



# ROTARY TILLER "S" SERIES

## Operation, Service & Parts Manual



Carefully read this manual  
before using the machine

April 2009

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 S Series Rotary Tillers are designed to till soil for seedbed or planting preparation. The S Series Tillers are adapted for tractors with 540 rpm PTO speed and Category 2, 3-point hitch tractors up to 90 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.

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

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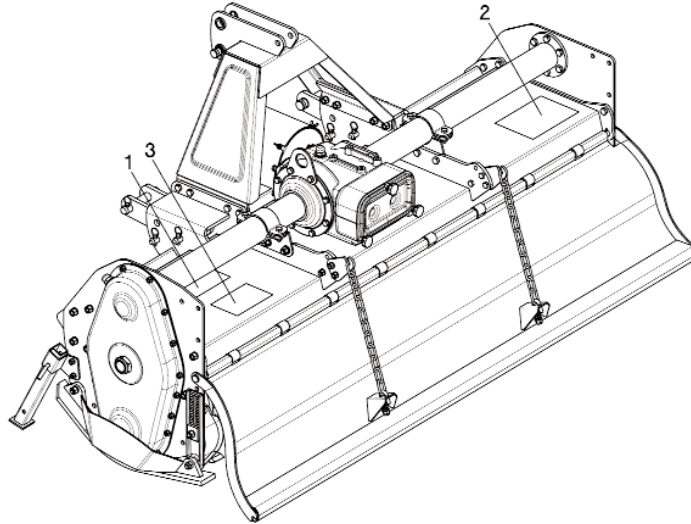
It is used for general information, when people's safety or the efficiency of the parts are not at risk.

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# 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)

1 - SEE MANUAL FOR MINIMUM OVERLAP & MAXIMUM MAXIMUM LENGTHS

BOTTOMING OUT

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.

SHIELD

DEFLECTOR

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.

1. READ MANUAL

2. SEAT BELTS, ROPS NO RIDERS

3. SAFETY SHOES, HARD HAT, SAFETY GLASSES

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. 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

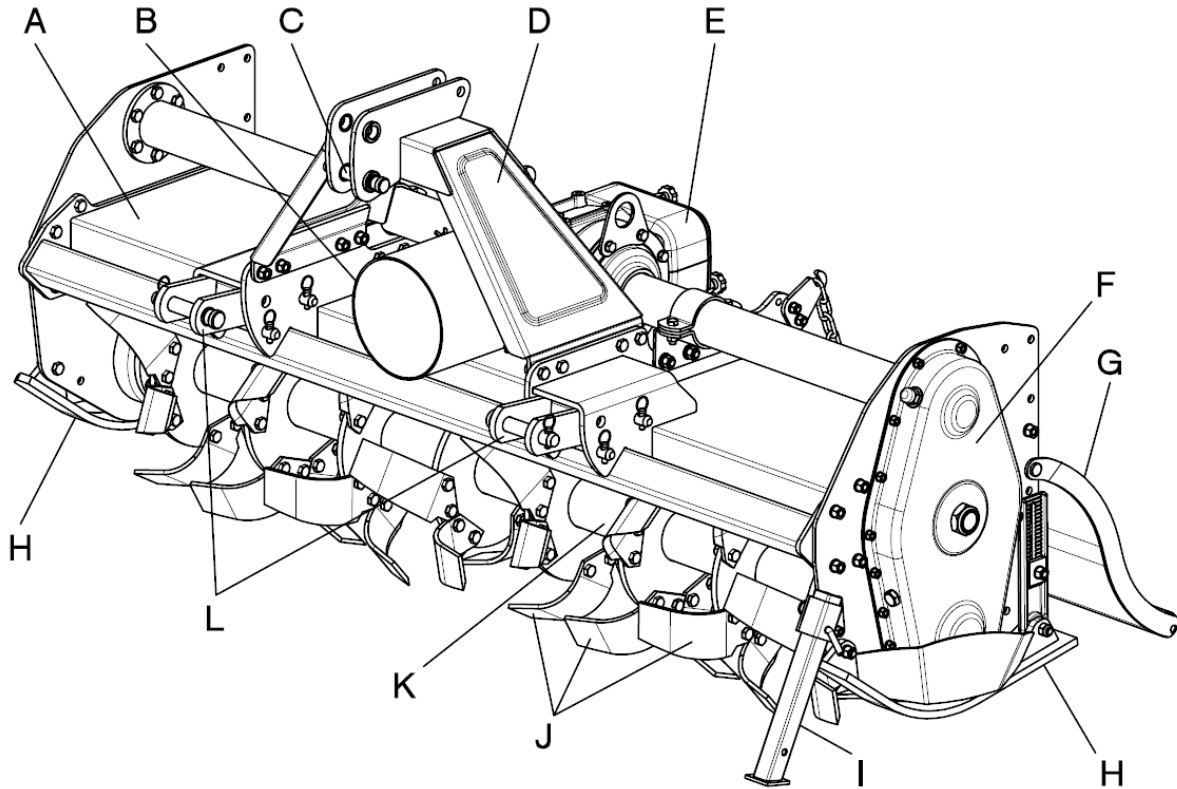
| Model | Tilling Width |        | HP    | Weight (Approx.) |      | Working Depth (Maximum) |        | Side Drive |      | Blades (Qty.) | Blades        |        |
|-------|---------------|--------|-------|------------------|------|-------------------------|--------|------------|------|---------------|---------------|--------|
|       | cm            | Inches |       | kg               | lbs  | cm                      | Inches | Chain      | Gear |               | Blades/Flange | Shape  |
| S     | 160           | 63     | 60-90 | 536              | 1181 | 20                      | 8      |            | *    | 36            | 6             | Curved |
|       | 180           | 73     | 60-90 | 568              | 1252 | 20                      | 8      |            | *    | 42            | 6             | Curved |
|       | 205           | 83     | 60-90 | 612              | 1350 | 20                      | 8      |            | *    | 48            | 6             | Curved |
|       | 230           | 93     | 60-90 | 660              | 1455 | 20                      | 8      |            | *    | 54            | 6             | Curved |
|       | 255           | 103    | 60-90 | 715              | 1576 | 20                      | 8      |            | *    | 60            | 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        | G) | Rear Board         |
| B) | PTO Guard         | H) | Skid               |
| C) | Top Link Coupling | I) | Parking Stand      |
| D) | Third Point Mast  | J) | Tines              |
| E) | Gearbox           | K) | Rotor              |
| F) | Transmission Case | L) | Lower Hitch Blocks |

