



minos
agri



ROTARY DRUM MOWER
1650



Introducing & Operating Manuel



minos
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Our company, activating in agricultural mechanization field which has great importance for improvement of agriculture in our country since 1959, manufactures Rotary Tillers, Seed Drills, Inter Row Rotary Cultivator, Fertilizer Spreaders, Mulchers, ReaperBinder Machine, Maize Chopper, Rotary Mowers, Rotary Rakes, Tedder, Subsoilers, Cultivators, Chisel, Disc Tiller, Baler used in agricultural works such as handling, fertilizing and harvesting starting from preparation of soil at the pre-sowing period until plantation, in compliance with stage of the art technology.

Considering the agricultural needs of our country, Minos Agricultural Machinery has put the mixer feeders into service with the quality, privilege, guarantee and assurance of Minos, which are designed to have strong and reliable structures, be easy to use and eco-friendly machines.

Our company following the global technological advancements is always beside farmers and at the service of state agriculture with quality machinery conforming to standards and on-site applications.



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ROTARY DRUM MOWER - 1650

Introducing & Operating Manual



EC DECLARATION OF CONFORMITY

TURKAY TARIM MAKINALARI SAN. VE TIC. LTD. STI.

Fatih Mah. 1191 Sok. No: 17/A 35414 Gaziemir / IZMIR / TURKIYE

Declare under our own responsibility that the product(s) specified below satisfies the requirements of the Machinery Safety Directive 2006/42/EC.

The product(s) identified below has been produced according to basic safety and health measures.

BRAND: minos agri

PRODUCT NAME: ROTARY DRUM MOWER

MODELS: T-TCBM 1350 / T-TCBM 1650 / T-TCBM 1900 / T-TCBM 1350-H / T-TCBM 1650-H / T-TCBM 1900-H

Harmonized standards:

TS EN ISO 4254-1 (18.04.2016) / Agricultural machinery - Safety - Part 1: General requirements

TS EN ISO 12100:2010 (12.04.2011) / Safety of machinery - General principles for design - Risk assessment and risk reduction

TS EN ISO 13857 (29.04.2014) / Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs

TS EN 349+A1:2009 (19.02.2009) / Safety of machinery - Minimum gaps to avoid crushing of parts of the human body

TS EN ISO 14120 (18.04.2016) / Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards

TS ISO 11684 (02.02.1999) / Tractors, machinery for agriculture and forestry, powered lawn and garden equipment- safety signs and hazard pictorials- general principles

TS EN ISO 4254-12 (12.06.2013) / Agricultural machinery-Safety -Part 12: Rotary disc and drum mowers and flail mowers

Issued at IZMIR-TURKEY, February 23.2017

Authorized Signatory

Ahmet KOÇ
Production Manager

Ahmet Koç (Production Manager)



MINOS AGRICULTURAL MACHINERY

Fatih Mah. 1191 Sok. No: 17/A 35414 Gaziemir/ İZMİR-TÜRKİYE

Ph: +90 232 281 54 04 - 281 63 30/ 31 Fax: +90 232 281 57 10

Web: www.minosagri.com e-mail: info@minosagri.com

WARRANTY CERTIFICATE

MINOS warrants, for the period of 1 year.

Machine details

BRAND

PRODUCT NAME

MODEL

T-TCBM 1350 T-TCBM 1350-H

T-TCBM 1650 T-TCBM 1650-H

T-TCBM 1900 T-TCBM 1900-H

PRODUCT CODE

MANUFACTURE YEAR

Machine details

Title:

Address:

Tel:

Fax:

Date and Number of invoice:

Signature&Seal

WARRANTY CONDITIONS

- Warranty period is one (1) year commencing from the delivery date of the product.
- The product and all parts thereof are under the warranty of our company.
- If the product breaks down during the warranty period, the period of repair is added to the warranty period. The maximum period of repair of the product is 20 working days. This period starts when the product is delivered to a service centre, or in absence of a service centre, to the seller, dealer, agency, representative, importer or manufacturer in order.
- In the event that the product breaks down due to material or workmanship faults or installation faults, it will be repaired free of charge, without charging any fees due to labour, replaced part or anything else.
- In the following events, the product shall be replaced free of charge:
 - I-The product repeats the same defect more than twice or different faults more than four in one year, however, in any case within the warranty period, and as a result, periods during which meter is out of service become continuous.
 - II-Maximum period necessary for its repair is exceeded.
 - III-With a report issued by a service centre, or in absence of a service centre, by the seller, dealer, agency, representative, importer or manufacturer in order, the repair of the meter is determined as impossible.
- Breakdowns due to improper operation of the product not observing the instructions in the operating manual are not covered by warranty
- For problems with the warranty certificate, consumers may apply to the Republic of Turkey Ministry of Science, Industry and Technology, General Directorate of Protection of Consumers and Competition.
- Failures arising from the use of product against the consideration specified in the user's guide are unguaranteed.



This warranty provided by Minos Agricultural Machinery does not cover any faults caused by any abnormal or unintended use of the meter.

We declare:

- That during the warranty period, the product will operate flawlessly, if you use it in accordance with its purpose and the enclosed instructions;
- That upon your request, we will repair any defect of the machine if you inform us of it during the warranty period. The warranty takes effect from the date of purchase of the product, evident from the certified warranty certificate and the receipt.
- The machine is designed to reap all kinds of feed plants, grass, meadow grass, heath and wild plants bordering the roads with blades rotating at a high annulus velocity and existing in both of the 2 drums rotating reversely to each other and leaves them behind in the form of barrel.

The warranty becomes invalid due to:

- Failure to comply with the enclosed instructions;
- Damage and faults caused by improper use;
- Usage of an unsuitable PTO shaft;
- Negligent handling of the product, overloading which leads to the fracture of any parts;
- Interference with the product by an unauthorised person;
- Damage caused by mechanical shock due to the fault of the buyer or a third person;
- Damage caused by flooding, fire, lightning;
- Damage and faults caused during transport, shipment, loading and unloading;

- Damage and faults caused by fire, lightning, flood and earthquake (natural disasters), inappropriate environment and accidents;
- Faults caused by installation or connection of the meter not in compliance with the installation and operating manual;

The warranty will be valid only for the period stated on the reverse side of this certificate and the faults at the product, and no other right or damages under any reason whatsoever can be claimed.

In the events that the warranty certificate is destroyed or defaced, that the serial number on the product is removed or destroyed, the warranty certificate will become null and void. Any warranty certificate not bearing the seal and authorised signature of the seller and the date of sale will not be valid.

MINOS is liable for damages it caused by intentional and deliberate damages, not for minor negligence. Besides, it will not be liable for the results, including but not limited to the interruption of business activities or loss from profit due to this reason, or any loss caused as a result of the failure of a duty due to the breakdown of the product.

If there is any defect in the product, the defective product shall be sent to MINOS with risks and expenses on customer's account.

The defects of the product will be removed by MINOS by replacing a new one or repairing the same.

When reporting a defect by phone or in writing, please inform our representative of:

- The name, model, serial number and manufacture year of the product;
- The nature of the defect;
- Your full address.



Dear Customer!

You have purchased one of the best built, most reliable rotary mowers available and you have chosen it from our wide product range. Congratulations! We strive to provide you with a rugged, durable unit which is simple to maintain and we are sure that you will be satisfied with it. We sincerely thank you for your confidence.

Minos presents the experiences about agricultural machinery to the farmers by the modern equipments like rotary drum mowers. The machines are designed to reaps all kinds of feed plants, grass, meadow grass, heath and wild plants bordering the roads with blades rotating at a high annulus velocity and existing in both of the 2 drums rotating reversely to each other and leaves them behind in the form of barrel.

With the advantage of adjustable cutting height and the high quality of the cutting height, the nutrient values of the plant are preserved and drying is made possible in a short time.

With its little power requirement, it operates in a high-quality manner without tiring the tractor.

The belts are tightened by means of a spring and thus the safety is ensured on the pulley mechanism.

Its adaptation to the unevenness of the ground is highly successful.

Any person who will be operating or maintaining this mixer should first read and understand this manual and all safety warnings on the unit.

This introducing and operating manuel should always be available to those responsible for the operation and maintenance of this mixer. It is the owner's responsibility to provide this safety information to his operators and employees.

Any person who does not understand the safety and operation instructions contained in this manual should not be considered qualified to operate this mixer.

This manual has been designed to help you become familiar with your unit. Before you operate your unit, be sure you understand and follow all the operation, lubrication, and safety instructions on the following pages in this manual. These have been written for your safety and convenience, and to keep your unit running trouble-free for many years.

This manual should be considered a permanent part of your machine, and should remain with the machine if you sell it.

In the event that you experience an issue that has not been addressed in this manual, contact our company for help; you must state the model and serial number of you equipment in order for us to help you with your inquiry. This is necessary in order to resolve issues quicker and provide better services.

Regards,

MINOS AGRICULTURAL MACHINERY

Fatih Mah. 1191 Sok. No: 17/A 35414 Gaziemir / İZMİR-TÜRKİYE

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EC DECLARATION OF CONFORMITY
WARRANTY CERTIFICATE
CAUTIONS ABOUT THE WARRANTY
THANK YOU FOR CHOOSING MINOS!

