which are flung away. Particular care is advisable on stoney ground and near roads and paths.

### 6. Wear hearing protection

The noise level in the workplace can deviate from the measured value (see Technical Data) partly because of the differing cabin types of various tractors.

- If a noise level of 85 dB (A) is reached or exceeded, the farmer must have suitable hearing protection in readiness (UVV 1.1 §2).
- If a noise level of 90 dB (A) is reached or exceeded, the hearing protection must be worn (UVV 1.1 § 16).



### 7. Damage protection!

- The surface to be mowed must be free of obstructions or foreign objects. Such objects (e.g. large stones, pieces of wood, boundary stones, etc.) can damage the mower unit.

#### In the event of a collision

- Stop immediately and switch off the drive.
- Carefully check the implement for damage.
- Have the implement checked also by a specialist workshop if necessary.

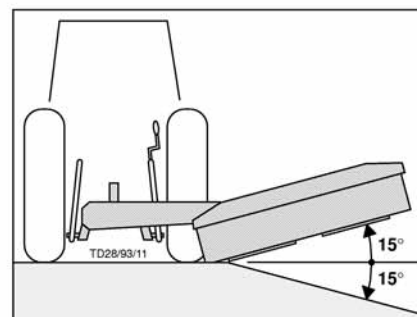
### 8. Safety hints (pt. 1, 2, 3, 4,) to observe in supplement A1!

## Mowing of Embankments

- When mowing embankments position the mower bar first and then turn on the p.t.o. drive.

Otherwise the cutters on the outside mowing drum cut into the ground.

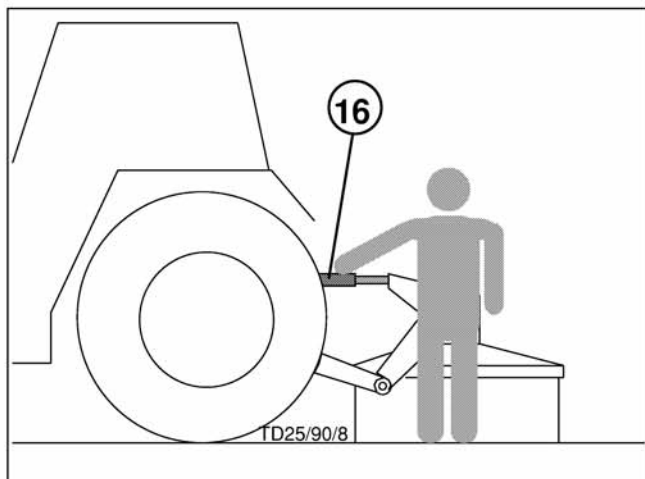
- The mower bar should not rise or fall any more than 15° when mowing.





## Adjusting cutting height

- Adjust cutting height using upper link (16).  
The upper link must be set so that the mower drums are horizontal or tilted slightly forward.

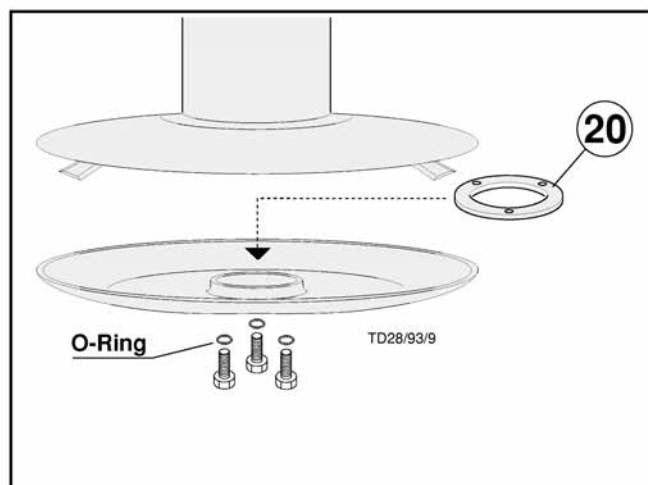


## Double cut

- If the mowed stalks show a double cut, then correct the tilt of the mowing drums. The mowing drums are not to be tilted backward.