# 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.
- Raising or lifting of the equipment when the power take off is engaged.
- 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

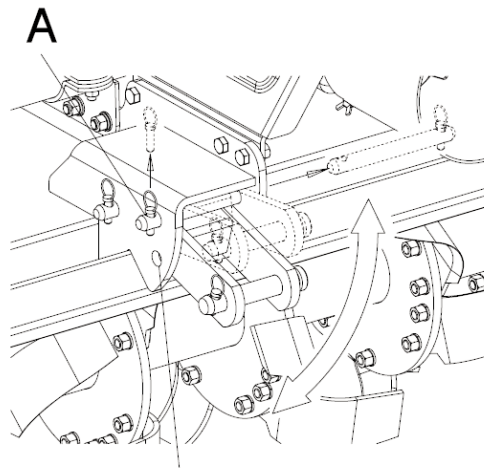
## ATTACHMENT TO THE TRACTOR

This tiller may be attached to any tractor equipped with a Cat. 2, 3-point hitch with suitable ball ends; it can also be attached by means of a Cat. 2 Quick Hitch.

### 3-POINT CATEGORY 2 HITCH

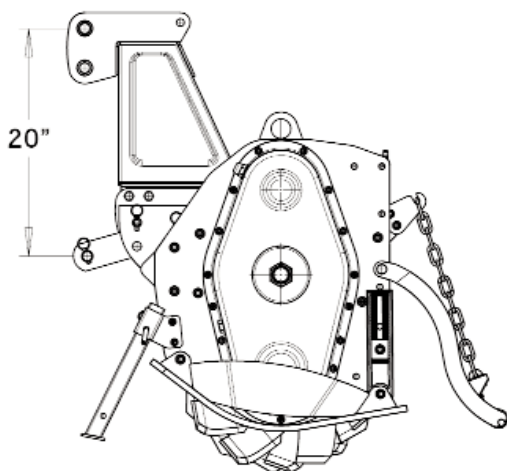
To connect the tiller to the tractor's Cat. 2, 3-point hitch, do the following operations:

- 1) Put the floating brackets in the lower position inserting the pin A in the upper hole as shown in picture 1; this gives you the standard A.S.A.E. vertical dimension of 20" (picture 2). The horizontal distance between the brackets is 32 1/2".

