



# ROTARY TILLER "R" SERIES

## Operation, Service & Parts Manual



Carefully read this manual  
before using the machine

April 2006

No part of this manual shall be reproduced, copied or disseminated by any means, without manufacturer prior authorization in writing.

Gearmore reserves the right to make any necessary changes without giving prior notice, in order to optimize the quality and safety features and does not commit itself to updating this manual every time a change is made.

This booklet provides a thorough and accurate description of the instruction and maintenance activities to be carried out on the tiller you purchased. We congratulate you on your choice and urge you to thoroughly familiarize yourself with and follow the instructions contained in this manual. This will assure you a long, safe and trouble free working life for your tiller.

**Gearmore shall not assume any responsibility should problems arise as a result of lack of compliance with the instructions and/or operator's negligence.**

The manual is divided in chapters and paragraphs and the pages are numbered, thus offering accurate and precise information.

The requested information can be easily found by searching the key words or referring to the index.

Date of Purchase: \_\_\_\_\_

Model Number: \_\_\_\_\_

Serial Number \_\_\_\_\_

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# GENERAL INFORMATION

## GENERAL INFORMATION

### APPLICATION

The R Series Reverse Tillers are designed to till soil for seedbed or planting preparation. Reverse rotation allows you to achieve a deeper penetration also in harder soils, producing a fine soil texture and burying at the same time clods and debris through the action of the sifting comb set up into the tiller. The spring loaded rear board levels and compact the soil leaving a perfect seedbed.

The R Series Reverse Tillers are adapted for tractors with 540 rpm PTO speed and Category 1, 3-point hitch tractors up to 50 HP. These tillers are also Quick Hitch adaptable (by means of Quick Hitch Optional Kit).

### SYMBOLS

This booklet contains three "safety pictograms" which highlight the relevant danger levels or important information:



It draws the operator's attention to special situations which may jeopardize people's safety.



It draws the attention to situations which unfavorably affect the machine efficiency, but not people's safety.

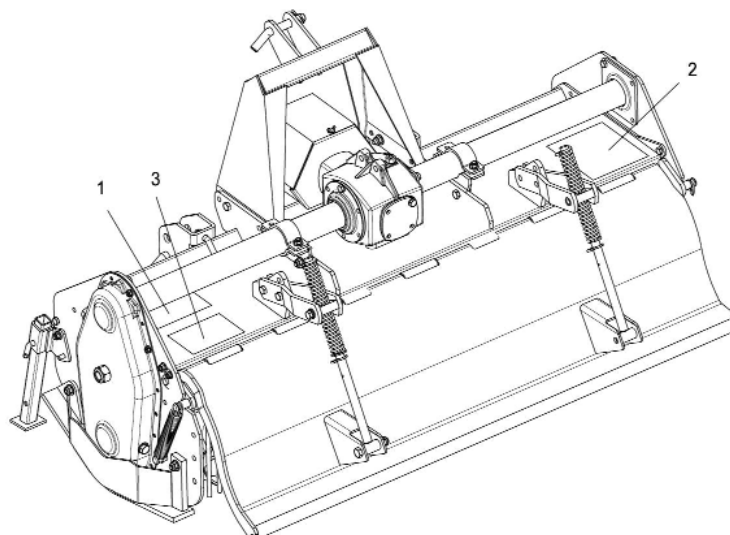


It is used for general information, when people's safety or the efficiency of the parts are not at risk.

# SAFETY LABELS

## SAFETY LABELS

The safety labels and information on the machine (labels 1, 2 and 3), must be complied with. Failure to comply with these warnings may result in severe injuries or even death. Make sure that the labels are always present and legible; should this not be the case, contact your nearest Gearmore dealer to request replacements



**1**

**DANGER**

1 MAKE SURE DRIVELINES ARE OF THE CORRECT LENGTH AND PROPERLY CONNECTED. DRIVELINE SEPARATION AND/OR PTO STUB SHAFT FAILURE CAN CAUSE INJURY OR DEATH. (See Operator's Manual for procedure)

2 MAKE SURE THAT DRIVELINE SHIELDS ARE INSTALLED CORRECTLY AND TURN FREELY TO AVOID INJURY OR DEATH FROM ENTANGLEMENT

3 MAKE SURE THAT DRIVELINE IS INSTALLED CORRECTLY ON TRACTOR PTO SHAFT. MOVE YOKE BACK AND FORTH UNTIL LOCKING COLLAR CLICKS FORWARD AND LOCKS YOKE IN PLACE.

4 540 PTO RPM UNLESS SPECIFICALLY MARKED OTHERWISE.

4781001

**3**

**WARNING**

SHIELDS AND DEFLECTORS MAINTAINED IN BAD CONDITION MAY CAUSE INJURY OR DEATH FROM ENTANGLEMENT WITH ROTATING PARTS, BEING HIT BY OBJECTS THROWN WITH GREAT FORCE BY BLADES, OR BY BLADE CONTACT.

- Always replace Guards which have been removed for maintenance. Never operate with guard missing or broken.
- Chain Guards, Gearbox, Drivelines Shields, eventual Rubber-fabric Deflectors, and solid band enclosures are subject to wear and lost or broken parts must be replaced or repaired as soon as damage is found.
- Safety shielding must be installed and in good condition to avoid the possibility of thrown objects when the machine is operated in any area where thrown objects could cause injury.

4781006

**2**

**DANGER**

FAILING TO FOLLOW SAFETY MESSAGES AND OPERATING INSTRUCTIONS CAN CAUSE SERIOUS BODILY INJURY OR EVEN DEATH TO OPERATOR AND OTHERS IN THE AREA.

1. READ OPERATOR'S MANUAL CAREFULLY AND PAY ATTENTION TO SAFETY DECALS FOR TRACTOR AND TILLER THOROUGHLY TO AVOID MISUSE, ABUSE, AND ACCIDENTS. PRACTICE BEFORE OPERATING.
2. OPERATE ONLY WITH ROPS AND FASTEN SEAT BELT TO AVOID INJURY AND POSSIBLE CRUSHING DEATH FROM OVERTURN. ALLOW NO RIDERS ON TRACTOR OR TILLER. FALLING OFF CAN CAUSE SERIOUS INJURY OR DEATH BY BEING RUN OVER BY TRACTOR OR TILLER OR BY BEING CUT BY THE ROTATING TILLER BLADES. ALLOW NO CHILDREN ON OR NEAR TILLER OR TRACTOR.
3. TO AVOID INJURY FROM FALLING OBJECTS WEAR HARD HAT, SAFETY GLASSES AND SHOES.
4. BLOCK UP OR SUPPORT MACHINE SEVERELY BEFORE PUTTING HANDS OR FEET UNDER, OR WORKING UNDERNEATH LIFTED PARTS TO AVOID CRUSHING INJURY OR EVEN DEATH FROM SUDDEN, INADVERTENT DROPPING. MAKING SURE AREA IS CLEAR BEFORE LOWERING.
5. BEFORE TRANSPORTING, PUT LIFT LEVER IN LIFT (DETENT) POSITION AND FOLLOW TRAFFIC CODES SLOW DOWN AT NIGHT, IN TURNS, & ON HILLSIDES.
6. MAKE SURE THAT SMV SIGN, WARNING LIGHTS, AND REFLECTORS ARE CLEARLY VISIBLE.
7. NEVER OPERATE WITH TILLER RAISED OF GROUND TO REDUCE POSSIBILITY OF INJURY FROM OBJECTS THROWN UNDER TILLER STRUCTURE.
8. BEFORE DISMOUNTING, SECURE TILLER IN TRANSPORT POSITION OR LOWER TO GROUND. STOP PTO, PUT TRACTOR IN PARK OR SET BRAKE, STOP ENGINE, AND REMOVE KEY. NEVER MOUNT OR DISMOUNT MOVING VEHICLE TO PREVENT POSSIBLE CRUSHING INJURY OR DEATH.