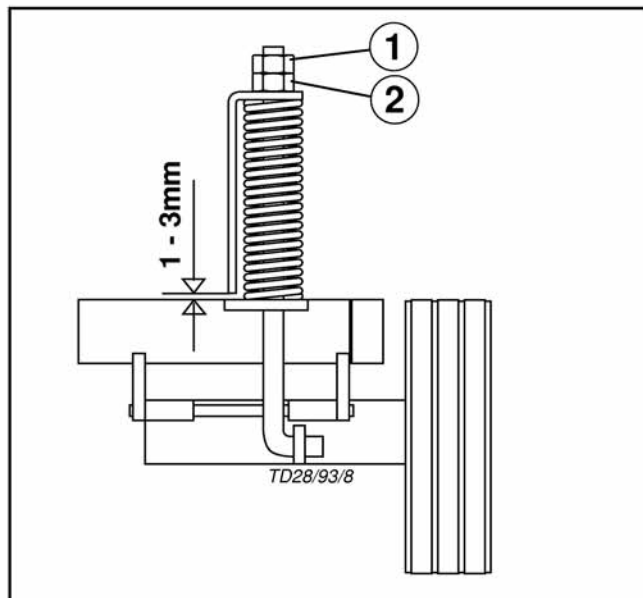
## Spacing rings

- Spacing rings (20) are used when setting the cutting length. Four rings are delivered with each mower, 2 of which are already installed.
- A maximum of 4 rings per drum may be installed.
- In the case where more than 2 rings per drum are to be installed, replace the 30 mm screws with 40 mm screws.
- After one hour of operation check that the screws are still tight.



## V-belt tension

- In most cases the V-belts become stretched within the first few hours of operation.
- Check V-belt tension occasionally during operation.  
Adjustment 1 - 3 mm.



## Replacing V-belts

### Adjusting new V-belt tension

- Loosen lock-nut (1).
- Turn nut (2) until setting "0 mm" is attained.
- Lock nut (2) with lock-nut (1).
  - Retensioning is only necessary when adjustment is more than 3 mm.
  - When any one of the three V-belts is damaged or stretched, all three V-belts should be replaced.

### Take note!

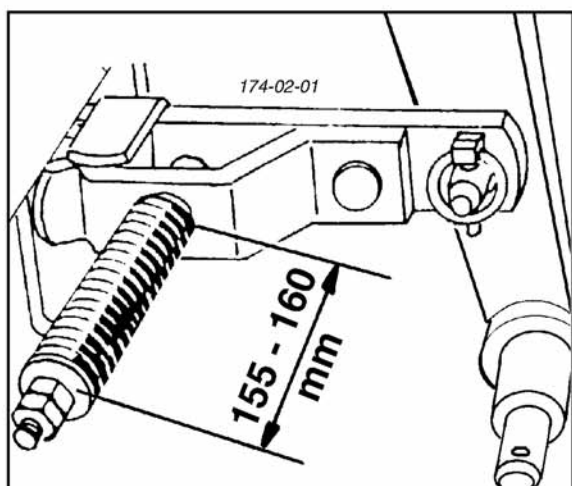
If the V-belts are too taut, the danger of damaging the ball bearings and shafts arises.

## Damage protection!

- The surface to be mowed must be free of obstructions or foreign objects. Such objects (e.g. large stones, pieces of wood, boundary stones, etc.) can damage the mower unit.

### In the event of a collision

- Stop immediately and switch off the drive.
- Carefully check the implement for damage.
- Have the implement checked also by a specialist workshop if necessary.



## Collision safety device

When mowing around trees, fences, boundary stones etc., collisions between the cutter bar and obstacles can occur despite careful and slow driving. Therefore, in order to prevent such damage, collision protection has been planned for the cutting device.

### Attention!

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

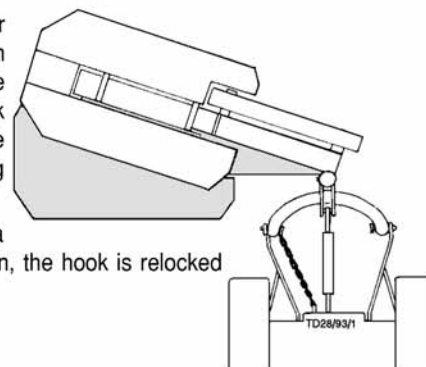
If you are not sure whether the cutting area is really free of obstacles, please work at an appropriate slow speed!



## Function of collision safety device:

If the mower encounters an obstacle, the springloaded hook is released and the cutterbar can swing back.

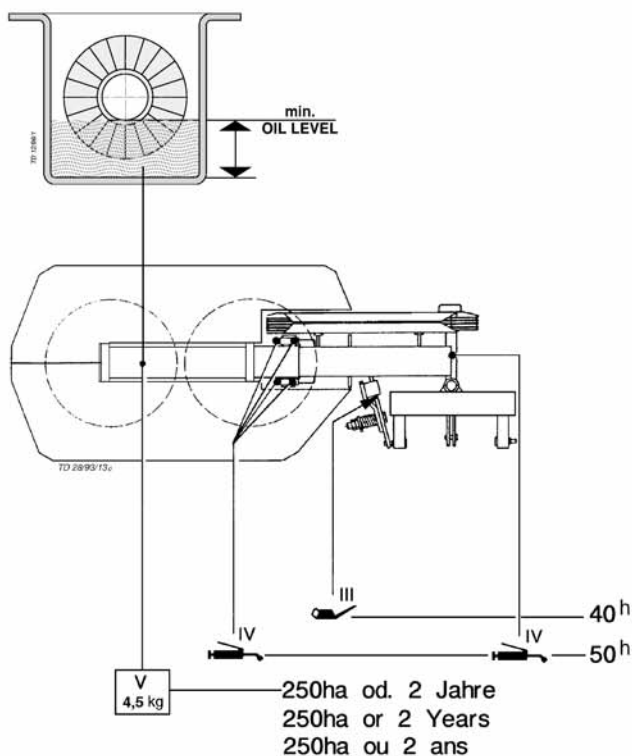
If you reverse a short distance then, the hook is relocked into position.