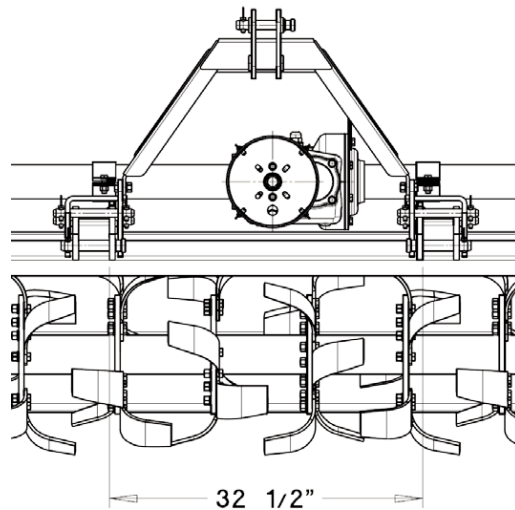


B

picture 1

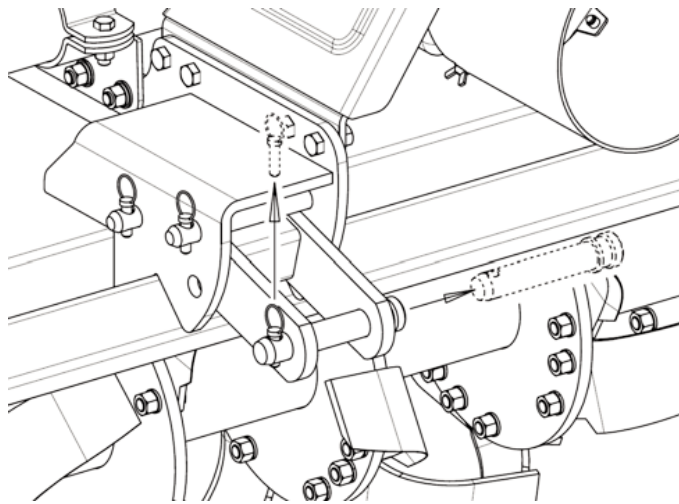


picture 2



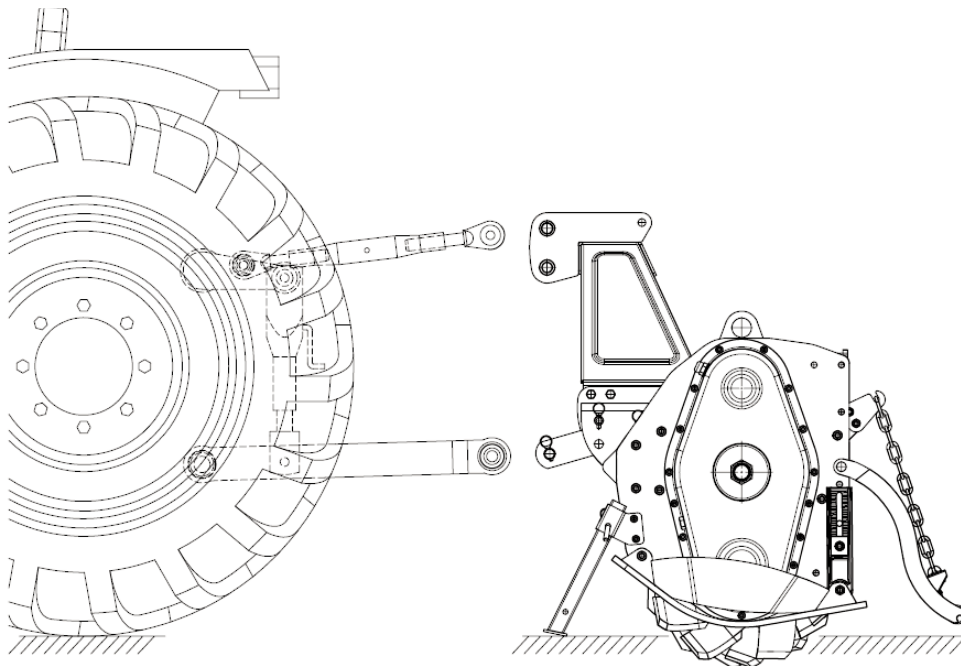
# SET-UP

- 2) Remove the cotter pins from the hitch pins (picture 3);
- 3) Remove the lower hitch pins from the lower hitch blocks (picture 3);



**picture 3**

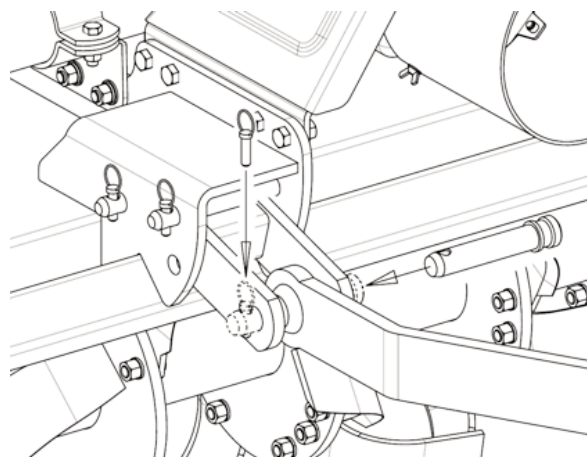
- 4) Before attaching the equipment to the tractor, make sure that the ground is smooth and flat and that nobody is standing between the tractor and the tiller; slowly move the tractor towards the tiller by aligning the tractor lifter arms with the blocks' holes (picture 4); turn the engine off and pull the brake;



**picture 4**

# SET-UP

- 5) Insert the lower hitch pins through the hitch blocks and ball ends (picture 5);
- 6) Secure them by means of the cotter pins which were previously removed (picture 5);



**picture 5**

- 7) 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 cotter pin. Shift the parking stand in the upper position .
- 8) 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.
- 9) Make sure that the central unit axis (case/bevel gear pair) is parallel to the ground, thus minimizing the stresses on the power take off and increasing the working life of the equipment.