5. TRANSPORT SAFELY.
6. USE SMV, LIGHTS, & REFLECTORS.
7. DO NOT OPERATE WITH TILLER RAISED.
8. MOUNTING & DISMOUNTING.

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# TECHNICAL DATA

## TECHNICAL DATA

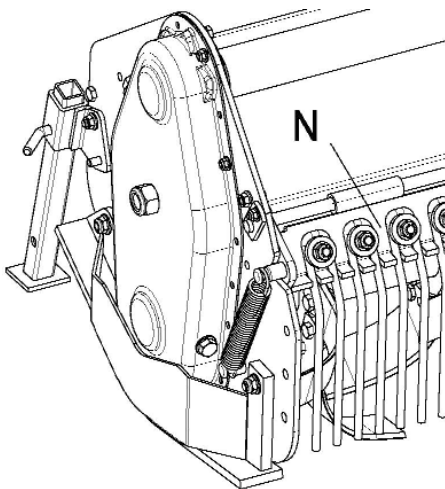
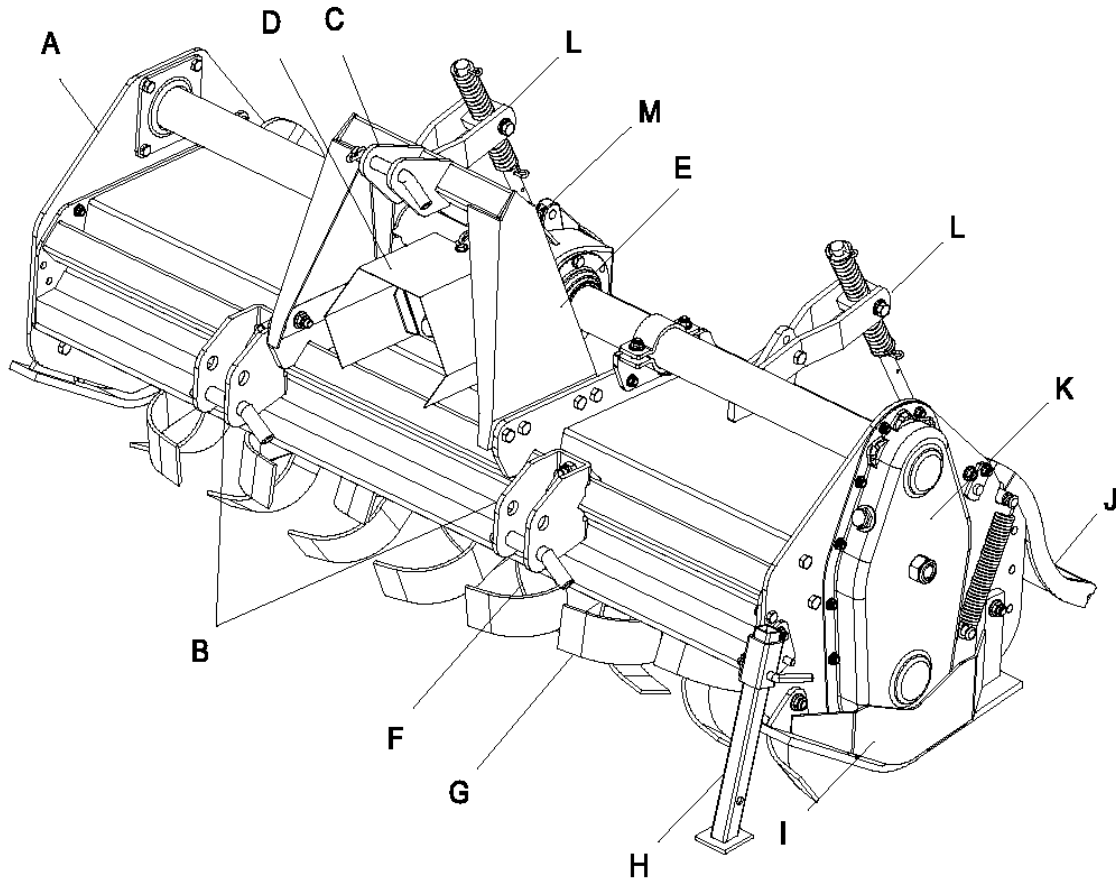
Model	Tilling Width		HP	Weight (Approx.)		Working Depth (Max.)		Side Drive		Blades (Qty)	Blades	
	cm	Inches		kg	lbs	cm	Inches	Chain	Gear		Blades Flange	Shape
R	145	56	40	331	730	18	7		*	42	6	Curved
	165	65	45	360	795	18	7		*	48	6	Curved
	185	72	50	390	860	18	7		*	54	6	Curved



**When asking for information or technical service, always specify the machine type and width.**

# MAIN PARTS TERMINOLOGY

## MAIN PARTS TERMINOLOGY



- A) Main Frame
- B) Lower Hitch Brackets
- C) Top Link Bracket
- D) PTO Guard
- E) Third Point Mast
- F) Rotor
- G) Tines
- H) Parking Stand
- I) Skid
- J) Rear Board
- K) Transmission Case
- L) Rear Board Spring Loaders
- M) Gearbox
- N) Sifting Comb

# INFORMATION

## IDENTIFICATION PLATE

An identification plate is placed on each tiller and is structured as follows:

Serial number (sample):



## RECOMMENDED USE

The tillers described in this instruction and maintenance manual, have been designed explicitly to till the land. Any other use jeopardizes the operator's safety and the machine integrity.

## INAPPROPRIATE USE

The tillers shall not be used as follows:

- Connected to vehicles which do not have a suitable power or weight.
- Without being properly installed by securing the hitch brackets to all three points of the tractor lift unit.
- Tilling of extremely stony or unsuitable ground.
- In close proximity to person/s when power is engaged.
- Do not stand or step on the equipment when it is being operated or transported.
- Do not operate the machinery while wearing unsuitable (loose fitting) clothing.

## TORQUE SPECIFICATIONS

For correct hardware tightening on the tiller, we suggest the use of suitable torque wrench and the applicable torque as listed in the table below:

M-THREADED SCREW/BOLTS  
Bolt grade

Thread	8.8		10.9	
	Nm	Lb-ft	Nm	Lb-ft
M6	11	8.5	17	12
M8	28	20	40	30
M10	55	40	80	60
M12	95	70	140	105
M14	150	110	225	165
M16	240	175	305	225
M18	330	250	475	350



# SAFETY

## SAFETY IN THE WORKPLACE

Most of the accidents, which occur while the operator is using the machine or the equipment or carrying out maintenance and repair activities, are caused by the non-compliance with the main safety requirements.

Therefore the potential risks must be fully understood and special attention must be paid to the activity which is being executed.

**If potentially dangerous situations are known,  
accidents can be prevented!**

## USER'S REQUIREMENTS

The equipment user must have the following:

**Physical:** good sight, co-ordination and capability to execute all instructions in a safe manner.

**Mental:** the users must understand and follow the prescribed norms, rules and safety measures. They must be careful, pay attention to their own safety and the safety of other people and act properly and in a responsible way.

**Training:** the users must read and understand this manual, its pictures and charts, and the identification and hazard plates. They must be specialized, trained and qualified on any use and maintenance activities.

## WORK CLOTHING

The following clothing and personal protective equipment must be used when working and executing maintenance and repair activities:

- Overalls or any other comfortable outfit; make sure that they are not too loose since they might be caught by moving parts.
- Protective gloves.
- Goggles or mask to protect the eyes and face.
- Safety helmet.
- Safety shoes.



**Make sure that the personal protective equipment is properly stored and complies with the laws in force.**

## GENERAL SAFETY NORMS

The features of the area where work is taking place must always be taken into consideration:

- Do not stand in the working radius of the operating machinery or any other machine accessories when the equipment is running.