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Minos Agri Company offers you the TTCBM Rotary Drum Mower which is driven by the tractor tail spindle and connected to it with three point hitch system. It reaps, the feed plants, grass, meadow grass as well as wild plants and heath bordering the roads. It achieves high capacity with low power consumption and provides propellant saving. The action is transmitted serially through its three fold belt pulley. The belt of the pulley mechanism is tightened with a spring. It has an automatic security system. Reaping height can be adjusted. Adjustment is possible for road and work status. Besides the instructions from this booklet take into consideration all generally used safety and accident regulations before working with the machine.

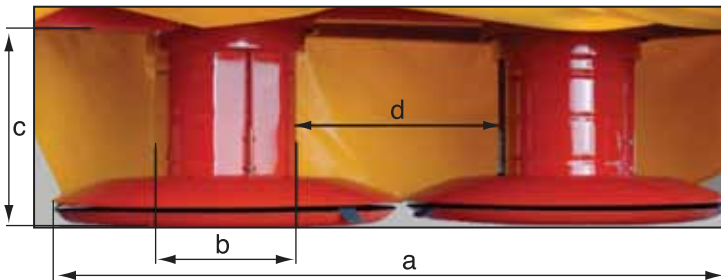


Figure 1 – Dimensions of Rotary Drum Mower

Technical Specifications

General length (transport position)	3200 mm
General length (working position)	1340 mm
General width (transport position)	1340 mm
General width (working position)	3240 mm
General height	965 mm
Mowing width (a)	1650 mm
Drum diameter (b)	300 mm
Drum height (c)	460 mm
The distance between the drums (d)	490 mm



ATTENTION!

WHILE THE MACHINE IS CONNECTED TO THE TRACTOR AND IF THE TRACTOR IS IN WORKING POSITION.

TRANSPORTING :

- Never carry anyone or any animal on the machine.
- Pay attention on the traffic rules on public roads.
- Check out the lightening, warning decals, and protection guards before starting to work.
- Pay attention to work with the machine in the daylight. Especially at nights in public roads take care to have safety decal (light decal apparatus) on the machine

Transporting the machine,

1. Transporting with forklift :

You must choose a forklift according to the weight of the machine. Hold the machine from its weight center. Connect the forklift hook on the machine from the weight center. Start transporting the machine.

2. Transporting with crane:

This method is same as transporting with forklift. Hold the machine from its weight center by crane. Pay attention if the security lock of the crane's hook is working safely.

3. Transporting with palette:

Choose palette according to the machine dimensions. Transport the machine by forklift while it is on palette.



ATTENTION!

PAY ATTENTION TO BE NOT UNDER THE MACHINE WHILE TRANSPORTING

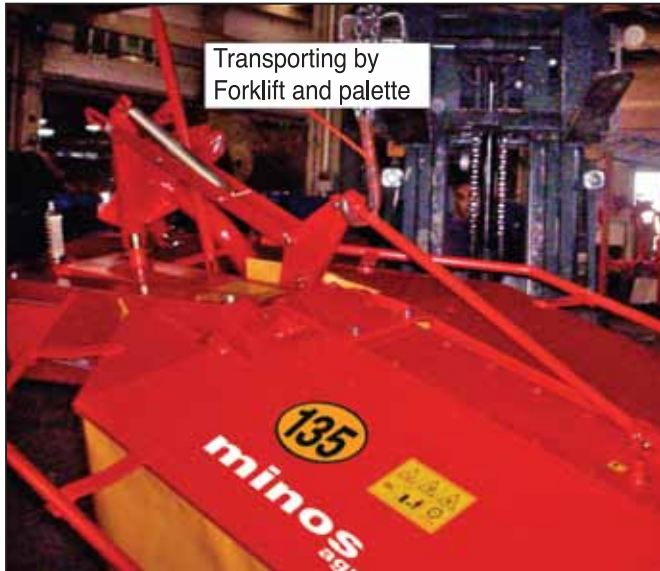


Figure 2- Transporting the machine by Forklift and palette



ATTENTION!

TAKE CARE OF THE HOOKS AND IRON ROPES OF THE CRANE AND FORKLIFT TO BE SAFETY ENOUGH.





INTRODUCING THE MACHINE

Drum Mower has been designed for mowing of all kinds of grass and clover on clean surfaces. It consists of a cutter with 2 drums, where each of them is equipped with 3 knives. Drums are turnably fastened to the cutter-bar housing. Protection covers, covering the cutter bar from the top, are also fastened to the cutter bar housing. The cutter bar is surrounded by protection curtain. Three point hitch for connection to the tractors of the I or II category is made of round tube. Mower drive is led from the tractor over the P.T.O Shaft to the connecting shaft of the mower, belt transmission, gear-box transmission shaft to the gears in the gear-box and over them to the drums. Mower is equipped with a safety fuse which protects it from damages which may occur if the mower hits an obstacle.

The main parts of the machine:

1. Main Holder
2. Cutter-bar(gear box)
3. Three point hitch system
4. Belt drive
5. Drums
6. Support Leg
7. Knife holder
8. Stretcher spring
9. Upper disc
10. Knife
11. Protection plate
12. Curtain

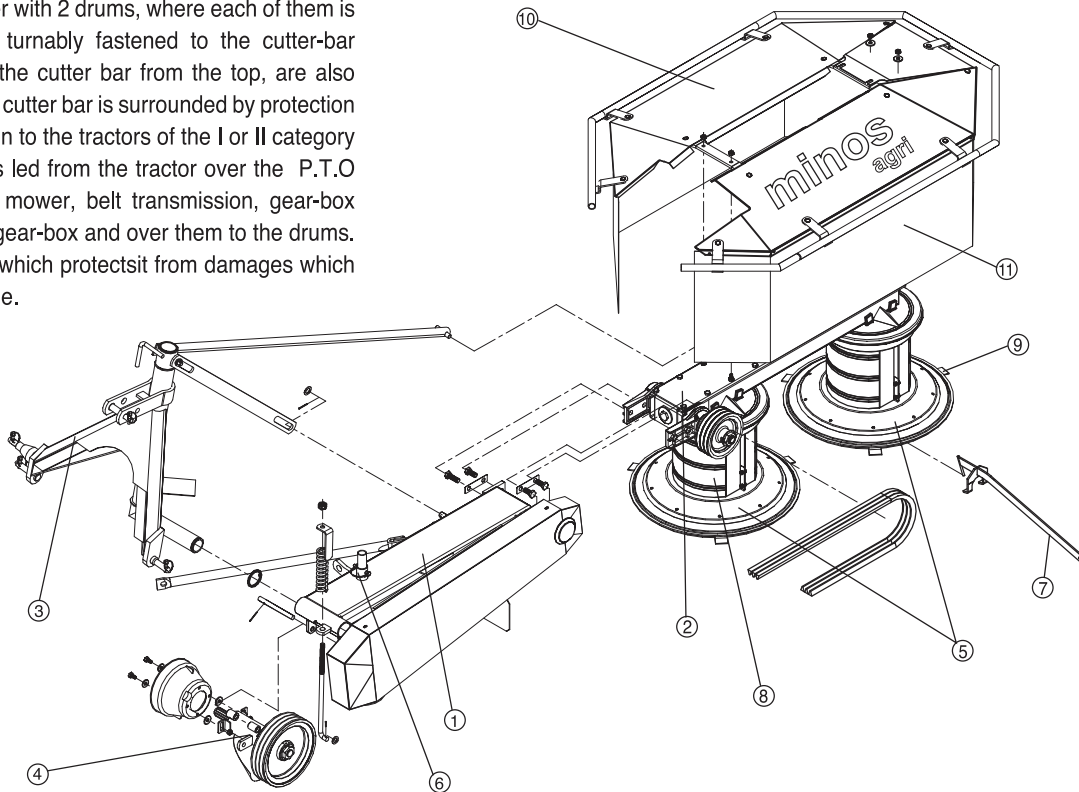


Table 3- Main parts of the machine



PREPARING THE MACHINE FOR WORK

Required Tractor Equipment,

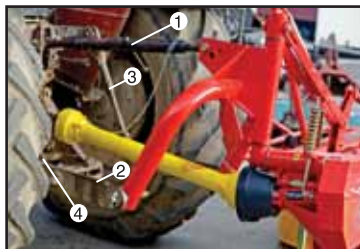
- Mower may only be driven by a tractor shaft with max. 540 rpm.
- 3 point connecting bars of the I or II category

Connection to the tractor ,

Firstly connect the lower non adjustable arm then adjustable arm at the end connect upper connection arm. While disconnecting the machine do the opposite. The machine should be positioned as near to the tractor as possible, for using the whole working width (Fig. 4).



Figure 4- Connection to the tractor



1-Upper hitch arm
2-Lower hitch arm
3-Right hanger arm
4-Left hanger arm

- The main holder on the machine can be connected to the three point hitch system while the tractor is parallel to the ground as shown in the (Fig.4).
- Connect the prescribed P.T.O shaft and secure the P.T.O shaft connection by a chain (Fig.4).
- Make sure that the P.T.O shaft is in proper position on both ends.
- If the load in front wheels is not enough put additional load.

Adjustment of the P.T.O Shaft,

The adjustment of the P.T.O shaft is necessary for different tractors. To find out the right length.

- Connect the machine to the tractor .
- Pull out the P.T.O shaft entirely and connect each separate half of the shaft to the tractor and then compare them with each other .
- In case you need to shorten the P.T.O shaft, make sure you shorten both shafts and protection tubes for exactly the same length.