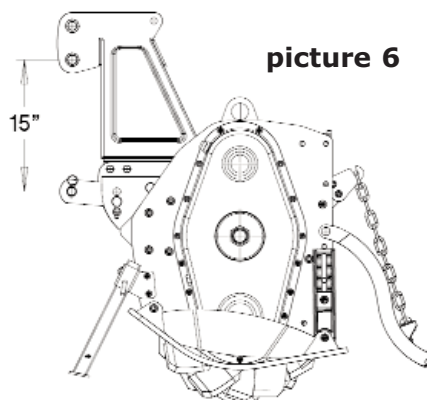


**After executing all the above mentioned activities, make sure that all the nuts and bolts are tightened.**

## 3-POINT CATEGORY 2 QUICK HITCH

The S Series Reverse Tillers are Cat. 2 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) Put the floating brackets in the upper position inserting the pin in the lower hole as shown in picture 7; this gives you the standard A.S.A.E. vertical dimension of 15" (picture 6).



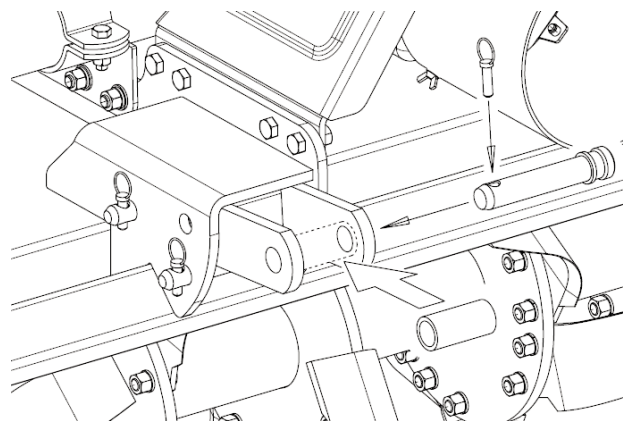
# SET-UP

2) Remove the cotter pin from the hitch pins and lower hitch pins from the lower hitch blocks (picture 3).

3) Insert the lower bushing of the kit in the lower hitches (picture 7);

4) Insert the lower hitch pins through the hitch block and bushing (picture 7);

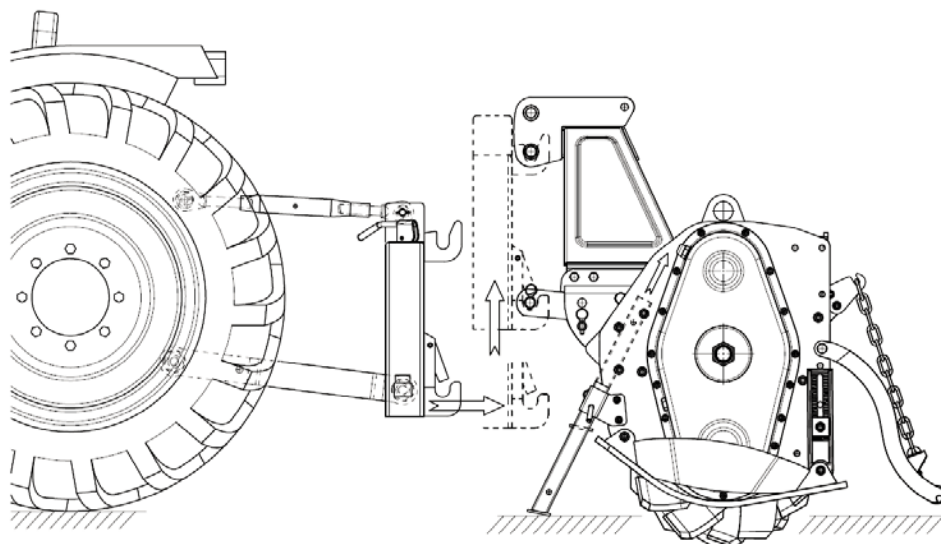
5) Secure it by means of the cotter pins which were previously removed (picture 7);



**picture 7**

6) Repeat the same operations from 2 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.



8) Lift the Quick Hitch until its hooks engage the hitches of the implement.

9) Raise the parking stand to the upper position.

# SET-UP

## PTO SHAFT CONNECTION

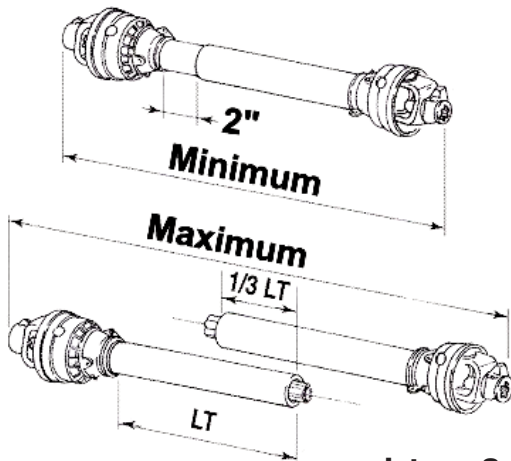
Before installing the PTO shaft make sure that the RPM rating and the direction of rotation match those of the tractor. Carefully read the PTO shaft and tractor instructions. Furthermore, accurately read the instructions of the manufacturer of the PTO shaft and of the tractor.