## Adjustment:

In case the safety device trips to easy adjust hexagonal nut. Adjusting measurement 155-160 mm.

## Lubrication chart



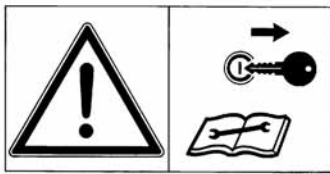
III, IV, V = see pages 10 and 11

## LUBRICATION & GENERAL MAINTENANCE

### Safety hints:

see supplement-A1 points 1b.), 2.), 8i.), 9.)

- Turn engine off when adjustment, service and repair work is to be done.
- Do not work under the machine without safe

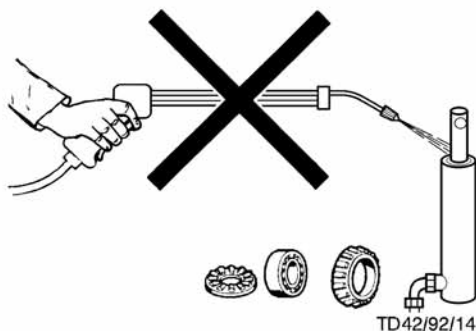


support.

- Retighten all screws after the first hours of operation.

## Cleaning of machine parts

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



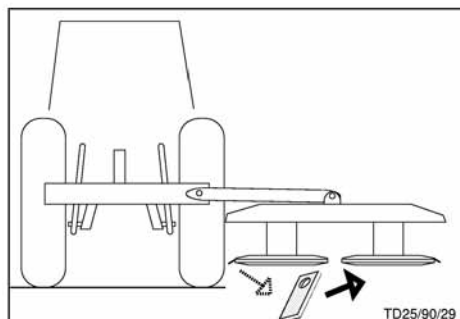
- Danger of rust!
- After cleaning, grease the machine according to the lubrication chart and carry out a short test run.
- Cleaning with too high pressure may do damage to varnish.

## Winter storage

- To clean and preserve the under side of the mower disc, unscrew the slide plate.
- Lubricate and oil the machine according to the lubrication chart (see page 8).
- Slacken V-belts.
- Put up protection against weather.

## The knives

- The knives have cutting edges at both sides. Therefore it is possible as soon as one edge is

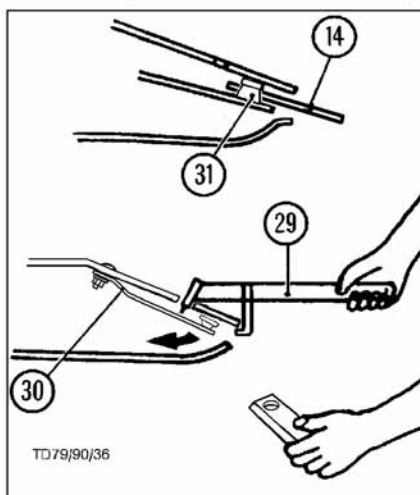


blunt to take the knives and use it on the next drum.

- **The knives on the same drum must always be worn out to the same extent or they must be new so that the dynamic balance does not get distributed.**

## Replacing knives

- Support the lever (29) against the lower edge of drum and press the flexible holder (30) on



the lower end of which is fixed the cutter (14) on the pin.

Remove the damaged knives and apply a new one, at the same time the rests of fodder around the pins of the knife holders, eventually from the inner space of the discs.

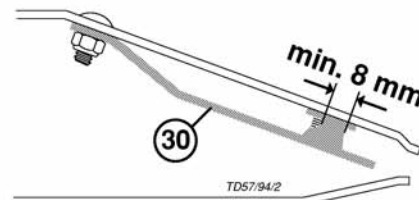
Remove the lever and check whether the pin of the knife holder has returned to the initial position and whether the knife revolves freely on the pin.

### Attention! (min. 8 mm)



Replace flexible holder (30) at the latest:

- when pin diameter is worn off to 8 mm.
- when flexible holder (30) has been deformed.