# PREPARATION

## **Prepare the work:**

- Do not drink alcohol, take drugs, or any other substances which may affect your ability to use the equipment before or when working.
- Make sure that there is sufficient fuel in the tractor to prevent the machine from stopping during work.
- Do not use the equipment under unsafe conditions, e.g. do not make temporary repairs just to start or keep working; do not work at night if the area is not well illuminated.

## **When working or executing maintenance activities, remember:**

- The labels and stickers providing instructions on the use of the equipment or information on dangers must not be removed or hidden, and must be legible.
- Do not remove the safety devices, covers and safety guards, unless maintenance activities are being carried out. If the safety devices must be removed, turn the engine off, remove them correctly and re-install them before turning the tractor on.
- Do not lubricate, clean or adjust moving parts.
- Use the appropriate tools to execute maintenance or adjustment activities on the equipment.
- Do not use damaged or unsuitable tools, e.g. pliers rather than wrenches etc.
- Prior to carrying out activities on hydraulic lines under pressure, or disconnecting their components, make sure that the line is no longer under pressure and that it does not contain any hot fluids.
- Check all the fittings and make sure that they are well connected before supplying pressure to the hydraulic lines.
- Make sure that no tools, clothes or any other materials are left in areas where moving parts are present when the maintenance and repair activities are completed.
- Do not give directions and make signals at the same time during a maneuver. Maneuver directions and signals must be given from one person only.
- Do not unexpectedly call an operator, if not necessary. Do not startle the operator, e.g. by throwing objects.
- Pay attention to people in the vicinity of the work area, especially children!
- Make sure that nobody is standing in the working range of the equipment.
- Do not use the equipment to lift people.
- When the equipment is not needed, turn the engine off, leave the vehicle on a flat surface, with the first gear and the parking brake engaged. Disengage the power take off.
- Do not execute any cleaning, lubrication, repair or adjustments when the engine is running and the equipment is in the raised position.
- Do not work on steep slopes, if the stability of the vehicle can be jeopardized.

**Manufacturer shall not assume any responsibilities if these instructions are not strictly followed.**

# SET-UP

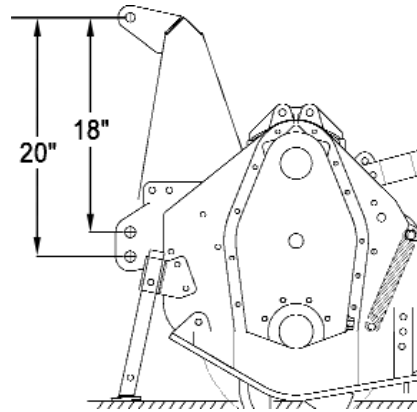
## ATTACHMENT TO THE TRACTOR

This tiller may be attached to any tractor equipped with a Cat. 1, 3-point hitch with suitable ball ends; it can also be attached by means of a Cat. 1 Quick Hitch.

### 3-POINT CATEGORY 1 HITCH

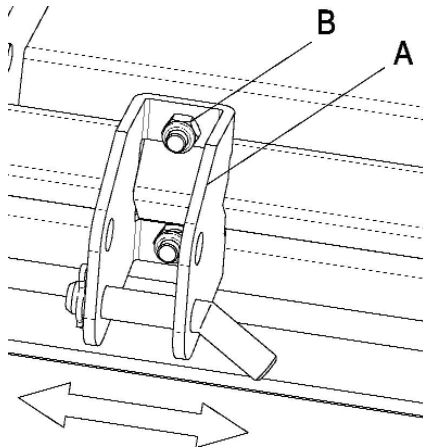
To connect the tiller to the tractor's 3-point hitch, do the following operations:

- 1) Install the bottom link brackets with the holes facing down as shown in picture 1; this gives you the standard A.S.A.E. vertical dimension of 18" (and an additional dimension of 20").

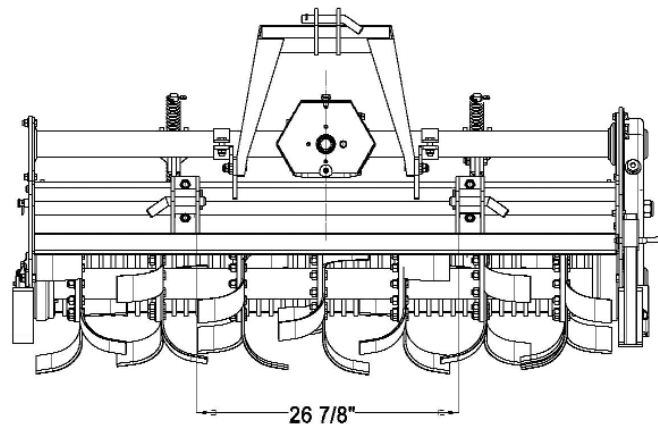


picture 1

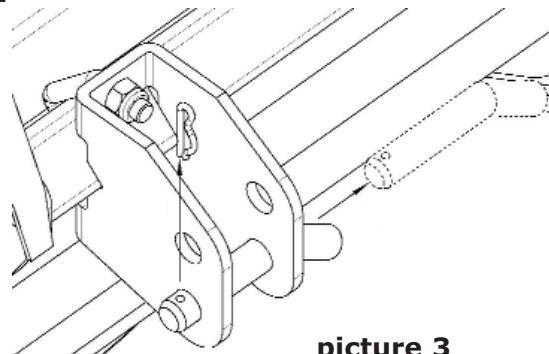
- 2) Release the bolts B and adjust the position of the brackets A to obtain horizontal displacement  $26 \frac{7}{8}$ " (picture 2).



picture 2



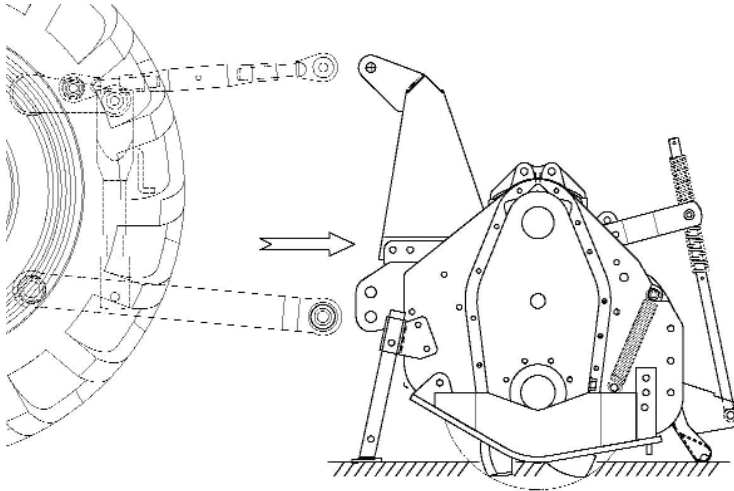
- 3) Remove the hair pins from the hitch pins (picture 3).
- 4) Remove the lower hitch pins from the lower hitch brackets (picture 3).



picture 3

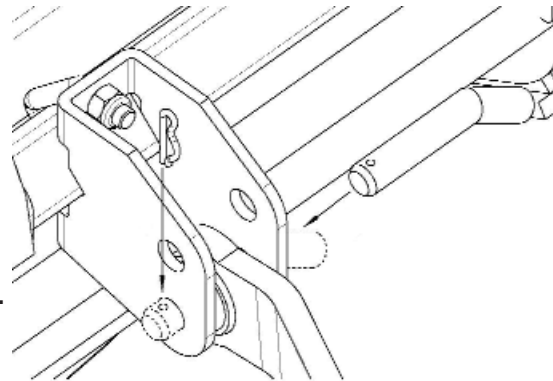
# SET-UP

- 5) Before attaching the equipment to the tractor, make sure that the ground is smooth and flat and that nobody is standing between the tractor and the tiller; slowly move the tractor towards the tiller by aligning the tractor lifter arms with the lift bracket holes; turn the engine off and pull the brake.