Figure 5- Adjusting the length of the P.T.O shaft to the proper dimension for the tractor.

- File the end of the tube, remove the remainings of filling and lubricate gliding spots well.
- K T4 101 910 100 (covered, triangle piped 400 serial, machine side 1 3/8 Z6, tractor side 1 3/8 Z6 -1000 mm length) shaft is used in Rotary Drum Mower.
- P.T.O shaft can only be connected when the P.T.O connection and engine are switched off and the ignition key is pulled down.

Preparation of the mower for transport position

If the machine is connected to the tractor and the machine is in transport position, take the pto shaft in safety by the chain. In working position connect the pto shaft to the tractor.



PREPARING THE MACHINE FOR WORK



Figure 6- Transport position.



Figure 7- Disconnect the tension spring (1)



Figure 8- Connect the tension pin and control (2)



Figure 9- Lowering of the Mower from the transport into the working position, (3)

In working position connect the P.T.O shaft to the tractor



Protection Chain



Figure 10- Lowering of the Mower from the transport into the working position,



Regulation of cutting height:

- The machine must be in horizontal position when it is connected to the tractor. **2**
 - By turning the tractor upper arm regulate the cutting height. **1**
 - Fasten the tractor bottom arm, so you can prevent the vibrations on the machine while it is working. **3**
- For a regular cutting, the cutting unit of the machine should not be higher or lower distance from the ground.

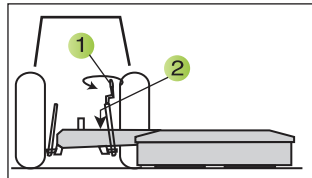


Figure 11- Regulation of cutting height

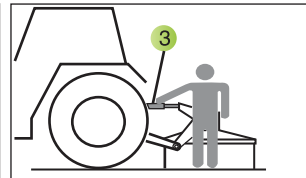


Figure 12- Fastening of tractor bottom arm

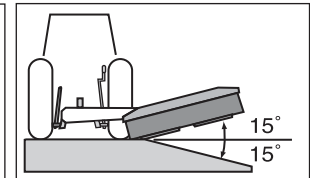


Figure 13- Working angle of the machine to the ground



PREPARING THE MACHINE FOR WORK



ATTENTION!

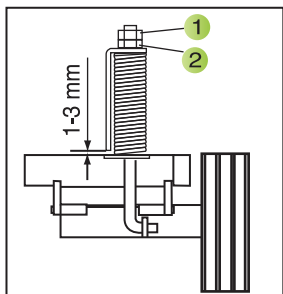
NEVER TOUCH THE MACHINE WITH HAND, FOOT WHILE IT IS WORKING.

Replacement of the protection curtain:

- Untighten the screws for fastening the protection curtain.
- Pull the curtain out of the notch.
- Install new curtain and fasten it by screws.

Protection of the Mower:

Drum mower is equipped with a safety fuse, which gets released when the mower hits an obstacle. Mower moves backwards. In this case stop immediately and pull backwards so that the safety fuse will get contact



again. Do not forget to remove the obstacle before starting to mow again. The safety fuse does not function when driving backwards. In case the safety fuse is released too fast at normal working, adjust in by a nut. (Fig.14)

Figure 14- Belt tightening working with Drum Mower

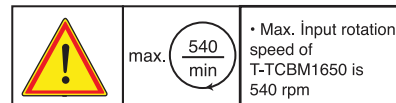
Belt tightening:

The vee-belts are mostly stretched in the first working hours. On the tightening device there is a spring that enables the belts to remain tightened inspite of the stretching. We advise you to control the level of tightening from time to time (Pic.14)

Attention:

If you tighten the belts more than necessary, there is a danger of damaging the bearings and shafts.

- Pay your best attention to proper mounting and securing of the P.T.O shaft.



ATTENTION!

STOP THE ENGINE! THEN ADJUST AND PREPARE THE MACHINE FOR WORK

- Make sure that nobody is in the area of danger of the implement before switching on the P.T.O shaft connection.
- When working with the P.T.O shaft connection nobody is allowed to be in the area of rotating connection on the P.T.O shaft.
- After switching off the P.T.O shaft connection the danger of rotating heavier parts remains. Do not get close to the implement during this period. You can start to work only when the rotation is completely stopped.
- P.T.O shaft protection must be fitted on. And must be in perfect condition.
- Use only original P.T.O shafts prescribed by your manufacturer. Because the manufacturer will not take any responsibility if another shaft is used.

Transporting the machine to the field to prepare for work:

- Start the engine of the tractor for a minute. Hold the machine with main hydraulic arm. Attach the security lock for not to damage to the hydraulic system while driving. Stretch the stretching chains to prevent swinging. Transport the machine empty (without fertilizer) to the field. Fill the fertilizer to the tank in the field.
- In transporting position, raise the machine up and lock the security pin to prevent the machine fall down.
- In turnings, take into consideration the load which is outside the centre of gravity and/or constant weight of the implement.
- Working with tractor in the tendency fields can give damage to the machine. But if you have to work in these tendency fields take care of working, do not turn the road bend fastly and sharply. For working in tendency fields you must be careful about if the tractor is decked out with the additional weights.



ATTENTION!

MAINTENANCE, REPAIRS, CLEANING MAY ONLY BE EXECUTED WHEN THE DRIVE AND THE ENGINE ARE SWITCHED OFF AND THE IGNITION KEY IS PULLED OUT.

T-TCBM165 Drum Mower is produced by full of quality. So this machine will not need so much maintenance and repair after working with the machine.

Take care about the items that is written below for maintenance and repair :

- 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:

- Do not use high pressure water 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.
- The knife has 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

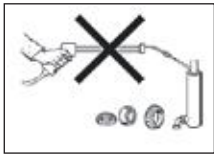


Figure 15- Cleaning of machine parts

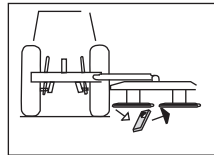


Figure 16- Wearing of the knives

Replacing the knives:

- Support the lever against the lower edge of the drum and press the flexible holder on the lower end of which is fixed the cutter 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 holder has returned to the initial position and whether the knife removes the knife revolves freely on the pin (Fig.17).



Figure 17- Replacing the knives

- Check the weariness of the knives more frequently on stony ground.
- Check normally every 100 hours.
- Check the mowing blade mountings more frequently when mowing on stony ground.

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

- Remove bottom disc.
- Undo nuts on knife mountings.
- Tighten bolts firmly and check aftersome hours operation.

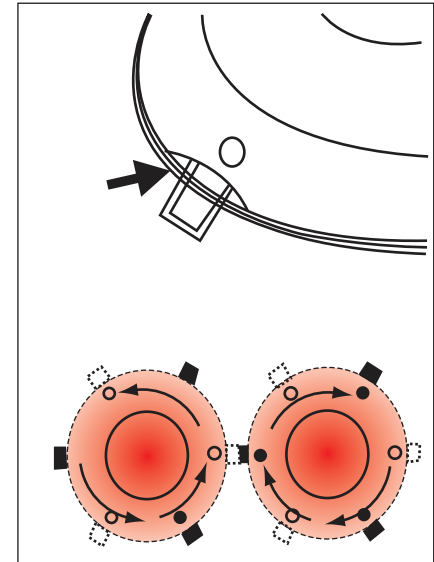


Figure 18- Changing of worn bottom disc



CONTROL(A)	MAINTENANCE(B)			VARIATION(C)		
Maintenance Period ==>	Daily	Weekly	30 Hours	100 Hours	400 Hours	
Lubrication (Level control of gear box oil)			A			
Variation of oil(BR000)						C
Oil leakage control	A					
Wearness control of drums	A					
Lub.grease nipples		B				
Tightness control (bolt-nut)	A					
Cleaning	B					

Table 3 - Maintenance Periods

Lubrication :

- Lubricate with grease before starting work and every 8 hours worked.
- Before any extended period of non-use, clean and lubricate driveshafts
- For winter working, grease the tube guards, to avoid them freezing together
- 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 the machine (winter season) an oil change and greasing of all lubricating points has to be done. Unprotected metal parts outside (joints e.t.c) have to be protected against corrosion

The oil in the gear-box is 15-16 kg.

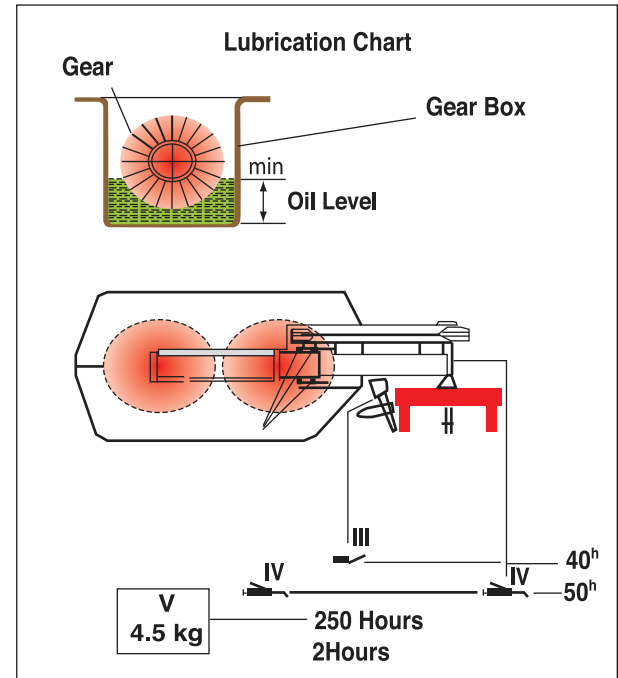


Figure 19- Lubrication chart



Safety decals:

There are 3 types of main safety decals. These are shown as,

Danger :

When you see this alert symbol and heading be alert to the danger of injury of death of men and animals.