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**

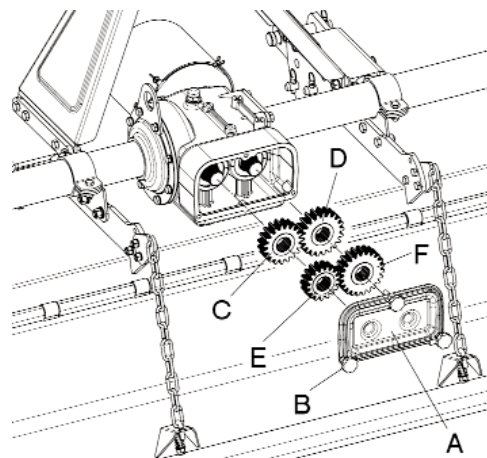
Check that the PTO shaft minimum and maximum length are within the parameters of the machine tractor coupling.

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.

## SPEED GEAR SETUP

The Series S gearbox is provided with two pair of gears. By changing their relative position 4 different rotor speeds are achieved. Choose the desired rotor speed and follow the instructions below:

- 1) Drain the oil from the gearbox;
- 2) Remove the cover A unscrewing the lobe knobs B (see picture 9).



**picture 9**



# SET-UP

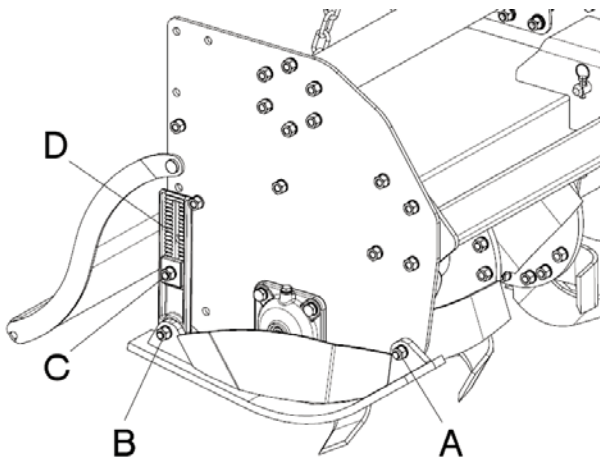
- 3) Change the position of the gears C and D according to the following table:

| SETTING | C GEAR   | D GEAR   | ROTOR SPEED |
|---------|----------|----------|-------------|
| 1       | 23 Teeth | 17 Teeth | 145 rpm     |
| 2       | 21 Teeth | 19 Teeth | 175 rpm     |
| 3       | 19 Teeth | 21 Teeth | 215 rpm     |
| 4       | 17 Teeth | 23 Teeth | 260 rpm     |

- 4) Fix the remaining gears E and F on the suitable pins on the internal face of the cover;  
 5) Put back the cover in its position, tighten the screws, and fill with oil.

## 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 10

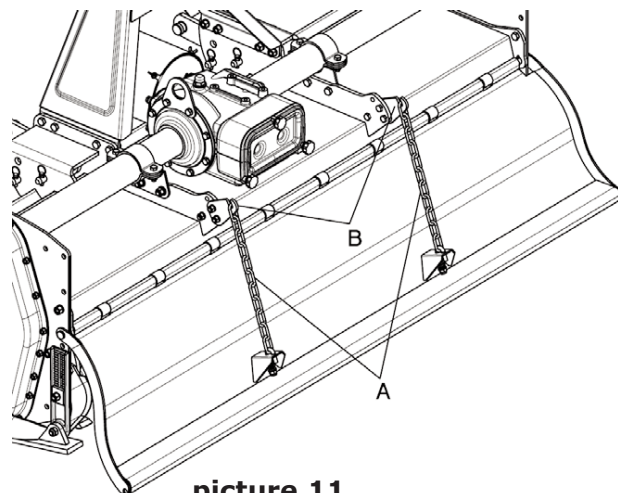
To adjust the working depth, loosen nut **A**, **B**, and **C** (picture 10) and adjust the skid height according to the notches **D**.

When the adjustment is completed, tighten the screws to the correct torque, according to the values suggest 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 adjusted in height to better compact the ground and make it flat. The adjustment can be made by releasing chains **A** (picture 11) from upper hooks **B** and inserting them back to the desired height.



picture 11



# MAINTENANCE



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.



- 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

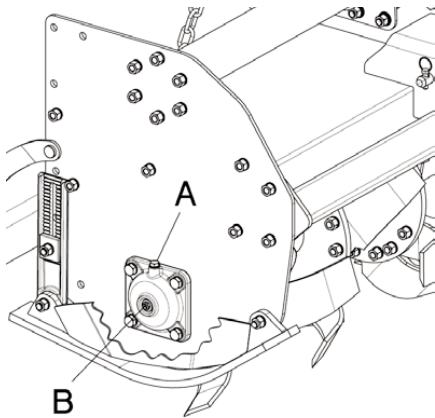
- Grease the PTO shaft crosses.