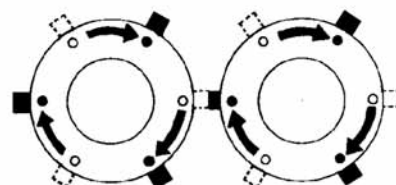
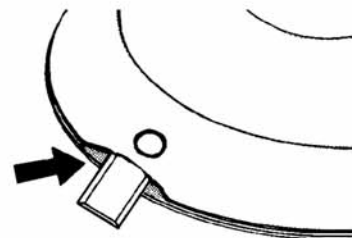
## Checking the mowing blade mountings

- Check immediately after running into a solid obstacle.
- Check normally every 100 hours.
- Check more frequently when mowing on stony ground.

## MOWING DISCS

**If a mowing disc is worn through close to the mowing knives, proceed as follows:**

- Remove bottom support disc
- Undo nuts on knife mountings
- Reset knife mountings one hole (60°)
- Tighten bolts up firmly (120 Nm torque), and check after some hours' operation.



The original cannot be copied

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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**

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## ***SUPPLEMENT***



## Recommendations for work safety

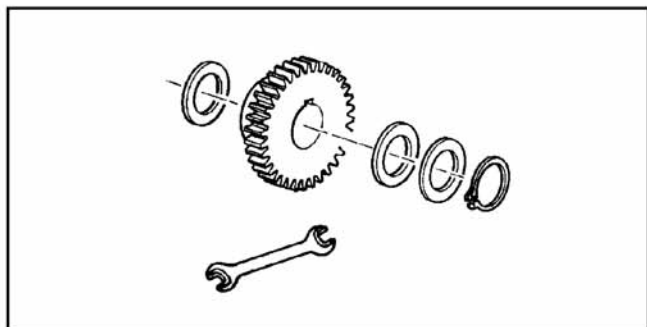
All points referring to safety in this manual are indicated by this sign.

### 1.) Defined use

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

### 2.) Spare parts

- The **original components and accessories** have been designed especially for these machines and appliances.
- We want to make it quite clear that components and accesories that have not been supplied by us have not been tested by us.
- 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.

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

### 3.) Protection devices

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

### 4.) Before starting work

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

### 5.) Asbestos

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

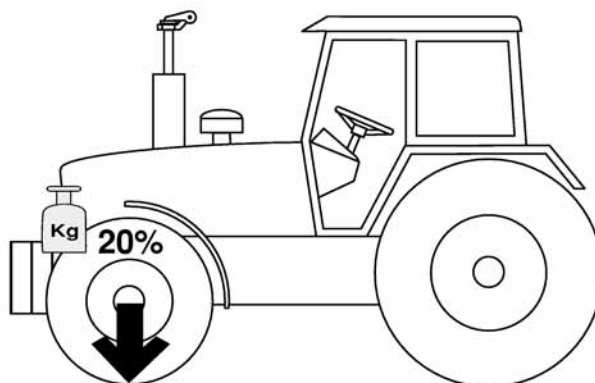


### 6.) Transport of persons prohibited

- The transport of persons on the machine is not permitted.
- The machine may only be driven on public roads when in the position stipulated for road transport.

### 7.) Driving ability with auxiliary equipment

- The towing vehicle is to be sufficiently equipped 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).



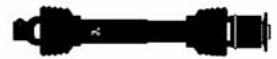
- The driving ability is influenced by ground conditions and by the auxiliary equipment. The driving must be adapted to the corresponding terrain and ground conditions.
- When driving through curves with a connected appliance, observe the radius and swinging mass of the appliance.
- When travelling in a curve with attached or semimounted implements, take into account the working range and swing mass of the implement!

### 8.) General

- Before attaching implement to three-point linkage, move system lever into a position whereby unintentional raising or lowering is ruled out!
- Danger of injury exists when coupling implement to tractor!
- Danger of injury through crushing and cutting exists in the three-point linkage area!
- Do not stand between tractor and implement when using three-point linkage external operation!
- Attach and detach drive shaft only when motor has stopped.
- When transporting with raised implement, secure operating lever against lowering!
- Before leaving tractor, lower attached implement to the ground and remove ignition key!
- Nobody is to stand between tractor and implement without tractor being secured against rolling using parking brake and/or wheel chocks!
- For all maintenance, service and modification work, turn driving motor off and remove universal drive.