Alert :

When you see this heading, be alert to the possibility of serious injuries because of using the machine out of the using rules.

Attention :

When you see this heading, be alert to the possibility of damage to equipment, crop, building, etc. but to financial and / or juridical problems as well.



ATTENTION!

READ OPERATORS MANUAL BEFORE STARTING TO WORK WITH THE MACNINE.

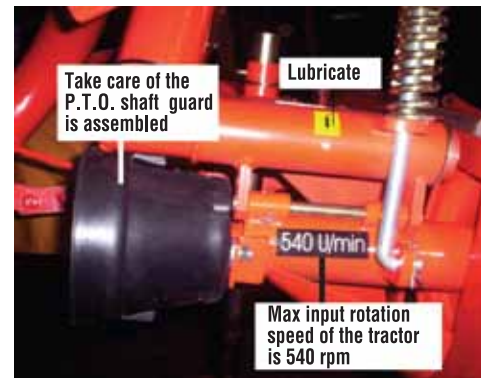
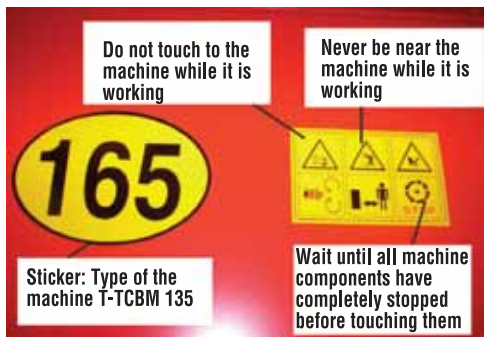


Figure 20- Alert Decals

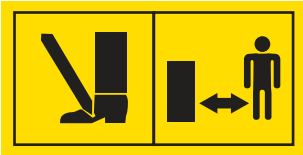


01



- Do not open or remove safety shields while the engine is running

02



- Stay clear of mower knife area as long as tractor engine is running

03



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

04



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

05



- Stay clear of swinging area of implements.

06



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

All machines have stickers glued on. In this stickers machine type, address of manufacturer, machine serial number, model of the machine is prescribed.

- Make sure you get familiar with all devices and elements for handling and with the functions before starting with the work.

- Avoid wearing loose-fitting clothes. Clothes should fit tight to the operator's body..

- Implements should be connected according to the instructions, fastened to the prescribed devices and secured.

- Never left the driving seat during driving.

- Strating devices for remote control should be secured in a way that, they can not be unintentionally released during transport or work.

- When disconnecting the machine from the tractor, place it on the flat ground..

- Never jump, sit or climb on the machine while it is connected to the tractor.

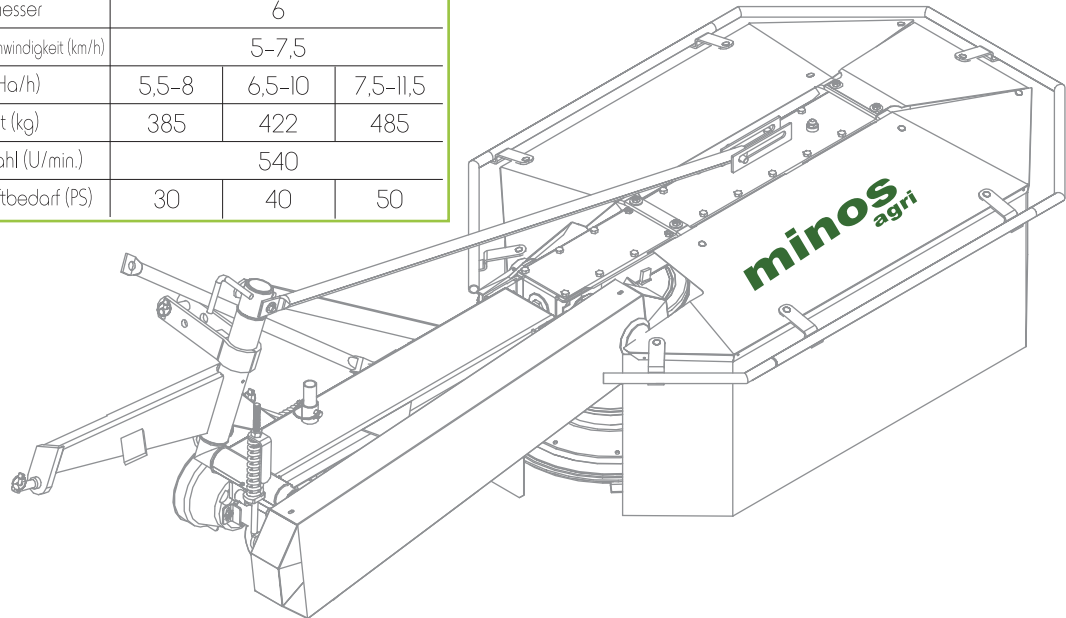
- Stopping or operating the machine must be done by the driver. No one may drive the tractor except the driver.

- Use protection for hearing and glasses while working with the machine if the tractor does not have a closed cabin.



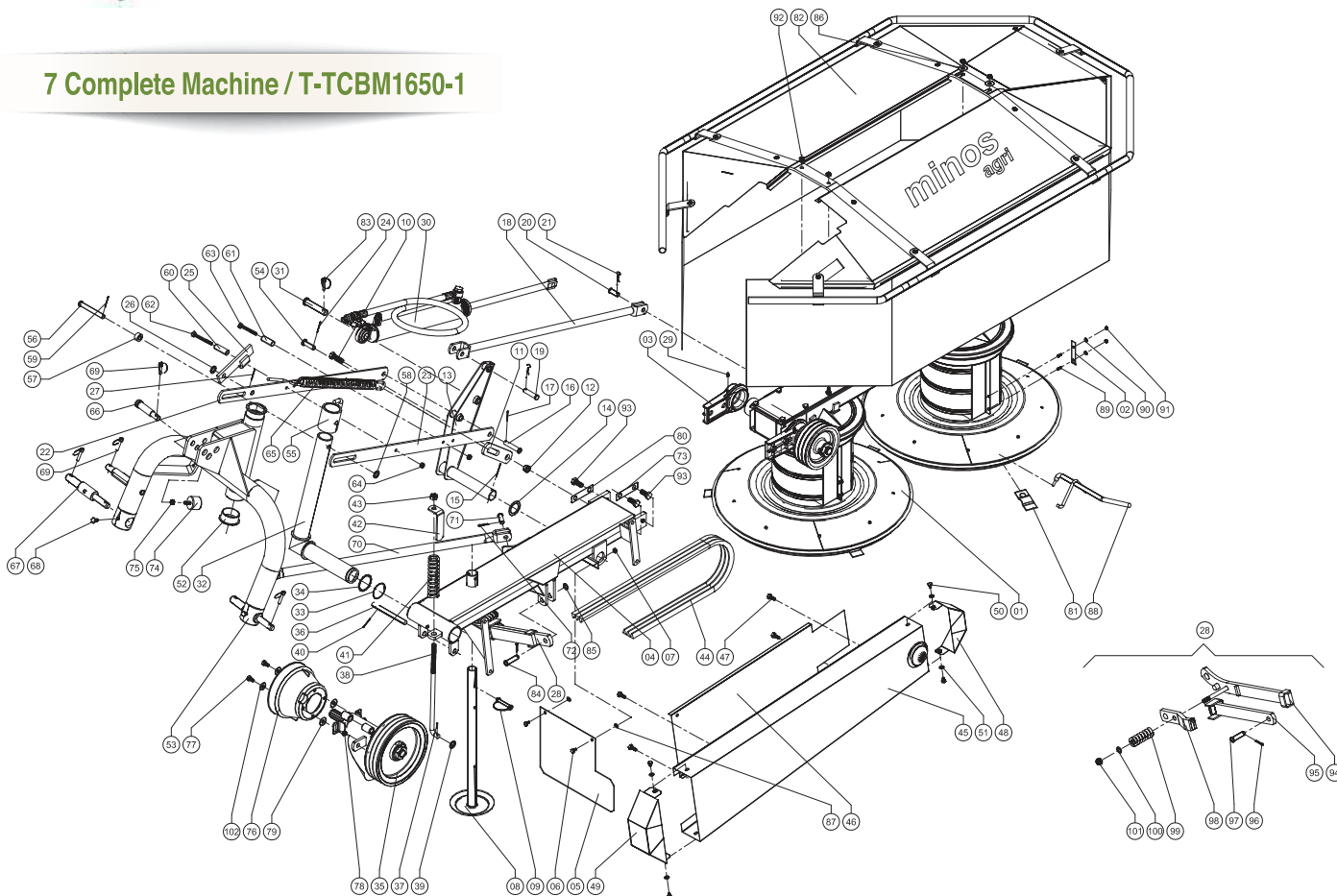
TECHNICAL SPECIFICATION / TECHNISCHE DATEN		T-TCBM 1350	T-TCBM 1650	T-TCBM 1900
Machine code (Order number)	Maschinenbezeichnung (Bestellnummer)	20401103	20401204	20401304
Working Width (mm)	Arbeitsbreite (mm)	1350	1650	1900
Transport Width (mm)	Transportbreite (mm)	1175	1518	1500
Transport Length (mm)	Transportlänge (mm)	2962	3185	3456
Overall Height (mm)	Gesamthöhe (mm)	990	1075	1035
Number of Drums	Anzahl der Mähtrömmeln	2		
Number of Blades	Anzahl der Mähmesser	6		
Optimal Working Speed (km/h)	Optimale Arbeitsgeschwindigkeit (km/h)	5–7,5		
Capacity (da/h)	Flächenleistung (Ha/h)	5,5–8	6,5–10	7,5–11,5
Machine Weight (kg)	Maschinengewicht (kg)	385	422	485
P.T.O. Shaft Rotations (max) (min ⁻¹)	Zapfwellendrehzahl (U/min.)	540		
Required Tractor Power (HP)	Erforderlicher Kraftbedarf (PS)	30	40	50