## EVERY 50 WORKING HOURS

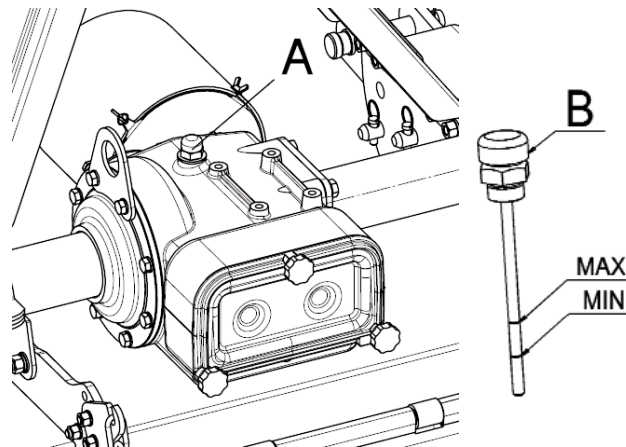
- Check the oil level in the external rotor bearing through the inspection plug **B**. If needed remove the plug **A** and add SAE EP 80W90 oil (picture 12).
- Check the oil level in the case/bevel gear pair by removing gearbox's upper oil plug (**A** - picture 13); oil level should be contained between 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

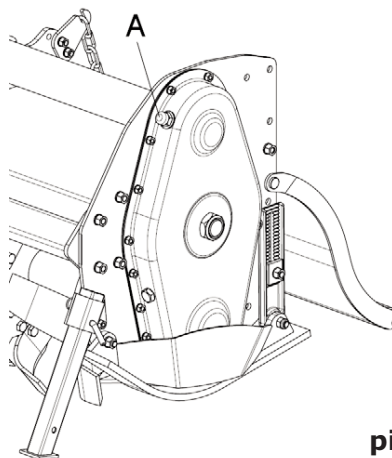
- Change the oil of the case/bevel gear pair, side transmission and rotor support; use SAE EP 80W90 oil. Contact the closest dealer for this maintenance activity.



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



**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

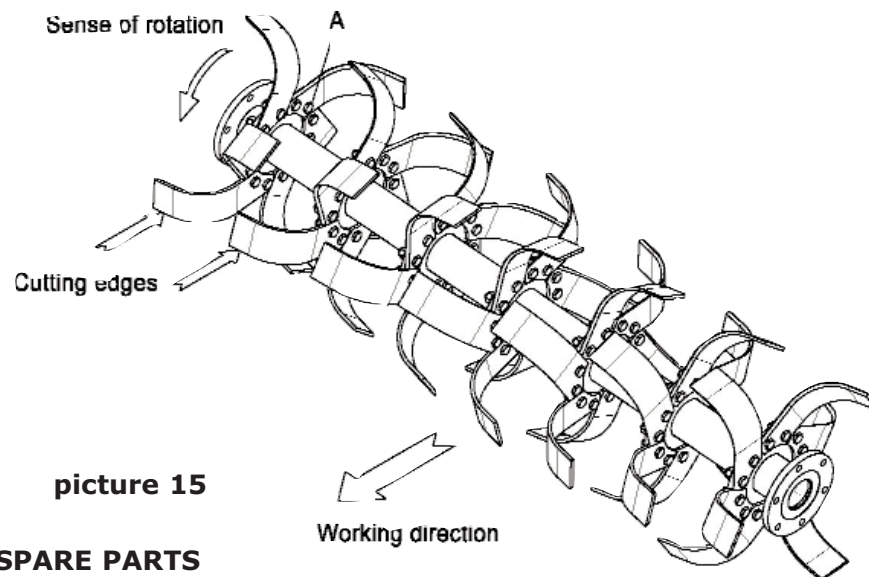
To assure the optimum efficiency of the machine, make sure that the tiller blades are in a good working condition and that their bolts are tightened; replace them if they are broken or bent. The new parts must be installed in the original position.



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 15).