### 9.) Cleaning the machine

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

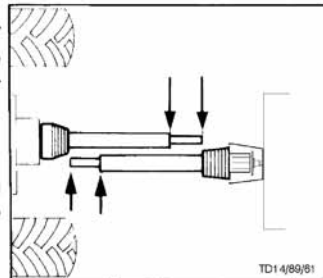


## DRIVESHAFT

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

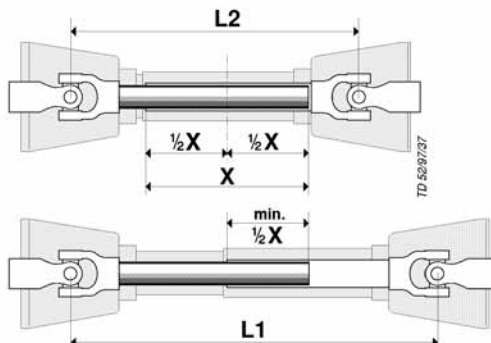
### Matching driveshaft to tractor

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



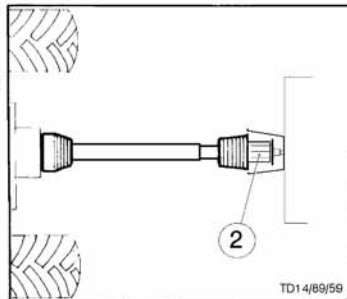
### Procedure for cutting to length

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



### Important!

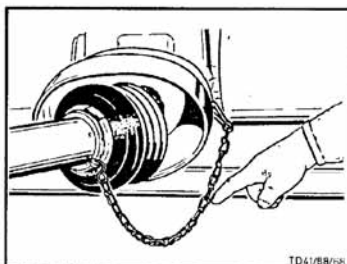
- Note the maximum operating length (L1)
- Try to attain the greatest possible shaft overlap (min.  $\frac{1}{2} X$ )!
- Shorten inside and outside tube guard by the same amount.
- Fit torque limiter (2) of drive shaft to implement end of driveshaft!
- Always check that drive shaft locks are securely engaged before starting work.



### Retaining chain

- Use chain to prevent tube guard from rotating.

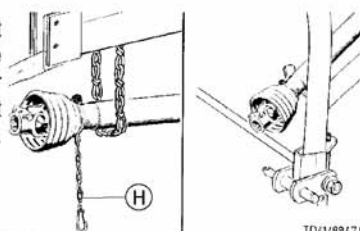
Take care that chain does not impede driveshaft pivoting.



### Rules for working

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

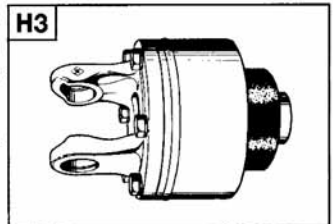
- When the p.t.o. is switched off, the implement hitched up may not stop at once. Do not go close to the implement until all motion has stopped; only then may work be done on it.
- When the implement is parked, either remove the driveshaft and store it, or secure it with a chain. (Do not use retaining chain (H) for this).



### 1) How a cam type cut out safety clutch works:

This overload clutch switches the torque transmitted to zero if overloaded. To revert to normal operation, stop the p.t.o. drive briefly.

The clutch reengages at a speed below 200 rpm.



### IMPORTANT !

The overload clutch on the driveshaft is not a "Full up" indicator. It is purely a torque limiter designed to protect the implement against damage.

Driving the right way will avoid triggering the clutch too often, and thus causing unnecessary wear on it and the implement.

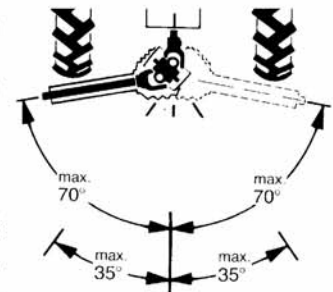
### 2) Wide-angle joint :

Maximum angle of deflection when working/stationary : 70°

### 3) Standard joint :

Maximum angle of deflection when stationary: 90°

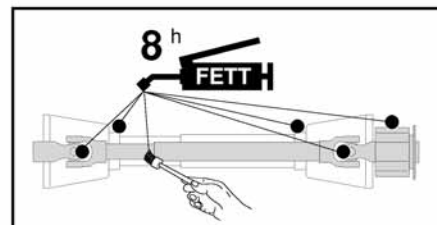
Maximum angle of deflection when working: 35°



### Maintenance

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

- Lubricate with a brand-name grease before starting work and every 8 hours worked.
- Before any extended period of non-use, clean and lubricate driveshaft.

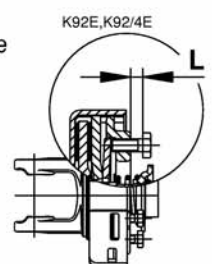
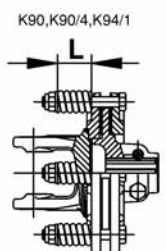


For winter working, grease the tube guards, to avoid them freezing together.




### • Important for driveshafts with friction clutch

Prior to initial operation and after long periods out of use, check friction clutch for proper function.




- Measure dimension „L“ at compression spring of K90, K90/4 and K94/1 or at set screw of K92E and K92/4E.
  - Loosen screws to release the pressure on the friction disk.
  - Tighten set screws to dimension „L“.
- Clutch is ready for use.