Table 4 – Technical values





7 Complete Machine / T-TCBM1650-1





SPARE PARTS LIST

7 Complete Machine / T-TCBM1650-1

Pos. number	Amount	Order Number	Explanation	Norm	Old Number
01	1	10401201.011.000000000 10401204.021.000000000	Gear box Group with piston Gear box Group without piston		T-TCBM 1651-1.2P T-TCBM 1651-1.2
02	4	92150.0040121.026	Crusher knife		510.04.027.0 (T-TCBM 1651-1.2.59)
03	1	10401201.431.000000000	Joint		T-TCBM 1651-1.2.46
04	1	10401201.021.000000000	Welded main holder		T-TCBM 1651-1.3.1
05	1	10401201.181.000000000	Gaiter plate		T-TCBM 1651-1.3.20
06	2	93021.0000000.157	Hexagonal bolt	DIN 933	ÇİVATA AKB M8x1,25x20 8.8
07	2	93082.0000000.015	Hexagonal fiber nut	DIN 985	SOMUN FİBERLİ M8x1,25
08	1	10401201.031.000000000	Support leg		T-TCBM 1651-1.3.18
09	1	92060.1501002.005	Spring pin		T-0T-1.23
10	1	93021.0000000.099	Hexagonal bolt	DIN 933	ÇİVATA AKB M16x2x50 8.8
11	1	10401201.191.000000000	Connection plate		T-TCBM 1651-1.1.13
		92160.0401201.025	Connection bush		T-TCBM 1651-1.10
13	1	10401201.601.000000000 10401204.011.000000000 10401201.041.000000000	Charging bar with piston and curtain Charging bar without piston but with curtain Charging bar with piston but without curtain		T-TCBM 1651-1.1.7C T-TCBM 1651-1.1.7 T-TCBM 1651-1.1.7
		10401201.212.000000000	Main holder and charging washer		T-TCBM 1651-1.26
15	1	93120.0000000.013	Cotter pin	DIN 94	KOPİLYA 6x70
		10401201.232.000000000	Charging bar connection pin		T-TCBM 1651-1.1.23
17	1	93120.0000000.008	Cotter pin	DIN 94	KOPİLYA 5x40

Pos. number	Amount	Order Number	Explanation	Norm	Old Number
18	1	10401201.051.000000000	Complete gear-box upper pipe		T-TCBM 1651-1.1.8
19	1	10401201.242.000000000	Complete gear-box upper pipe connection pin		T-TCBM 1651-1.1.24
20	1	92160.0401201.028	Connection pin		T-TCBM 1651-1.3.16
21	2	93100.0000000.001	Pin		FİRKETE MAŞALI Ø3
22	1	10401201.061.000000000	Complete stretcher lama		T-TCBM 1651-1.1.10
23	1	10401201.251.000000000	stretcher lama 2		T-TCBM 1651-1.1.11
24	1	93120.0000000.008	Cotter pin	DIN94	KOPİLYA 5x40
25	1	10401201.071.000000000	Locking part		T-TCBM 1651-1.1.9
26	1	93062.0000000.007	Flat washer	DIN 125	RONDELA DÜZ M16
27	1	93120.0000000.001	Cotter pin	DIN94	KOPİLYA 3x30
28	1	10401201.080.000000000	Comple safety mechanism		T-TCBM 1651-1.28
29	3	93110.0000000.005	Flat nipple	DIN 71412	GRESÖRLÜK DÜZ M6
30	1	10401201.090.000000000	Piston group (Optional)		T-TCBM 1651-1.1.30
31	1	10401201.452.000000000	Piston connection pin		T-TCBM 1651-1.1.31
32	1	10401201.101.000000000	Hitch crooked level		T-TCBM 1651-1.1.4
33	1	93261.0000000.016	Circlip	DIN471	SEGMAN MİL Ø60x2 CK75
34	1	10401201.611.000000000	Special slim washer		T-TCBM1651-1.96



SPARE PARTS LIST

7 Complete Machine / T-TCBM1650-1

Pos. number	Amount	Order Number	Explanation	Norm	Old Number	Pos. number	Amount	Order Number	Explanation	Norm	Old Number
35	1	10401201.111.000000000	Pulley and Bearing Housing Group		T-TCBM 1651-1.4	52	2	92070.0401201.001	Plastic bush		T-TCBM 1651-1.1.5
36	1	10401201.262.000000000	Connection spindle		T-TCBM 1651-1.14	53	1	10401201.481.000000000 10401201.131.000000000	Three point hitch group (New type) Three point hitch group (Old type)		T-TCBM 1651-1.1.1Y T-TCBM 1651-1.1.1E
37	1	93120.0000000.008	Cotten pin	DIN94	KOPİLYA 5x40	54	1	92160.0401201.024	Charging bar connection pin		T-TCBM 1651-1.1.22
38	1	10401201.272.000000000	Stretcher drop bolt		T-TCBM 1651-1.15	55	1	10401201.331.000000000	Cast hat		T-TCBM 1651-1.1.6
39	1	93062.0000000.007	Flat washer	DIN 125	RONDELA DÜZ M16	56	1	92160.0401201.018	Cast hat connection pin		T-TCBM 1651-1.1.16
40	1	93120.0000000.008	Cotter pin	DIN94	KOPİLYA 5x40	57	1	10401201.352.000000000	Distance bush 1		T-TCBM 1651-1.1.17
41	1	10401201.282.000000000	Stretcher drop bolt	DIN 17223	T-TCBM 1651-1.17	58	1	93062.0000000.007	Flat washer	DIN 125	RONDELA DÜZ M16
42	1	10401201.292.000000000	Stretcher plate		T-TCBM 1651-1.18	59	1	93120.0000000.008	Cotter pin	DIN94	KOPİLYA 5x40
43	1	93081.0000000.006	Hexagonal nut	DIN 985	SOMUN AKB M16x2	60	1	10401201.362.000000000	Distance bush 2		T-TCBM 1651-1.1.14
44	3	93030.0000000.031	V-Belt		KAYIS-V 17x2850	61	1	10401201.372.000000000	Distance bush 3		T-TCBM 1651-1.1.15
45	1	10401201.121.000000000	Belt guard		T-TCBM 1651-1.3.2	62	1	93021.0000000.021	Hexagonal bolt	DIN 933	CIV-M10x1.5x90x25-8.8
46	1	10401201.301.000000000	Protection plate		T-TCBM 1651-1.3.3	63	1	93021.0000000.020	Hexagonal bolt	DIN 933	CIV-M10x1.5x80x25-8.8
47	4	93021.0000000.008	Hexagonal bolt	DIN 933	CİVATA AKB M10x1,5x20 8.8	64	2	93082.0000000.001	Hexagonal fiber nut	DIN 985	SOMUN FİBERLİ M10x1,5
48	1	10401201.311.000000000	Big pulley cover plate		T-TCBM 1651-1.3.24	65	1	10401201.382.000000000	Three point hitch spring	DIN 17223	T-TCBM 1651-1.1.12
49	1	10401201.321.000000000	Small pulley cover plate		T-TCBM 1651-1.3.13	66	1	10401201.392.000000000	Hitch pin		T-TCBM 1651-1.1.25
50	4	93021.0000000.153	Hexagonal bolt	DIN 933	CIV-M8x1,25x12-8.8	67	2	10401201.402.000000000	Lower hitch pin		T-TCBM 1651-1.1.2
51	4	93062.0000000.015	Flat washer		RONDELA DÜZ 5/16" KALIN	68	2	93021.0000000.009	Hexagonal bolt	DIN 933	CİVATA AKB M10x1,5x25 8.8