- 6) Insert the lift arm pins through the hitch bracket and ball ends (picture 4).

- 7) Secure them by means of the hair pins which were previously removed (picture 4).



**picture 4**

- 8) Connect the tractor top link to the third upper point by removing the pin located between the two plates, inserting the top link and securing it by means of the hair pin. Shift the parking stand in the upper position.
- 9) Adjust the top link so that the upper part of the frame is parallel to the ground. Block all the linking parts by means of the sway chains or arms.
- 10) Make sure that the central unit axis (gearbox assembly) is parallel to the ground, thus minimizing the stresses on the power take off and increasing the working life of the equipment.



**Caution**

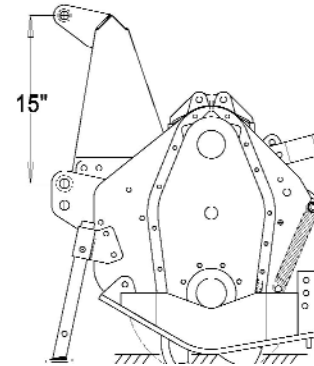
**After executing all the above mentioned activities, make sure that all the nuts and bolts are tightened.**

# SET-UP

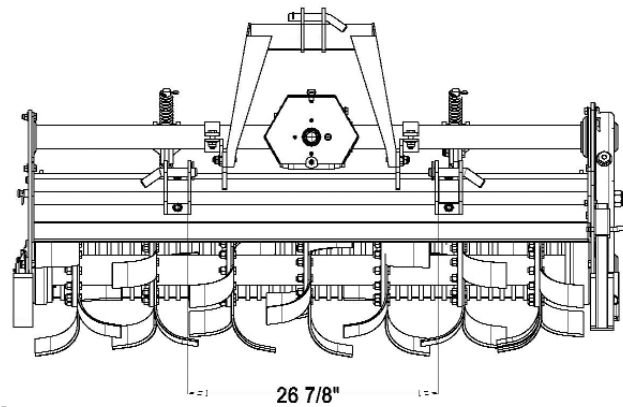
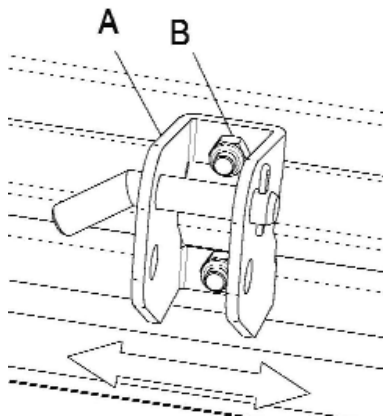
## 3-POINT CATEGORY 1 QUICK HITCH

The R Series Reverse Tillers are Cat. 1 Quick Hitch adaptable. To attach the implement to the tractor it is necessary to order the Quick Hitch Kit composed of 3 bushings. The following operations are needed:

- 1) Place the bottom brackets with holes facing up as shown in picture 5. This gives you the standard A.S.A.E. dimension of 15" for Quick Hitch.
- 2) Release the bolts B and adjust the position of the brackets A to obtain horizontal displacement of 26 7/8" (picture 6).

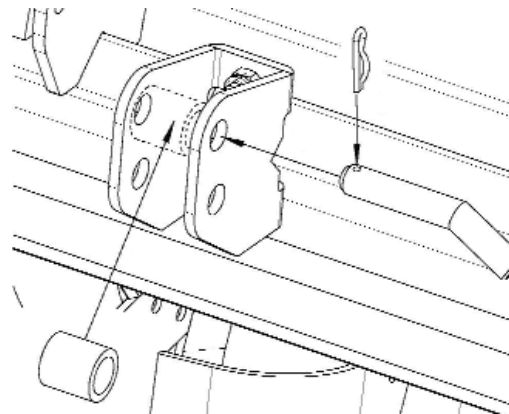


picture 5



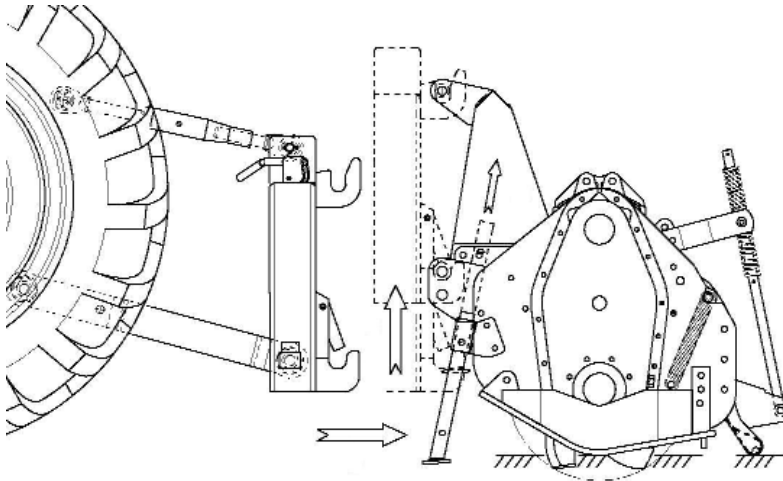
picture 6

- 3) Insert the lower bushing of the kit in the lower hitches aligning it with the upper hole (picture 7).
- 4) Insert the lower hitch pins through the hitch bracket and bushing (picture 7).
- 5) Secure them by means of the hair pins which were previously removed (picture 7).
- 6) Repeat the same operations from 3 to 5 for the upper bracket with the upper bushing.
- 7) Before attaching the equipment to the tractor, make sure that the ground is smooth and flat and that nobody is standing between the tractor and the tiller; slowly move the tractor towards the tiller by aligning the tractor lifter arms with the bracket holes; turn the engine off and pull the brake.



picture 7

# SET-UP



- 8) Lift the Quick Hitch until its hooks engage the hitches of the implement.
- 9) Raise the parking stand to the upper position.

## PTO SHAFT CONNECTION

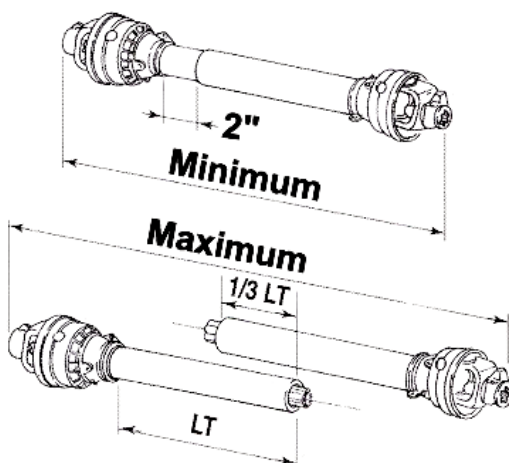
Before installing the PTO shaft make sure that the RPM rating and the direction of rotation match those of the tractor. Carefully read the PTO shaft and tractor instructions. Furthermore, accurately read the instructions of the manufacturer of the PTO shaft and of the tractor.

Before starting any activity, make sure that the guards are installed on the power take off of the tractor and PTO shaft. Make sure that they cover the PTO shaft throughout its length.



**Caution**

**When fully extended, the plastic pipes must overlap by at least 1/3 of the length of the pipes (LT). When retracted, the minimum acceptable clearance is 2" (picture 8).**



**picture 8**

Check that the PTO shaft minimum and maximum length are within the parameters of the machine tractor coupling.

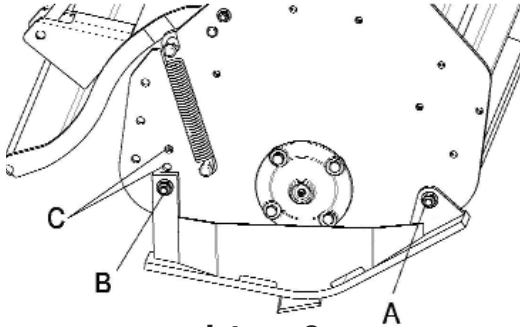
Should problems arise, contact your dealer. After the installation, anchor the PTO shield to the tractor and machine using the special chains; make sure that it turns smoothly. If the PTO shaft is equipped with safety devices, e.g. torque limiters or free-wheel devices, install them on the operative machine side. For the use and maintenance of the PTO shaft, please refer to the relevant manual.