D Betriebsstoffe		GB Lubricants		F Lubrifiants		I Lubrificanti		NL Smeermiddelen							
Ausgabe 1997		Edition 1997		Édition 1997		Edizione 1997		Uitgave 1997							
Leistung und Lebensdauer der Maschine sind von sorgfältiger Wartung und der Verwendung guter Betriebsstoffe abhängig. Unsere Betriebsstoffaufleistung erleichtert die richtige Auswahl geeigneter Betriebsstoffe. Im Schmierplan ist der jeweils einzusetzende Betriebsstoff durch die Betriebsstoffkennzahl (z.B. "III") symbolisiert. Anhand von "Betriebsstoffkennzahl" kann das geforderte Qualitätsmerkmal und das entsprechende Produkt der Mineralölfirmen festgestellt werden. Die Liste der Mineralölfirmen erhebt keinen Anspruch auf Vollständigkeit.	I				V	VI	VII								
										HYDRAULIKÖL HLP DIN 51524 Teil 2	Getriebeöl SAE 90 bzw. SAE 85 W-140 gemäß API-GL 4 oder API-GL 5	Li-Fett (DIN 51 502, KP 2K)	Getriebeöl (DIN 51 502:GOH)	Komplexfett (DIN 51 502: KP 1R)	Getriebeöl SAE 90 bzw. 85 W-140 gemäß API-GL 5
										Siehe Anmerkungen	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
										*	huile moteur SAE 30 niveau API CD/SF	graisse au lithium	graisse transmission	graisse complexe	huile transmission SA 90 ou SAE 85 W-140, niveau API GL 5
										**	oilo motore SAE 30 secondo specifiche API CD/SF	grasso al litio	grasso fluido per riduttori e motoriduttori	grasso a base di saponi complessi	olio per cambi e differenziali SAE 90 o SAE 85W-140 secondo specifiche API-GL 4 o API-GL 5
***									SAE 85 W-140, niveau API GL 5						
de performance demandé															
caratteristica richiesta di qualità															
verlangte kwaliteitskenmerken															