SPARE PARTS LIST

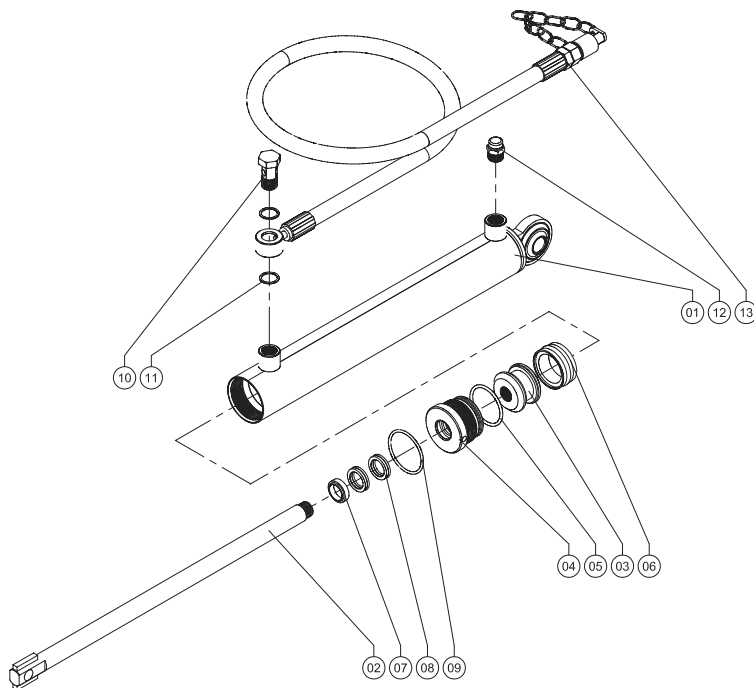
7 Complete Machine / T-TCBM 1650-1

Pos. number	Amount	Order Number	Explanation	Norm	Old Number
69	4	93240.0000000.003	Perch pin		PİM ARMUT BAŞLI MAŞALI Ø10
70	1	10401201.141.000000000	Main holder side pipe		T-TCBM 1651-1.3.15
71	1	92160.0401201.028	Side pipe connection pin		T-TCBM 1651-1.3.16
72	1	93120.0000000.008	Cotter pin	DIN94	KOPİLYA 5x40
73	1	10401201.422.000000000	Support plate 3		T-TCBM-1651-1.09
74	1	93025.0000000.005	Hitch filler block		LASTİK TAKOZ Ø50x30 M10
75	1	93082.0000000.001	Hexagonal fiber nut	DIN 985	SOMUN FİBERLİ M10x1,5
76	1	92070.1202510.001	Plastic shaft cover		T-TCBM-MUHAFAZA
77	2	93021.0000000.009	Hexagonal bolt	DIN 933	CİVATA AKB M10x1,5x25 8.8
78	2	93082.0000000.001	Hexagonal fiber nut	DIN 985	SOMUN FİBERLİ M10x1,5
79	2	10401201.110.022000000	Shaft cover's special washer		T-TCBM 1651-1.11
80	1	10401201.010.142000000	Support plate 3		T-TCBM 1651-1.2.66
81	6	92080.0401201.001	Knife RADURA 120 cm		T-TCBM 1651-1.2.64
82	1	10401201.501.000000000	Curtain group		T-TCBM 1651-1.5
83	1	93240.0000000.003	Perch pin		PİM ARMUT BAŞLI MAŞALI Ø10
84	1	10401201.242.000000000	Gear box upper pipe connection pin		T-TCBM 1651-1.1.24
85	1	93062.0000000.007	Flat washer	DIN 125	RONDELÂ DÜZ M16

Pos. number	Amount	Order Number	Explanation	Norm	Old Number
86	4	93062.0000000.005	Flat washer	DIN 125	RONDELÂ DÜZ M12
87	2	93062.0000000.013	Flat washer	DIN 125	RONDELÂ DÜZ M8
88	1	10401201.161.000000000	Knife key		T-TCBM 1651-1.27
89	8	93021.0000000.139	Hexagonal bolt	DIN 933	CİVATA AKB M6x1x16 8.8
90	8	93064.0000000.007	Spring washer	DIN 127-B	RONDELÂ YAYLI M6
91	8	93081.0000000.022	Hexagonal nut	DIN 985	SOMUN AKB M6x1
92	4	93082.0000000.003	Hexagonal fiber nut	DIN 985	SOMUN FİBERLİ M12x1,75
93	3	93021.0000000.096	Hexagonal bolt	DIN 933	CİVATA AKB M16x2x35 8.8
94	1	10401201.080.041000000	Welded safety plate		T-TCBM 1651-1.3.7
95	1	10401201.080.011000000	Flat safety plate (Long)		T-TCBM 1651-1.3.8
96	1	93120.0000000.008	Cotter pin	DIN94	KOPİLYA 5x40
97	1	10401201.242.000000000	Gear box upper pipe connection pin		T-TCBM 1651-1.1.24
98	1	10401201.080.021000000	Flat safety plate (Short)		T-TCBM 1651-1.3.9
99	1	10401201.080.032000000	Safety spring		T-TCBM 1651-1.3.10
100	1	93062.0000000.023	Flat washer		RONDELÂ DÜZ 9/16" KALIN
101	1	93082.0000000.005	Hexagonal fiber nut		SOMUN FİBERLİ M14x2
102	4	93062.0000000.004	Flat washer		RONDELÂ DÜZ M10



7-1 Piston Group / T-TCBM 1650 - 1.1.30

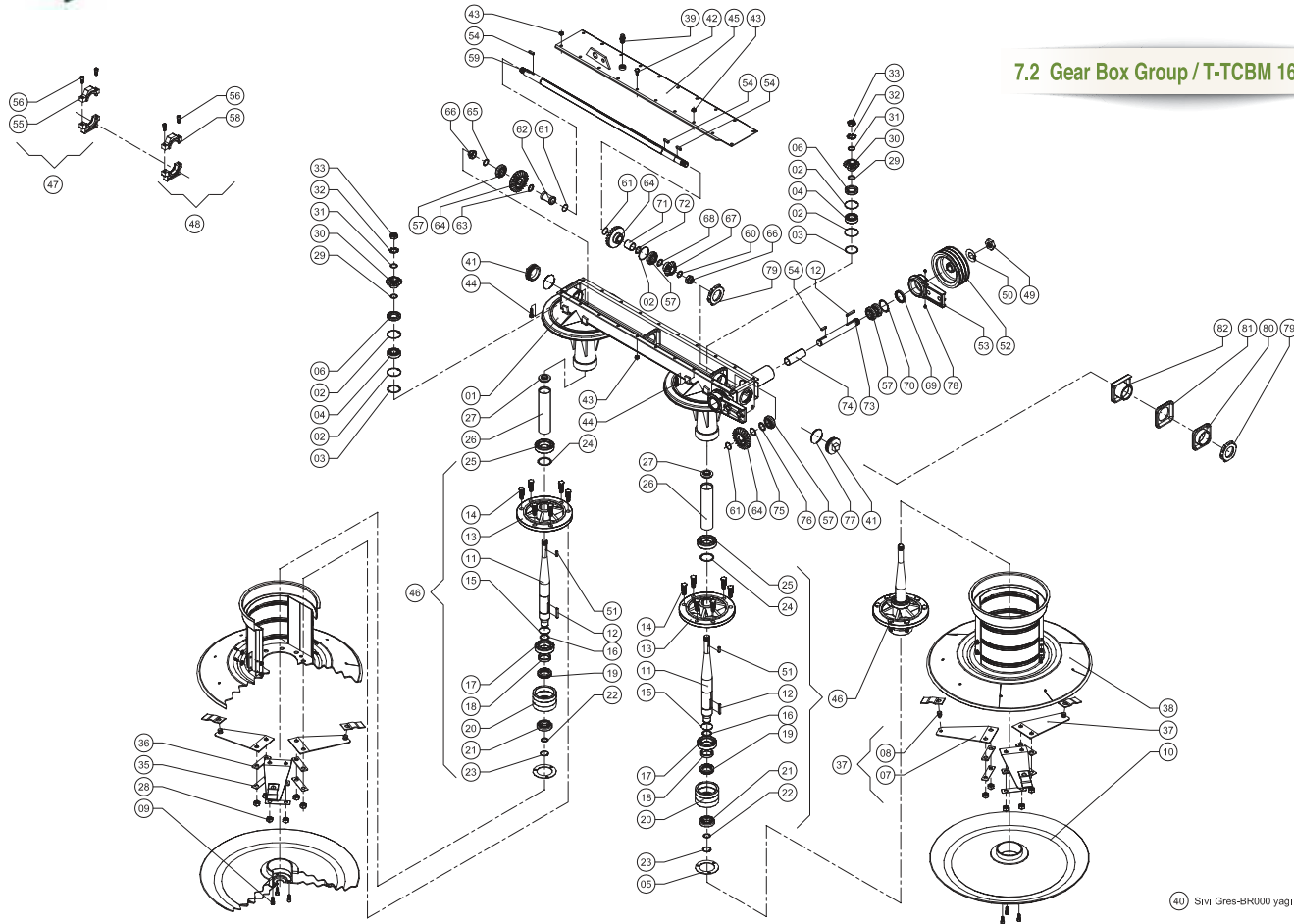


SPARE PARTS LIST 7-1 PISTON GROUP (OPTIONEL) / T-TCBM 1651-1.1.30

Pos. number	Amount	Order Number	Explanation	Old Number
01	1	10401201.090.010000000	Welded piston body	T-TCBM 1651-1.1.30.1
02	1	92160.0401201.041	Piston spindle	T-TCBM 1651-1.1.30.2
03	1	92160.0401201.075	Piston head	T-TCBM 1651-1.1.30.3
04	1	92160.0401201.076	Piston nut	T-TCBM 1651-1.1.30.4
05	1	93050.0000000.007	O-Ring	O-RING 54x4 NBR
06	1	...	Piston-felt	K18 060-044
07	1	...	Dust-felt	KEÇE YAĞ 25x35x5/7
08	2	93041.0000000.085	Oil-felt	KEÇE YAĞ 25x35x7
09	1	93050.0000000.013	O-Ring	O-RING 60x3.5 NBR
10	1	92160.0203401.010	Hydraulic hose connection plug	T-HDR 2109HOK-1.1.23
11	2	93061.0000000.011	Copper washer	RONDELÂ BAKIR M22
12	1	92160.0209103.011	Air plug M20x1,5	T-KMR 130-1.4.18
13	1	92100.0401201.001	Hydraulic hose Ø22 connection plug - quick coupling 1/2"x300CM	HİD-HOR-300 cm