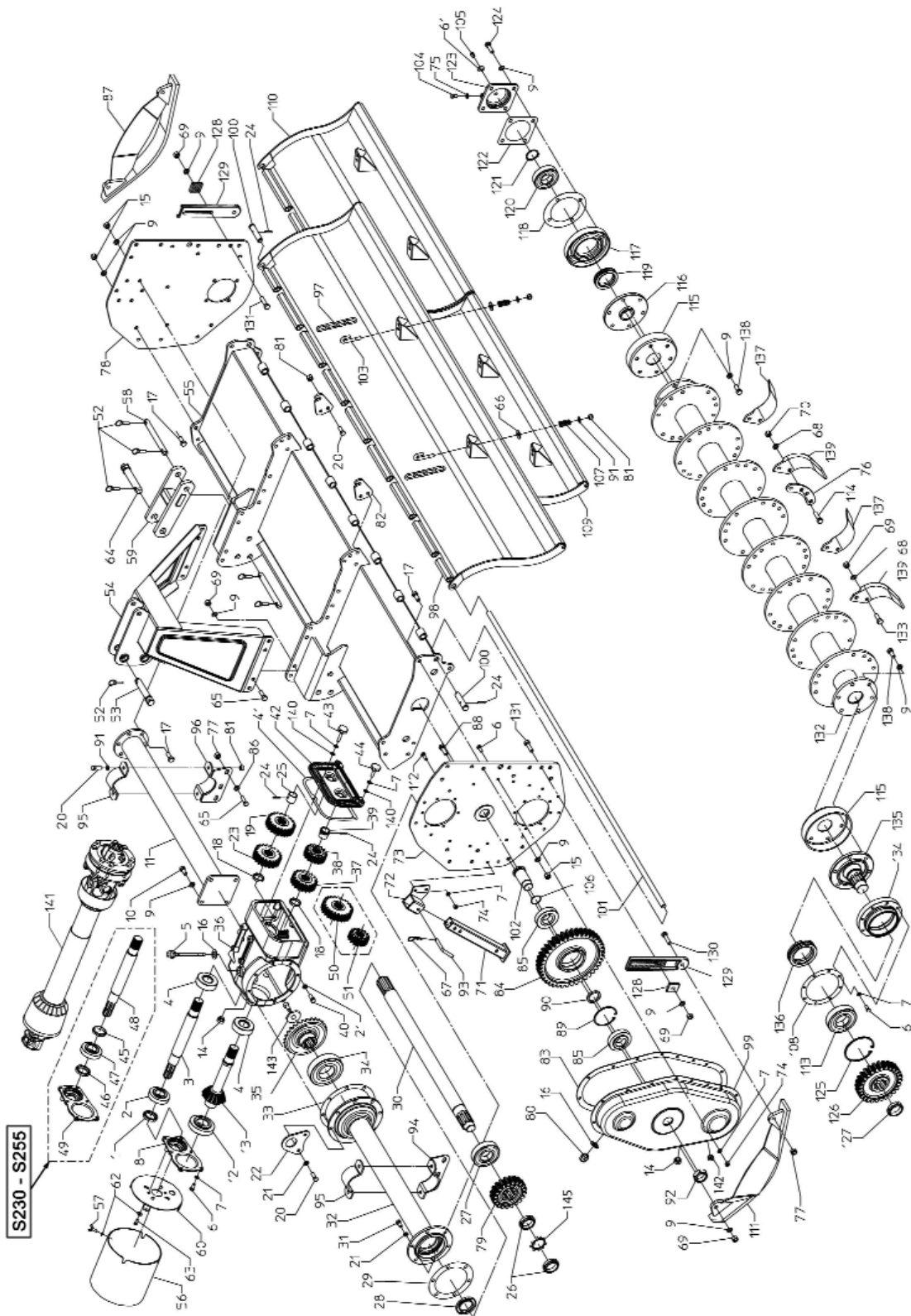
## HOW TO ORDER SPARE PARTS

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.

# "S" TILLER ASSEMBLY



# TILLER ASSEMBLY

| <u>REF#</u> | <u>QTY.</u> | <u>PART NO.</u> | <u>DESCRIPTION</u>                      |
|-------------|-------------|-----------------|---|
| 1           | 1           | 40x62x10        | Oil Seal 40 x 62 x 10 S160 through S205 |
| 2           | 1           | 30308           | Bearing S160 through S205               |
| 3           | 1           | 4224252         | PTO Shaft S160 through S205             |
| 4           | 2           | 32308           | Bearing 32308                           |
| 5           | 1           | 3443022         | Plug M22 x 1.5                          |
| 6           | 14          | 31510025        | Bolt M10 x 1.5 x 25 UNI 5739            |
| 7           | 36          | 34121010        | Washer 10 UNI 1751                      |
| 8           | 1           | 4644260         | Holder Oil Seal Cover S160 through S205 |
| 9           | 40          | 34121014        | Washer 14 UNI 1751                      |
| 10          | 4           | 31514030        | Bolt M14 x 2 x 30 UNI 5739              |
| 11          | 1           | 4004360         | External Support S160                   |
| 11          | 1           | 4004361         | External Support S180                   |
| 11          | 1           | 4004362         | External Support S205                   |
| 11          | 1           | 4004363         | External Support S230                   |
| 11          | 1           | 4004364         | External Support S255                   |
| 12          | 1           | 30310           | Bearing 30310                           |
| 13          | 1           | 4724251         | Bevel Pinion Z=14                       |
| 14          | 2           | 3441022         | Oil Plug M22 x 1.5                      |
| 15          | 19          | 34101014        | Nut M14 x 1.5 UNI 5587                  |
| 16          | 2           | 6470118         | Washer                                  |
| 17          | 19          | 31614035        | Bolt M14 x 1.5 x 35 UNI 5740            |
| 18          | 2           | 4593264         | Spacer 40 x 48 x 10                     |
| 19          | 1           | 4224257         | Gear Z=23                               |
| 20          | As Req'd    | 31512035        | Bolt M12 x 1.75 x 35 UNI 5739           |
| 21          | 14          | 34121012        | Washer 12 UNI 1751                      |
| 22          | 1           | 4934657         | Lifting Hook                            |
| 23          | 1           | 4224256         | Gear Z=21                               |
| 24          | 4           | 6330635         | Split Pin 6 x 35                        |
| 25          | 1           | 4534263         | Gear Guide Pipe                         |
| 26          | 2           | 34008045        | Metal Ring M45 x 1.5                    |
| 27          | 1           | 30311           | Bearing 30311                           |
| 28          | 1           | 55x90x10        | Oil Seal 55 x 90 x10                    |
| 29          | 1           | 4784734         | Gasket                                  |
| 30          | 1           | 4214301         | Shaft S160                              |
| 30          | 1           | 4214302         | Shaft S180                              |
| 30          | 1           | 4214303         | Shaft S205                              |
| 30          | 1           | 4214304         | Shaft S230                              |
| 30          | 1           | 4214305         | Shaft S255                              |
| 31          | 6           | 31512025        | Bolt M12 x 1.75 x 25 UNI 5739           |
| 32          | 1           | 4004811         | Drive Side Support S160                 |
| 32          | 1           | 4004812         | Drive Side Support S180                 |
| 32          | 1           | 4004813         | Drive Side Support S205                 |
| 32          | 1           | 4004814         | Drive Side Support S230                 |