# SET-UP

## WORKING DEPTH ADJUSTMENT

The working depth of the equipment depends on the position of the lateral skids. If the skids are raised, the working depth increases; if the skids are lowered, the working depth decreases.



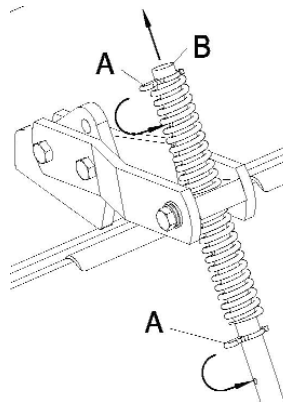
picture 9

To adjust the working depth, loosen nut **A** (picture 9), remove nut **B** and adjust the skid height according to the holes **C**. When the adjustment is completed, tighten both the screws to the correct torque, according to the values suggested in Torque Specifications, page 5.

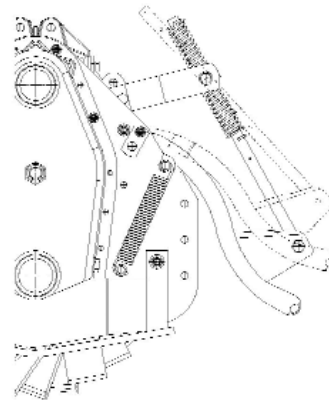
**IMPORTANT:** Make sure that the skids are set at the same height on both sides.

## LEVELING BOARD ADJUSTMENT

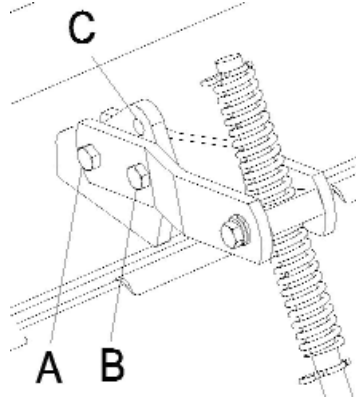
The rear leveling board can be lowered closer to the ground, to produce a fine soil texture or can be raised, to produce a coarse soil texture. To adjust the height of the leveling board extract the hair pins **A**, shift upward the shaft **B** and re-insert the hair pins in the next holes (picture 10).



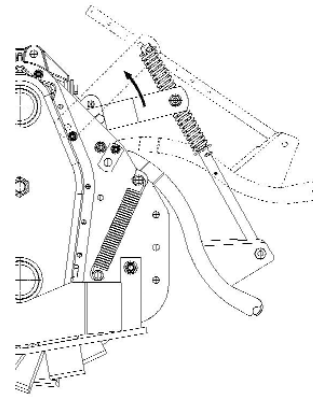
picture 10



The rear leveling board can be fully raised, for example to allow the maintenance activities. Loosen the bolt **A**, remove bolt **B** (picture 11) and re-engage it into the hole **C**.



picture 11



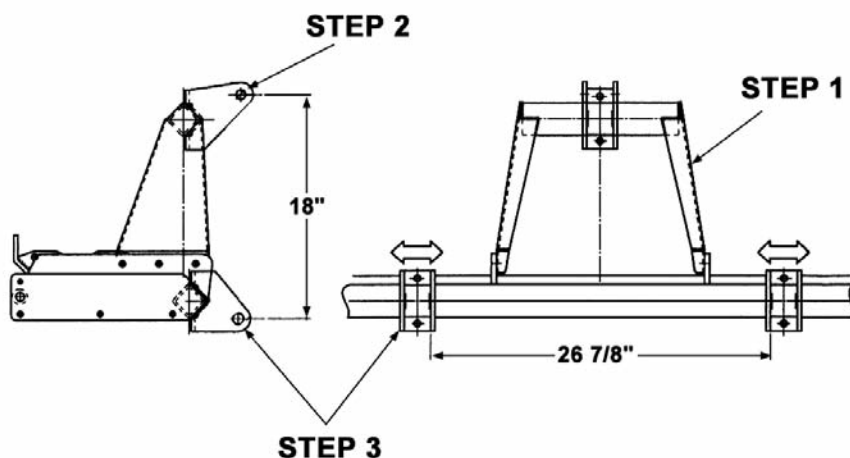
# SET-UP

## ASSEMBLING R SERIES 3-POINT HITCH

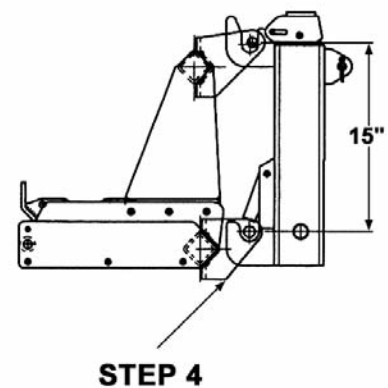
- STEP 1:** Install the top mast to the tiller main frame as shown.
- STEP 2:** Install the top link bracket to the mast with the hole in the highest position as shown.
- STEP 3:** Install the bottom link brackets with the holes facing down. This gives you the standard A.S.A.E. dimension of 18" if the tractor does not have a quick hitch.
- STEP 4:** If the tractor has an A.S.A.E. quick hitch, place the bottom brackets with the holes in the high positions to obtain the correct spacing to tractors with quick hitches.

**NOTE:** It is necessary to order a 3 bushing kit - part number 883303 - to make the tiller A.S.A.E. quick hitch compatible.

### STANDARD



### QUICK HITCH





# MAINTENANCE



## Danger

These activities must be carried out with the engine off, the power take off disengaged and the hand brake applied. If needed, lift the equipment and place it on supports, thus preventing any injuries that might be caused by a sudden fall of the equipment.

### START UP

After carrying out these adjustments, the equipment is ready for use. When at the working area, do not start the power take off with the tiller in working position in the ground. Be sure to lift it by a few centimeters using the tractor lift. Start the engine, engage the power take off, lower the equipment to its working position and start.

### ROAD TRANSPORT

With reference to road transport, follow local traffic regulations.

### SHUT DOWN

The following activities are recommended if the tiller will not be used for a long period of time:

- 1 Clean and dry the equipment.
- 2 Inspect the equipment and replace the damaged or worn parts if necessary.
- 3 Tighten all the screws and nuts.

Lubricate and cover the machine with a tarpaulin and store it in a dry place.

### MAINTENANCE

Maintenance is crucial for the working life and efficiency of any agricultural equipment. If the equipment is properly maintained and operated, a long working life and operator safety are assured.

The maintenance intervals indicated in this booklet are provided as a mere reference and are related to normal working conditions; changes may occur depending on the type of activities, environmental dust, seasonal factors, etc.



## Caution

- Before injecting lubricating grease into the grease fittings, clean the fittings to prevent mud, dust, or any other foreign matter from contaminating the grease and reducing the lubrication effect.
- When adding or changing the oil, use the same type of oil to prevent mixing oils with different features.
- All maintenance activities must be carried out with the tiller resting horizontally on the ground.
- After using the equipment for a few hours, make sure that all the bolts (especially tine bolts) are tightened; regularly check all the machine guards.

### FIRST CHECK

- After 50 working hours, change the oil in the gearbox and make sure that all the screws and bolts are tightened.