Firma Company Société Società	I				V	VI	VII	ANMERKUNGEN
AGIP	OSO 32/46/68 ARNICA 22/46	MOTOR OIL HD 30 SIGMA MULTI 15W-40 SUPER TRACTOR OIL UNIVERS. 15W-30	ROTRA HY 80W-90/85W-140 ROTRA MP 80W-90/85W-140	GR MU 2	GR SLL GR LFO		ROTRA MP 80W-90 ROTRA MP 85W-140	Bei Verbundarbeit mit Naßbremsen-schleppern ist die internationale Spezifikation J 20 A erforderlich
ARAL	VITAM GF 32/46/68 VITAM HF 32/46	SUPER KOWAL 30 MULTI TURBORAL 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 AVILUB VG 32/46	MOTOR OIL HD 30 MULTIGRADE HDC 15W-40 TRACTAVIA HF SUPER 10W-30	GETRIEBEÖL MZ 90 M MULTIHYP 85W-140	AVIA MEHRZWECKFETT AVIA ABSCHMIERFETT	AVIA GETRIEBEFLEISSFETT	AVIALUB SPEZIALFETT LD	GETRIEBEÖL HYP 90 EP MULTIHYP 85W-140 EP	
BAYWA	HYDRAULIKÖL HLP 32/46/68 SUPER 2000 CD-MC HYDRA HYDR. FLUID HYDRAULIKÖL MC 530 ** PLANTOHYD 40N ***	SUPER 2000 CD-MC SUPER 2000 CO HD SUPERIOR 20 W-30 HD SUPERIOR SAE 30	SUPER 8090 MC HYPOID 80W-90 HYPOID 85W-140	MULTI FETT 2 SPEZIALFETT FLM PLANTOGEL 2 N	GETRIEBEFLEISSFETT NLGI 0 RENOLIT DURAPLEX EP 00 PLANTOGEL 00N	RENOPLEX EP 1	HYPOID 85W-140	** Hydrauliköle auf HLP-(D) + HV
BP	ENERGOL SHF 32/46/68	VISCO 2000 ENERGOL HD 30 VANELLUS M 30	GEAR OIL 90 EP HYPOGEAR 90 EP	ENERGEGREASE LS-EP 2	FLEISSFETT NO ENERGEGREASE HTO	OLEX PR 9142	HYPOGEAR 90 EP HYPOGEAR 85W-140 EP	** Hydrauliköle auf Pflanzenölbasis HLP + HV Biologisch abbaubar, deshalb besonders umweltfreundlich
CASTROL	HYSPIN AWS 32/46/68 HYSPIN AHW 32/46	RX SUPER DIESEL 15W-40 POWERTRANS	EPX 80W-90 HYPOY C 80W-140	CASTROL GREASE LM	IMPERVIA MMO	CASTROL GREASE LMX	EPX 80W-90 HYPOY C 80W-140	
ELAN	HLP 32/46/68 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-30	LORENA 46 LITORA 27	RHENOX 34		GETRIEBEÖL B 85W-90 GETRIEBEÖL C 85W-140	
ELF	OLNA 32/46/68 HYDRELIF 46/68	PERFORMANCE 2 B SAE 30 8000 TOURS 20W-30 TRACTORELF ST 15W-30	TRANSSELF TYP B 90 85W-140 TRANSSELF EP 90 85W-140	EPEX 2 ROLEXA 2 MULTI 2	GA O EP POLY G O	MULTIMOTIVE 1	TRANSSELF TYP B 90 85W-140 TRANSSELF TYP BLS 80 W-90	
ESSO	NUTO H 32/46/68 NUTO HF 32/46/68	PLUS MOTORÖL 20W-30 UNIFARM 15W-30	GEAR OIL GP 80W-90 GEAR OIL GP 85W-140	MULTI PURPOSE GREASE H	FIBRAX EP 370	NEBULA EP 1 GP GREASE	GEAR OIL GX 80W-90 GEAR OIL GX 85W-140	* When working in conjunction with wet-brake tractors, the international specification J 20 A is necessary.
EVVA	ENAK HLP 32/46/68 ENAK HLP 46/68	SUPER EVVAROL HD B SAE 30 UNIVERSAL TRACTOR OIL SUPER	HYPOID GA 90 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 SUPER UNIVERSAL OIL	PONTONIC N 85W-90 PONTONIC MP 85W-90 85W-140 SUPER UNIVERSAL OIL	MARSON EP L 2	NATRAN 00	MARSON AX 2	PONTONIC MP 85W-140	** Hydraulic oil HLP-(D) + HV.
FUCHS	RENOLIN 1025 MC *** TITAN HYDRAMOT 1030 MC ** RENOGEAR HYDRA * PLANTOHYD 40N ***	TITAN HYDRAMOT 1030 MC TITAN UNIVERSAL HD	RENOGEAR SUPER 8090 MC RENOGEAR HYPOID 85 W-140 RENOGEAR HYPOID 90	RENOLIT MP RENOLIT FILM 2 RENOLIT ADHESIV 2 PLANTOGEL 2 N	RENOSOD GFO 35 DURAPLEX EP 00 PLANTOGEL 00N	RENOPLEX EP 1	RENOGEAR SUPER 8090 MC RENOGEAR HYPOID 85W-140 RENOGEAR HYPOID 90	
GENOL	HYDRAULIKÖL HLP 32/46/68 HYDRAMOT 1030 MC * HYDRAULIKÖL 320 *** PLANTOHYD 40N ***	MULTI 2030 2000 TC HYDRAMOT 15W-30 HYDRAMOT 1030 MC	GETRIEBEÖL MP 90 HYPOID EW 90 HYPOID 85W-140	MEHRZWECKFETT SPEZIALFETT GLM PLANTOGEL 2 N	GETRIEBEFLEISSFETT PLANTOGEL 00N	RENOPLEX EP 1	HYPOID EW 90 HYPOID 85W-140	** Hydraulic oil with vegetable oil base HLP + HV is bio-degradable and is therefore especially safe for the environment.
MOBIL	DTE 22/24/25 DTE 13/15	HD 20W-20 DELVAC 1230 SUPER UNIVERSAL 15W-30	MOBILUBE GX 90 MOBILUBE HD 90 MOBILUBE HD 85W-140	MOBILGREASE MP	MOBILUX EP 004	MOBILPLEX 47	MOBILUBE HD 90 MOBILUBE HD 85W-140	
RHG	RENOLIN B 10/15/20 RENOLIN B 32 HVI/46HVI	EXTRA HD 30 SUPER HD 20 W-30	MEHRZWECKGETRIEBEÖL SAE 90 HYPOID EW 90	MEHRZWECKFETT RENOLIT MP DURAPLEX EP	RENOSOD GFO 35	RENOPLEX EP 1	HYPOID EW 90	
SHELL	TELLUS S32/S 46/S68 TELLUS T 32/146	AGROMA 15W-30 ROTELLA X 30 RIMULA X 15W-40	SPIRAX 90 EP SPIRAX HD 90 SPIRAX HD 85/140	RETINAX A ALVANIA EP 2	SPEZ. GETRIEBEFETT H SIMMUNA GREASE O	AEROSHELL GREASE 22 DOLLIUM GREASE R	SPIRAX HD 90 SPIRAX HD 85W-140	
TOTAL	AZOLLA ZS 32, 46, 68 EQUIVIS ZS 32, 46, 68	RUBIA H 30 MULTAGRI TM 15W-20	TOTAL EP 85W-90 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 SUPER TRAC FE 10W-30 HVP 32 ULTRAPLANT 40 ***	SUPER HPO 30 STOU 15W-30 SUPER TRAC FE 10W-30 ALL FLEET PLUS 15W-40	HP GEAR OIL 90 oder 85W-140 TRANS GEAR OIL 80W-90	MULTILUBE EP 2 VAL-PLEX EP 2 PLANTOGEL 2 N	RENOLIT ZS 000 DEGRALUB ZSA 000	DURAPLEX EP 1	HP GEAR OIL 90 oder 85W-140	
VEEDOL	ANDARIN 32/46/68	HD PLUS SAE 30	MULTIGRADE SAE 80/90 MULTIGEAR B 90 MULTIGEAR C SAE 85W-140	MULTIPURPOSE			MULTIGEAR B 90 MULTI C SAE 85W-140	
WINTERSHALL	WIOLAN HS (HG) 32/46/68 WIOLAN HVG 46 *** WIOLAN HF 32/46 *** HYDROLFLUID *	MULTI-REKORD 15W-40 PRIMANOL REKORD 30	HYPOID-GETRIEBEÖL 80W-90, 85W-140 MEHRZWECKGETRIEBEÖL 80W-90	WIOLUB LFP 2	WIOLUB GFW	WIOLUB AFK 2	HYPOID-GETRIEBEÖL 80W-90, 85W-140	