7.2 Gear Box Group / T-TCBM 1650 - 1.2



40 Sıvı Gres-BR000 yağı 6kg.



SPARE PARTS LIST

7-2 Gear Box Group / T-TCBM 1650-1-2

Pos. number	Amount	Order Number	Explanation	Norm	Old Number	Pos. number	Amount	Order Number	Explanation	Norm	Old Number
01	1	10401201.010.011000000	Gear-box		T-TCBM 1651-1.2.1	20	2	92020.0401201.008	Housing		T-TCBM 1651-1.2.13
02	5	93262.0000000.011	Circlip	DIN472	SEGMAN DELİK Ø62x2 CK75	21	2	93071.0000000.019	Bearing	DIN 625	RULMAN 6207 C3 2RS
03	2	93210.0000000.045	Slim washer	DIN 988	SİM 50x62x0,20	22	2	93210.0000000.038	Slim washer		SİM 35x45x2,00
04	2	93071.0000000.044	Bearing	DIN 625	RULMAN 6305 C3 2RS	23	2	93261.0000000.009	Spindle circlip	DIN471	SEGMAN MİL Ø35x1,5 CK75
05	2	92150.0401201.073	Washer		T-TCBM 1651-1.2.70	24	2	93210.0000000.009	Slim washer	DIN 988	SİM 50x62x0,50
06	2	93041.0000000.018	Felt	DIN 3760	KEÇE YAĞ 40x62x10	25	2	93071.0000000.030	Bearing	DIN625	RULMAN 6210 C3 2RS
07	1	92160.0401201.010	Knife pin		T-TCBM 1651-1.2.63	26	2	92160.0401201.062	Distance pipe		T-TCBM 1651-1.2.17
08	1	92150.0401201.017	Knife holder		T-TCBM 1651-1.2.62	27	2	92160.0401201.001	MESAFE BORUSU ÖZEL BURCU		T-TCBM 1651-1.2.18
09	6	93023.0000000.004	Imbus bolt	DIN 912	CİVATA İMB M10x1,5x30 8.8	28	12	93081.0000000.006	Stretcher ring	DIN 934	SOMUN AKB M16x2 8.8
10	2	10401201.010.061000000	Bottom disc		T-TCBM 1651-1.2.68	29	2	92150.0401201.004	Distance washer Ø33x25,5x2		T-TCBM 1651-1.2.5
11	2	92160.0401201.053	Conical spindle		T-TCBM 1651-1.2.7	30	2	92120.0401201.001	Conical gear Z:15		T-TCBM 1651-1.2.20
12	3	93150.0000000.003	Cotter	DIN6885	KAMA 8x7x55 A	31	2	93210.0000000.017	Slim washer	DIN 988	SİM 25x36x1,00
13	2	92020.0401201.007	Flange		T-TCBM 1651-1.2.8	32	2	10401201.010.090000000	Keep plate washer		T-TCBM 1651-1.2.72
14	12	92160.0401201.007	Screw		T-TCBM 1651-1.2.19	33	2	92160.0401201.002	Conical spindle adjustment nut		T-TCBM 1651-1.2.22
15	2	92160.0401201.008	Circlip	DIN 7993	T-TCBM 1651-1.2.78	34	2	92160.0401201.053	Conical spindle		T-TCBM 1651-1.2.7
16	2	93210.0000000.048	Slim washer	DIN 988	SİM 50x62x0,80	35	6	10401201.010.142000000	Support plate 2		T-TCBM 1651-1.2.66
17	2	93071.0000000.030	Bearing	DIN 625	RULMAN 6210 C3 2RS	36	6	10401201.010.132000000	Support plate 1		T-TCBM 1651-1.2.65
18	2	92160.0401201.009	Bearing distance ring		T-TCBM 1651-1.2.11	37	6	10401201.010.051000000	Knife holder montage		T-TCBM 1651-1.2.114 (T-TCBM 1651-1.2.62,-1.2.63)
19	2	93074.0000000.002	Bearing	DIN 711	RULMAN 51109 BBC	38	2	10401201.010.041000000	Upper disc		T-TCBM 1651-1.2.58



SPARE PARTS LIST-1650

Pos. number	Amount	Order Number	Explanation	Norm	Old Number	Pos. number	Amount	Order Number	Explanation	Norm	Old Number
39	1	92160.0209103.011	Air plug M20x1,5		T-KMR 130-1.4.18	60	1	93210.0000000.023	Slim washer		SIM 28x36x0,70
40	1	93130.0000000.002	Liquid hard oil 6 KG.		GRES-BR000	61	3	92160.0401201.003	Wire circlip	DIN 7993	T-TCBM 1651-1.2.24
41	2	92070.0401201.003	Plastic cover		T-TCBM 1651-1.2.39	62	1	92160.0401201.004	Distance pipe		T-TCBM 1651-1.2.25
42	16	93021.0000000.008	Hexagonal bolt	DIN 933	ÇİVATA AKB M10x1,5x20 8.8	63	1	93210.0000000.033	Slim washer	DIN 988	SIM 30x42x0,50
43	20	93082.0000000.001	Nut	DIN 985	SOMUN FİBERLİ M10x1,5	64	3	92120.0401201.002	Conical gear Z: 23		T-TCBM 1651-1.2.27
44	4	93021.0000000.012	Hexagonal bolt	DIN 933	ÇİVATA AKB M10x1,5x40 8.8	65	1	92150.0401201.074	Distance washer		T-TCBM 1651-1.2.29
45	1	10401201.010.031000000 10401204.020.011000000	Gear-box under cover Gear-box upper cover		T-TCBM 1651-1.2.52P T-TCBM 1651-1.2.52	66	2	92160.0401201.005	Gear-box long spindle adjustment		T-TCBM 1651-1.2.30
46	2	10401201.010.023000000	Flange montage		T-TCBM 1651-1.2.101	67	1	92120.0401201.003	Conical gear Z:15		T-TCBM 1651-1.2.34
47	1	92160.0401201.057	Cast hat (complete)		T-TCBM 1651-1.2.73	68	1	93210.0000000.033	Slim washer	DIN 988	SIM 30x42x0,50
48	1	92160.0401201.058	Cast hat (complete)		T-TCBM 1651-1.2.74	69	1	93041.0000000.024	Felt	DIN 3760	KEÇE YAĞ 45x62x7
49	1	92160.0401201.006	Right passed washer		T-TCBM 1651-1.2.77	70	1	93210.0000000.065	Slim washer	DIN 988	SIM 35x45x0,50
50	1	92150.0401201.006	Safety nut plate		T-TCBM 1651-1.4.10	71	1	92160.0401201.063	Distance pipe 2		T-TCBM 1651-1.2.31
51	2	93150.0000000.010	Cotter	DIN 6885	KAMA 8x7x32 B	72	1	93210.0000000.033	Slim washer	DIN 988	SIM 30x42x0,50
52	1	92020.0401201.006	Gear-box pulley		T-TCBM 1651-1.2.47	73	1	92160.0401201.051	Short spindle		T-TCBM 1651-1.2.41
53	1	92020.0401201.005	joint		T-TCBM 1651-1.2.46	74	1	92160.0401201.064	Distance pipe		T-TCBM 1651-1.2.40
54	4	93150.0000000.002	Cotter	DIN6885	KAMA 8x7x30 B	75	1	...	Slim washer		SIM 30x40x0,50
55	1	...	Support part		T-TCBM 1651-1.2.36	76	1	93210.0000000.031	Slim washer		SIM 30x40x1,00
56	4	93023.0000000.005	Imbus bolt	DIN 912	ÇİVATA İMB M10x1,5x35 8.8	77	2	93050.0000000.008	O-Ring		O-RING 55x2,5
57	4	93071.0000000.017	Bearing	DIN 625	RULMAN 6206 C3	78	2	93110.0000000.005	Flat nipple	DIN 71412	GRESÖRLÜK DÜZ M6
58	1	-----	Support part		T-TCBM 1651-1.2.57	79	1	92020.0040124.004	Claw nut		510.03.032.0
59	1	92160.0401201.052	Gear-box long spindle		T-TCBM 1651-1.2.23	80	1	10040121.010.010030000	Gearbox short inner bearing		510.03.008.0
						81	1	10040141.010.010010010	Pressed sheet of the Gearbox long inner bearing		510.03.016.0
						82	1	10040121.010.010040000	Gearbox long inner bearing		510.03.014.0