# MAINTENANCE

## EVERY 8 WORKING HOURS

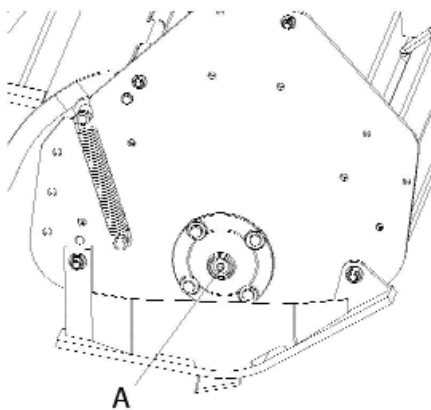
- Grease the PTO shaft crosses.

## EVERY 50 WORKING HOURS

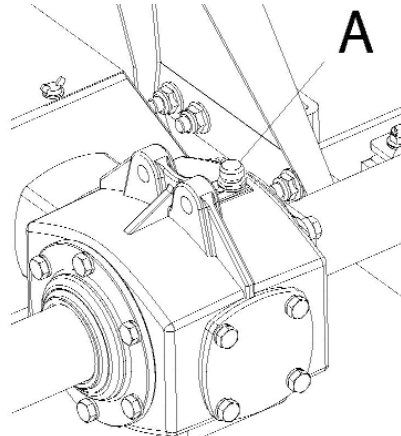
- Grease the rotor support through the grease fitting **A** (picture 12).
- Check the oil level in the case/bevel gear pair by removing gearbox's upper oil plug (**A** - picture 13); oil level should be contained between the 2 nicks of MIN & MAX of the dip stick oil plug (**B** - picture 13). If needed add SAE EP 80W90 oil.
- Check the oil level in the side transmission (**A** - picture 14). If needed add SAE EP 80W90 oil.
- Make sure that all the screws and bolts, especially on the blades, are tightened.

## EVERY 500 WORKING HOURS

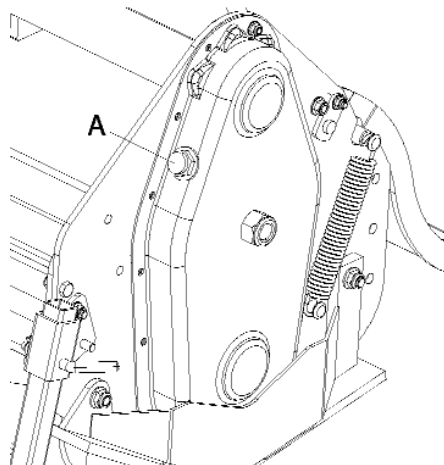
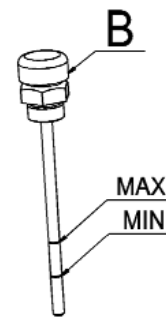
- Change the oil of the case/bevel gear pair, side transmission and rotor support; use SAE EP 80W90 oil. Contact the closest dealer for this maintenance activity.



picture 12



picture 13



picture 14



The old oil must be disposed of in compliance with the local laws where these activities are carried out; do not spill or dispose of waste oil on the ground.

# SPARE PARTS



**Danger**

The maintenance activities must be carried out with the engine off, the power take off disengaged, the parking brake engaged, and the equipment placed on the ground.

## BLADES REPLACEMENT

To assure the optimum efficiency of the machine, make sure that the tiller blades are in a good working condition and that their bolts are tightened; replace them if they are broken or bent. The new parts must be installed in the original position.

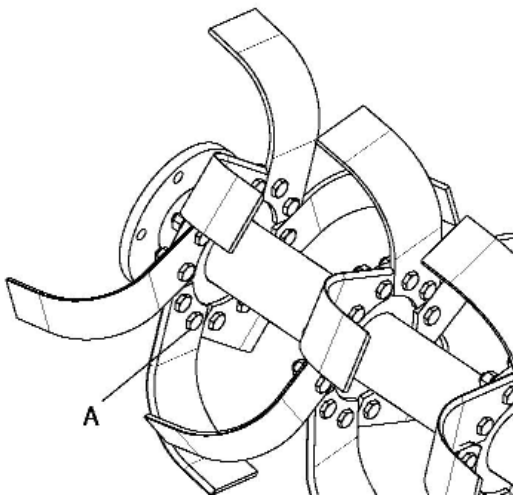


**Danger**

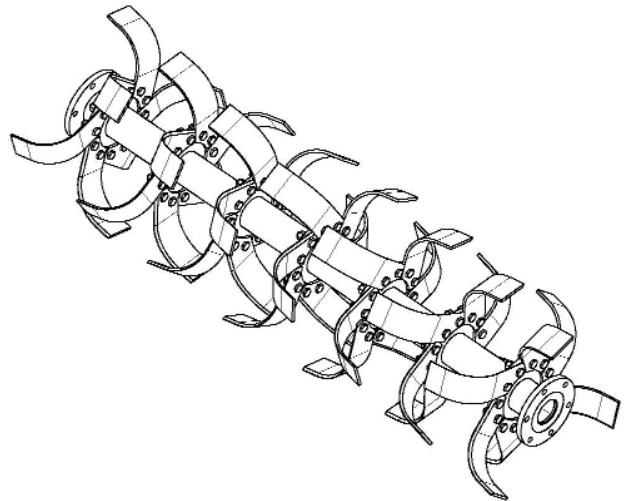
Before replacing the blades, turn the tractor engine off, pull the parking brake, disengage the power take off, raise the tiller using the tractor lift, and install supports to prevent accidental dropping of the machine.

Pay special attention to the bolts **A** on the blades (picture 15): the screw head must be placed on the blade side, with the washer and the nut on the flange side, so that the bolts cannot loosen while the equipment is being used.

When several blades must be replaced, replace one blade at a time, so that the initial helical layout is maintained (picture 16).