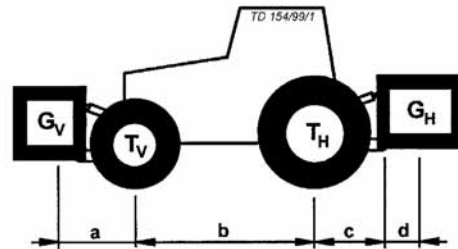
## Combination of tractor and mounted implement



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 of the tractor. The front axle of the tractor must always 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 $G_{V \min}$

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

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

### Front mounted implement

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

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

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

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

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

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

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 $G_{\text{tat}}$

(If with the rear mounted implement ( $G_H$ ) the required minimum rear ballasting ( $G_{H\text{min}}$ ) 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!)

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

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 $T_{H\text{tat}}$

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

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

### 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	<div style="border: 1px solid black; padding: 5px; display: inline-block;">/ kg</div>	---	---
Total weight	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	---
Front axle load	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>
Rear axle load	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">kg</div>

**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!**

Appendix 1

**EC Certificate of Conformity**

conforming to EEC Directions 98/37

We ALOIS PÖTTINGER Maschinenfabrik Gesellschaft m.b.H.

(name of supplier)

A-4710 Grieskirchen; Industriegelände 1

(full address of company - where this concerns authorized agents within the Common Market, also state the company name and manufacturer)

declare in sole responsibility, that the product

Trommelmäher

CAT 170 economy,

Type PTM 334

CAT 190 economy,

Type PTM 341

(make, model)

to which this certificate applies, conforms to the basic safety and health requirements of EEC Directions 98/37,

(if applicable)

and to the other relevant EEC Directions.

(title and/or number and date of issue of the other EEC Directions)

(if applicable)

To effect correct application of the safety and health requirements stated in the EEC Directions, the following standards and/or technical specifications were consulted:

EN 292-1 : 1991

EN 292-2 : 1991

(title and/or number and date of issue of standards and/or specifications)

Grieskirchen, 12.07.2002

(Place and date of issue)



pa. Ing. W. Leposa  
Entwicklungsleitung

(Name and job function of authorized person)

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## **PÖTTINGER**

### **Landtechnik GmbH**

A-4710 Grieskirchen  
Telefon: +43 7248 600-0  
Telefax: +43 7248 600-2513  
e-Mail: [info@poettinger.at](mailto:info@poettinger.at)  
Internet: <http://www.poettinger.at>

### **PÖTTINGER Deutschland GmbH Verkaufs- und Servicecenter Recke**

Steinbecker Strasse 15  
D-49509 Recke  
Telefon: +49 5453 9114-0  
Telefax: +49 5453 9114-14  
e-Mail: [recke@poettinger.at](mailto:recke@poettinger.at)

### **PÖTTINGER Deutschland GmbH Servicecenter Landsberg**

Spöttinger-Straße 24  
Postfach 1561  
D-86 899 LANDSBERG / LECH  
Telefon:  
Ersatzteildienst: +49 8191 9299 - 166 od. 169  
Kundendienst: +49 8191 9299 - 130 od. 231  
Telefax: +49 8191 59656  
e-Mail: [landsberg@poettinger.at](mailto:landsberg@poettinger.at)

### **PÖTTINGER France S.A.R.L.**

129 b, la Chapelle  
F-68650 Le Bonhomme  
Tél.: +33 (0) 3 89 47 28 30  
e-Mail: [france@poettinger.at](mailto:france@poettinger.at)