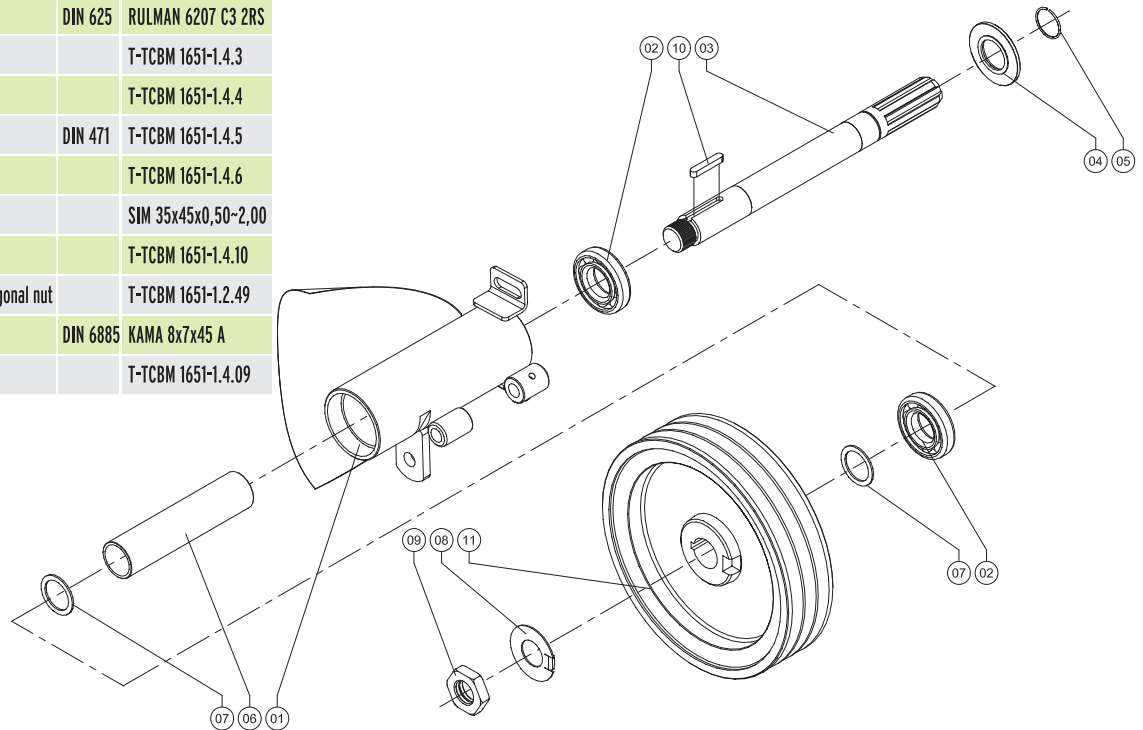


SPARE PARTS LIST

7.3 Pulley And Bearing Housing Group / T-TCBM1650-1.3

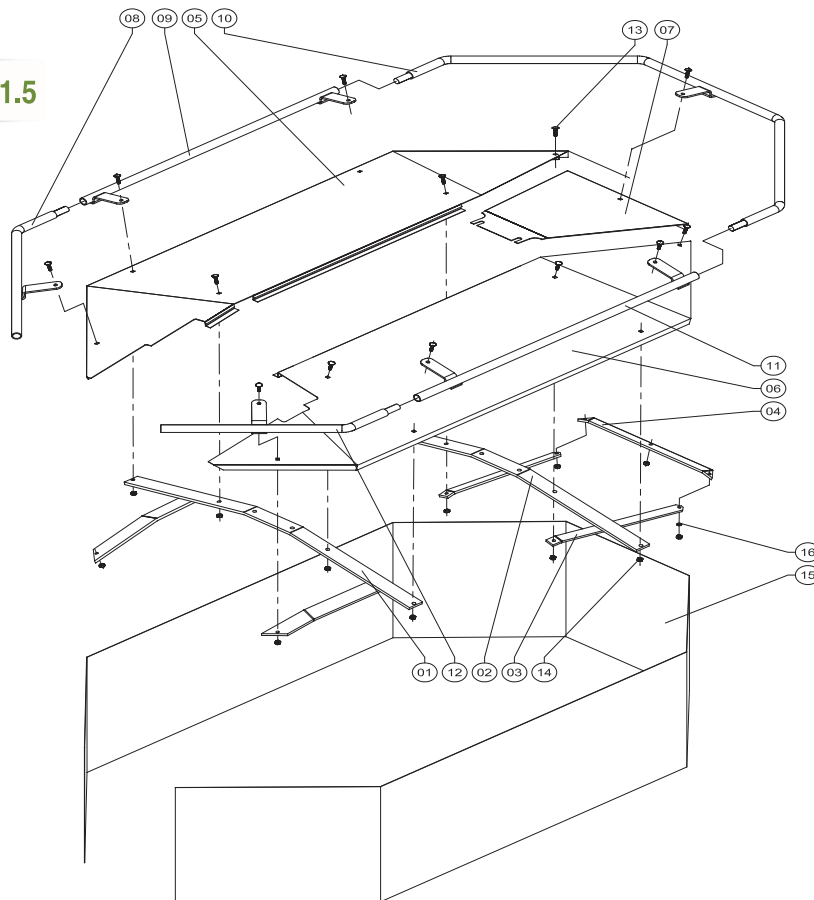
Pos. number	Amount	Order Number	Explanation	Norm	Old Number
01	1	10401201.110.010000000	Belt and pulley		T-TCBM 1651-1.4.1
02	2	93071.0000000.019	Bearing	DIN 625	RULMAN 6207 C3 2RS
03	1	92160.0401201.050	P.T.O shaft		T-TCBM 1651-1.4.3
04	1	92160.0401201.037	Cover plate		T-TCBM 1651-1.4.4
05	1	92160.0401201.066	Circlip	DIN 471	T-TCBM 1651-1.4.5
06	1	92160.0401201.065	Distance pipe		T-TCBM 1651-1.4.6
07	2	93210.0000000.065	Slim washer		SIM 35x45x0,50~2,00
08	1	92150.0401201.006	Safety nut plate		T-TCBM 1651-1.4.10
09	1	92160.0401201.038	P.T.O shaft hexagonal nut		T-TCBM 1651-1.2.49
10	1	93150.0000000.012	Cotter	DIN 6885	KAMA 8x7x45 A
11	1	92020.0401201.011	Big pulley		T-TCBM 1651-1.4.09

7.3 Pulley And Bearing Housing Group
T-TCBM1650-1.3





7.4 Curtain Groub / T-TCBM 1650-1.5



**SPARE PARTS LIST****7.4 Branda Grubu / T-TCBM1650-1.5**

Pos. number	Amount	Order Number	Explanation	Old Number
01	1	10401201.150.010000000	Curtain's welded plate	T-TCBM1651-1.5.4
02	1	92150.0401201.087	Curtain plate	T-TCBM1651-1.5.4.01
03	2	92150.0401201.083	Connection flat 1	T-TCBM1651-1.5.5
04	1	92150.0401201.085	Connection flat 2	T-TCBM1651-1.5.6
05	1	10401201.150.040000000	Curtain's left welded plate	T-TCBM1651-1.5.1
06	1	10401201.150.050000000	Curtain's right welded plate	T-TCBM1651-1.5.2
07	1	10401201.150.060000000	Curtain's front plate	T-TCBM1651-1.5.3
08	1	10401201.150.070000000	Curtain pipe 4	T-TCBM1651-1.5.10
09	1	10401201.150.080000000	Curtain pipe 2	T-TCBM1651-1.5.8
10	1	10401201.150.090000000	Curtain pipe 1	T-TCBM1651-1.5.7
11	1	10401201.150.100000000	Curtain pipe 3	T-TCBM1651-1.5.9
12	1	10401201.150.110000000	Curtain pipe 5	T-TCBM1651-1.5.11
13	13	93024.0000000.012	Square neck button head bolt	CİVATA KBBB M8x1,25x30 8.8
14	13	93082.0000000.015	Hexagonal fiber nut	SOMUN FİBERLİ M8x1,25
15	1	92090.0401201.001	Curtain 410x5100	T-TCBM1651-1.5.15
16	13	93062.0000000.013	Flat washer	RONDELÂ DÜZ M8



HANDOVER DOCUMENT

The handover document is the part of the documentation of the machine in which the manufacturer or representative informs the buyer of:

1. The correct usage and major components of the machine;
2. The operation and handling of the machine.

For all machines, the manufacturer or manufacturer's representative guarantees that the commissioning of the machine will be performed within 8 days from the acquisition of the machine:

Machine details

PRODUCT NAME

MODEL

PRODUCT CODE

SERIAL NUMBER

MANUFACTURE YEAR

Seller'st

Date of Invoice:

Signature&Seal

Buyer's

Name Surname:

Address:

Tel :

Basic rules for using, maintenance and points to take into account for the machine purchased are duly explained to me and I am advised to read and understand the introductory and user guide provided with machine carefully.

Signature

Authorised service provider'st

Date of service:

Signature&Seal

The machine is correctly assembled and handed over to use – the commissioning has been performed.

The buyer has been acquainted with the usage, operation and handling of the machine.

The handover document is filled out by the seller or authorised service technician, who sends a copy directly to MINOS or at the email address: info@minosagri.com. With their signature, they guarantee the accuracy of the information. The warranty is validated simultaneously with the validation of the service sheet.



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agri**

Minos Agricultural Machinery

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**READ ALL WARNINGS AND INSTRUCTIONS IN THIS MANUAL BEFORE
INSTALLING OR OPERATING THE MINOS ROTARY DRUM MOWER.**

Failure to heed this may result in personal injury or death!

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