**picture 15**



**picture 16**

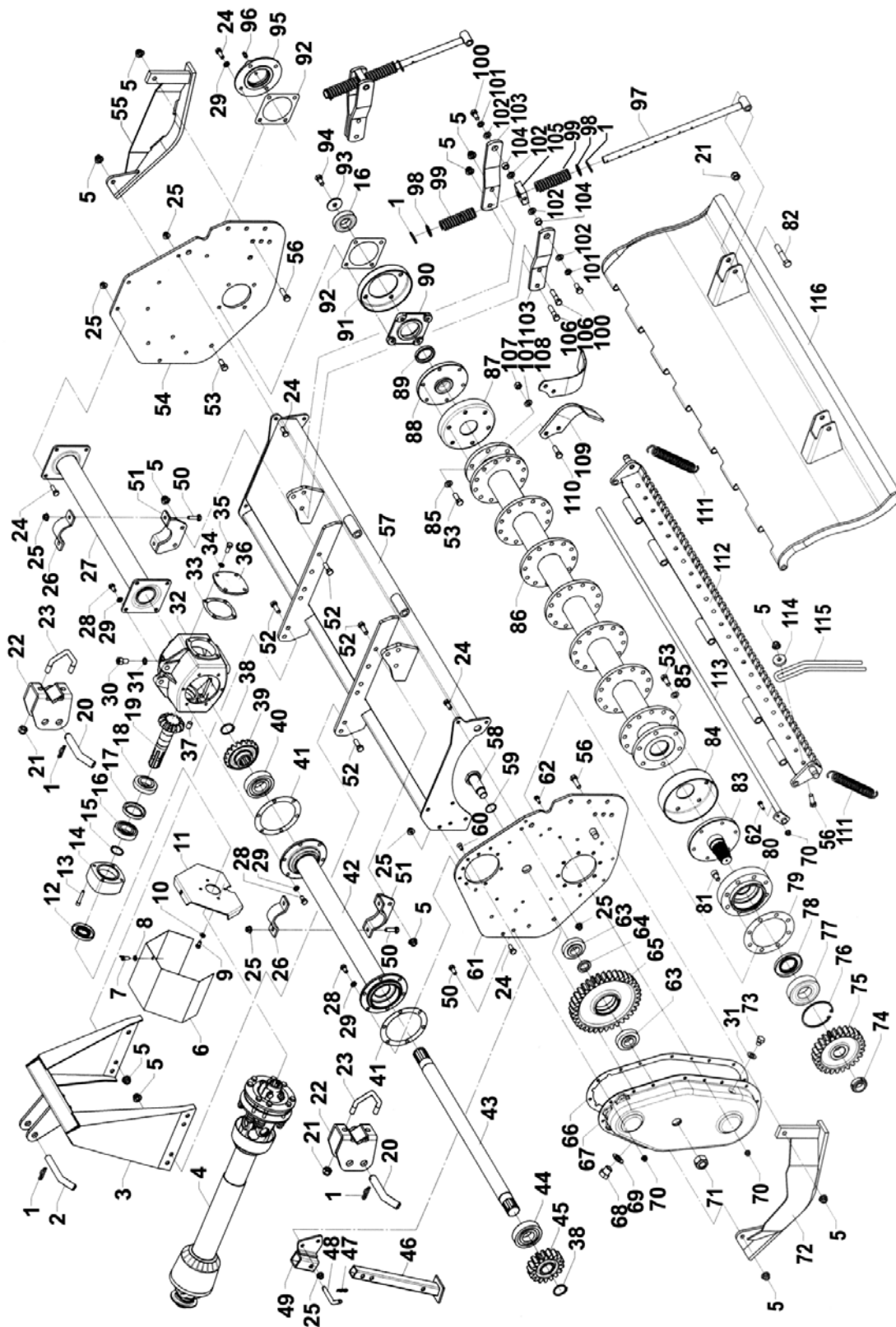
## HOW TO ORDER SPARE PARTS

For spare parts requests please refer to our spare parts catalog.

The spare parts can be ordered from the dealer or service center. The following data must always be specified:

- Equipment type and width.
- Part number of the requested component. If the code number is missing, indicate the table number in which it is shown and the relevant reference.
- Description of the part and requested quantity.
- Requested type of transport. Should this information not be provided, the dealer or service center shall not be responsible for delays caused by circumstances beyond their control. The addressee shall be responsible for any transport charges.

# "R" TILLER ASSEMBLY



# TILLER ASSEMBLY

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	7	6351004	Hair Pin
2	1	4301589	Pin
3	1	4001514	Bracket
4	1	E8201507	Driveline AX 5 590/487
5	43	34129012	Lock Nut M12 x 1.75 DIN 6927 8 R145
5	47	34129012	Lock Nut M12 x 1.75 DIN 6927 8 R165
5	50	34129012	Lock Nut M12 x 1.75 DIN 6927 8 R185
6	1	4138034	PTO Guard
7	1	33108020	Wing Screw M8 x 20 UNI 5449
8	1	34026008	"Schnorr" Washer M8
9	4	31508016	Bolt UNI 5739 M8 x 16 8.8
10	4	34120008	Washer UNI 6592 M8
11	1	4131821	PTO Guard Support
12	1	35X72X10	Oil Seal
13	4	31708045	Bolt M8 x 45 UNI 5931 8.8
14	1	4931335	Pinion Support
15	1	6320035	Circlip External D35 DIN 471
16	2	6207	Bearing
17	1	4591328	Pinion Spacer
18	1	30207	Bearing
19	1	4721309	Bevel Pinion Z13
20	2	4301590	Pin
21	5	34106014	Stop Nut M14 x 2 DIN 982 6
22	2	4001506	Lower Hitch Clevis
23	2	4201513	U-Bolt M14
24	21	31510030	Bolt UNI 5739 M10 x 30 8.8
25	21	34129010	Lock Nut M10 DIN 6927 8
26	2	4831500	Extension Tube Bracket
27	1	4001828	Outer Extension R145
27	1	4001829	Outer Extension R165
27	1	4001830	Outer Extension R185
28	16	31510020	Bolt UNI 5739 M10 x 20 8.8
29	20	34026010	"Schnorr" Washer M10
30	1	3442014	Oil Plug M14 x 1.5
31	2	6470114	Washer M14
32	1	4658818	Gearbox
33	1	4788793	Gasket
34	4	34121010	Washer UNI 1751 M10
35	4	31510025	Bolt UNI 5739 M10 x 25 8.8
36	1	4938843	Cover Pinion
37	1	3441014	Oil Seal Plug M14 x 1.5

# TILLER ASSEMBLY

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
38	2	6320040	Circlip External D40 DIN 471
39	1	4728794	Bevel Gear Z19
40	1	6308-2RS	Bearing
41	2	4788744	Gasket
42	1	4008709	Shaft Support R145
42	1	4008710	Shaft Support R165
42	1	4008711	Shaft Support R185
43	1	4218805	Transmission Shaft R145
43	1	4218806	Transmission Shaft R165
43	1	4218807	Transmission Shaft R185
44	1	6308	Bearing
45	1	4228706	Driving Gear
46	1	4001234	Stand Leg
47	1	6351003	Hair Pin
48	1	4236115	Pin
49	1	4001682	Stand Leg Support
50	6	31510035	Bolt UNI 5739 M10 x 35 8.8
51	2	4001588	Extension Support
52	12	31512035	Bolt UNI 5739 M12 x 35 8.8
53	14	31512030	Bolt UNI 5739 M12 x 30 8.8
54	1	4931805	External Plate
55	1	4001831	Right Skid
56	25	31512040	Bolt UNI 5739 M12 x 40 8.8 R145
56	29	31512040	Bolt UNI 5739 M12 x 40 8.8 R165
56	32	31512040	Bolt UNI 5739 M12 x 40 8.8 R185
57	1	4001803	Frame R145
57	1	4001804	Frame R165
57	1	4001805	Frame R185
58	1	4208774	Intermediate Gear Pin
59	1	6800030	O-Ring 4118
60	1	30608020	Bolt UNI 5933 M8 x 20 8.8
61	1	4001833	Transmission Side Plate
62	15	31508025	Bolt UNI 5739 M8 x 25 8.8
63	2	30306	Bearing
64	1	4598935	Bearing Spacer
65	1	4728707	Intermediate Gear
66	1	4788745	Gasket
67	1	4018702	Drive Cover
68	1	3442022	Oil Plug M22 x 1.5
69	1	6470118	Washer M22
70	16	34129008	Lock Nut M8 DIN 6927 8



# TILLER ASSEMBLY

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
71	1	34109024	Lock Nut M24 UNI 7474
72	1	4001832	Left Skid
73	1	3444014	Oil Plug M14
74	1	34127035	Lock Nut M35 x 1.5
75	1	4728708	Driven Gear
76	1	6310100	Circlip Internal UNI 7437
77	1	6309	Bearing
78	1	50X90X10	Oil Seal
79	1	4788217	Gasket
80	1	4708071	Hub Support
81	8	31712020	Bolt M12 x 20 YBU 5931 8.8
82	1	31314080	Bolt UNI 5737 M14 x 40 8.8
83	1	4728922	Driven Gear Hub
84	1	4148040	Dust Cover
85	12	34026012	"Schnorr" Washer M12
86	1	4001497	Rotor R145
86	1	4001498	Rotor R165
86	1	4001499	Rotor R185
87	1	4148030	External Dust Cover
88	1	4708028	Rotor Hub
89	1	45X62X10	Oil Seal
90	1	4648025	Bearing Support
91	1	4148029	Dust Seal
92	2	4788219	Gasket
93	1	34118012	Large Washer M12 UNI 6593 Zinc Plated
94	1	31512925	Bolt UNI 5739 M12 x 25 10.9
95	1	4648026	Bearing Cover
96	1	6560010	Grease Nipple M10 UNI 7663-A
97	1	4004030	Adjustmernt Pole
98	4	34120020	Washer UNI 6592 M20
99	4	4214577	Spring Cover
100	4	31512025	Bolt UNI 5739 M12 x 25 8.8
101	As Req'd	34121012	Washer UNI 1751 M12
102	8	34120012	Washer UNI 6592 M12
103	4	4834002	Cover Adjustment Arm
104	4	4534002	Spacer
105	2	4834001	Pole Block
106	4	31312050	Bolt UNI 5737 M12 x 50 8.8
107	As Req'd	34101012	Nut UNI 5587 M12
108	As Req'd	4811401	Left Curve Blade
109	As Req'd	4811400	Right Curve Blade

# TILLER ASSEMBLY

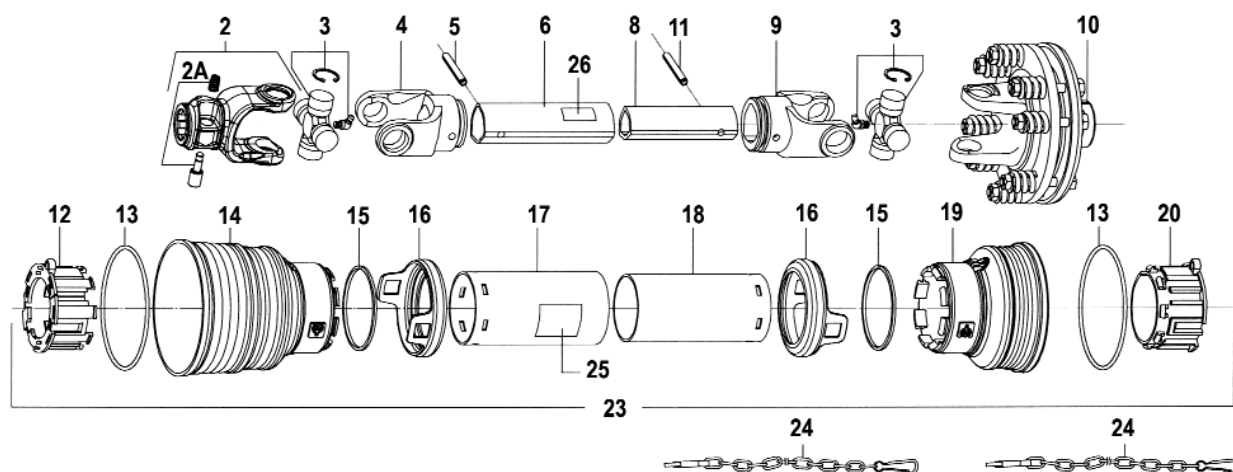
<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
110	As Req'd	31412035	Bolt UNI 5738 M12 x 35 8.8
111	2	4211802	Tension Spring
112	1	4001818	Spring Support R145
113	1	4001819	Spring Support R165
112	1	4001820	Spring Support R185
113	1	4001572	Cover Pin R145
113	1	4001573	Cover Pin R165
113	1	4001574	Cover Pin R185
114	23	4931816	Spring Lock Washer R145
114	27	4931816	Spring Lock Washer R165
114	30	4931816	Spring Lock Washer R185
115	23	4211801	Spring R145
115	27	4211801	Spring R165
115	30	4211801	Spring R185
116	1	4004808	Rear Board R145
116	1	4001809	Rear Board R165
116	1	4001810	Rear Board R185

## TINE CHART

Model Number	Number of Tines		Number of Bolts & Nuts	Number of Washers
	R.H.	L.H.		
R145	14	14	56	60
R165	16	16	64	68
R185	18	18	72	76

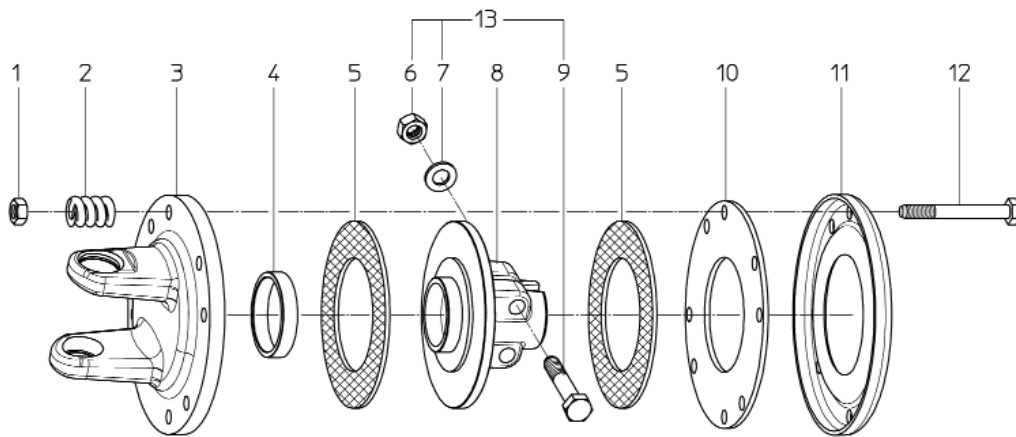


# DRIVESHAFT ASSEMBLY



<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
2	1	1025010	Yoke Assembly, Tractor End
2A	1	1581038	Push Pin Kit
3	2	1005020	Cross Assembly
4	1	1705027	Outer Tube Yoke
5	1	6331075	Roll Pin 8 x 75 Outer Tube
6	1	1527044	Outer Tube
8	1	1526044	Inner Tube
9	1	1705029	Inner Tube Yoke
10	1	1345018	Torque Limiter, 2 Friction Discs
11	1	6331065	Roll Pin 8 x 65 Inner Tube
12	1	1785710	Tube Bearing
13	2	1215733	Stiffening Ring
14	1	1785703	Standard Cone
15	2	1215735	Stop Ring
16	2	1885709	Safety Sleeve
17	1	1776034	Outer Tube Shield
18	1	1877034	Inner Tube Shield
19	1	1785702	Short Cone
20	1	1785711	Tube Bearing, Inner Tube
23	1	90SC5034	Complete Protection
24	2	1006065	Anti-rotation Chain
25	1	1140001	Outer Decal
26	1	1140003	Inner Decal

# SLIP CLUTCH ASSEMBLY



SLIPPING TORQUE TABLE	
SPRINGS COMPRESSION HEIGHT SETTING [mm]	SLIPPING TORQUE (+10%) [Nm]
29	300
28	450
27	750

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	8	6411010	Screw Nut (For Spring)
2	8	1215012	Spring
3	1	1705006	Flange With Yoke
4	1	1705009	Bushing
5	2	1805010	Friction Disc
6	2	6410112	Screw Nut
7	2	6412112	Spring Washer
8	1	1705005	Hub With Flange
9	2	6141270	Bolt
10	1	1135008	Inner Disc
11	1	1135007	Pressure Disc
12	8	6001085	Bolt (For Spring)
13	1	6761270	Locking Bolt Kit Replacement

# LIMITED WARRANTY



GEARMORE, INC., warrants each new Gearmore product to be free from defects in material and workmanship for a period of twelve (12) months from date of purchase to the original purchaser. This warranty shall not apply to implements or parts that have been subject to misuse, negligence, accident, or that have been altered in any way.

Our obligation shall be limited to repairing or replacement of any part, provided that such part is returned within thirty (30) days from date of failure to Gearmore through the dealer from whom the purchase was made, transportation charges prepaid.

This warranty shall not be interpreted to render us liable for injury or damages of any kind or nature, direct, consequential or contingent, to person or property. This warranty does not extend to loss of crops, loss because of delay in harvesting or any other expenses, for any other reasons.

Gearmore in no way warrants engines, tires, or other trade accessories, since these items are warranted separately by these respective manufacturers.

Gearmore reserves the right to make improvements in design or changes in specification at any time, without incurring any obligations to owners or units previously sold.

GEARMORE, INC.  
13477 Benson Ave.  
Chino, CA 91710

Always refer to and heed machine operating warning decals on machine.

*The serial number of this product is stored in our computer database, thus submitting a warranty registration card is not required.*