# TILLER ASSEMBLY

| <u>REF#</u> | <u>QTY.</u> | <u>PART NO.</u> | <u>DESCRIPTION</u>             |
|-------------|-------------|-----------------|--------------------------------|
| 32          | 1           | 4004815         | Drive Side Support S255        |
| 33          | 1           | 4784825         | Gasket                         |
| 34          | 1           | 30214           | Bearing 30214                  |
| 35          | 1           | 4724833         | Ring Bevel Gear Z=29           |
| 36          | 1           | 4654250         | Gearbox                        |
| 37          | 1           | 4224255         | Gear Z=19                      |
| 38          | 1           | 4224254         | Gear Z=17                      |
| 39          | 1           | 4534262         | Gear Guide Pipe                |
| 40          | 8           | 31512030        | Bolt M12 x 1.75 x 30 UNI 5739  |
| 41          | 1           | 4784264         | Gasket                         |
| 42          | 1           | 4674261         | Cover                          |
| 43          | 1           | 6601055         | Knob M10 x 55                  |
| 44          | 2           | 6601035         | Knob M10 x 35                  |
| 45          | 1           | 4594216         | Spacer S255 50 x 60 x 10       |
| 46          | 1           | 45x62x10        | Oil Seal 45 x 62 x 10 S255     |
| 47          | 1           | 32210           | Bearing 32210 S255             |
| 48          | 1           | 4224259         | Shaft S230/S255 1-3/4 6 Spline |
| 49          | 1           | 4644261         | Cover S255                     |
| 50          | 1           | 4224258         | Gear Z=25 Optional 1000 RPM    |
| 51          | 1           | 4224253         | Gear Z=15 Optional 1000 RPM    |
| 52          | 11          | 6350010         | Lynch Pin D10                  |
| 53          | 1           | 5304435         | Pin                            |
| 54          | 1           | 4004297         | Junction for 3rd Point         |
| 55          | 1           | 4104270         | Frame S160 (gear drive)        |
| 55          | 1           | 4104271         | Frame S180 (gear drive)        |
| 55          | 1           | 4104272         | Frame S205 (gear drive)        |
| 55          | 1           | 4104273         | Frame S230 (gear drive)        |
| 55          | 1           | 4104274         | Frame S255 (gear drive)        |
| 56          | 1           | 6654241         | Protecting Cover               |
| 57          | 3           | 33108020        | Bolt M8 x 1.25 x 20 UNI 5449   |
| 58          | 4           | 4304202         | Pin                            |
| 59          | 2           | 4004298         | Plate 3rd Point                |
| 60          | 1           | 4934240         | Guard Support                  |
| 61          | 1           | 6470114         | Washer                         |
| 62          | 5           | 34118008        | Washer UNI 6593                |
| 63          | 2           | 31508016        | Bolt M8 x 1.25 x 16 UNI 5739   |
| 64          | 1           | 5304434         | Lower 3rd Point Hitch Pin      |
| 65          | 12          | 31614040        | Bolt M14 x 1.5 x 40 UNI 5740   |
| 66          | As Req'd    | 34118012        | Washer                         |
| 67          | 1           | 6351003         | Split Pin "R" 3 x 60           |
| 68          | As Req'd    | 34132014        | Washer FIAT 10188              |
| 69          | As Req'd    | 34101014        | Nut M14 UNI 5587               |
| 70          | As Req'd    | 34101914        | Nut M14 PF UNI 5587            |



# TILLER ASSEMBLY

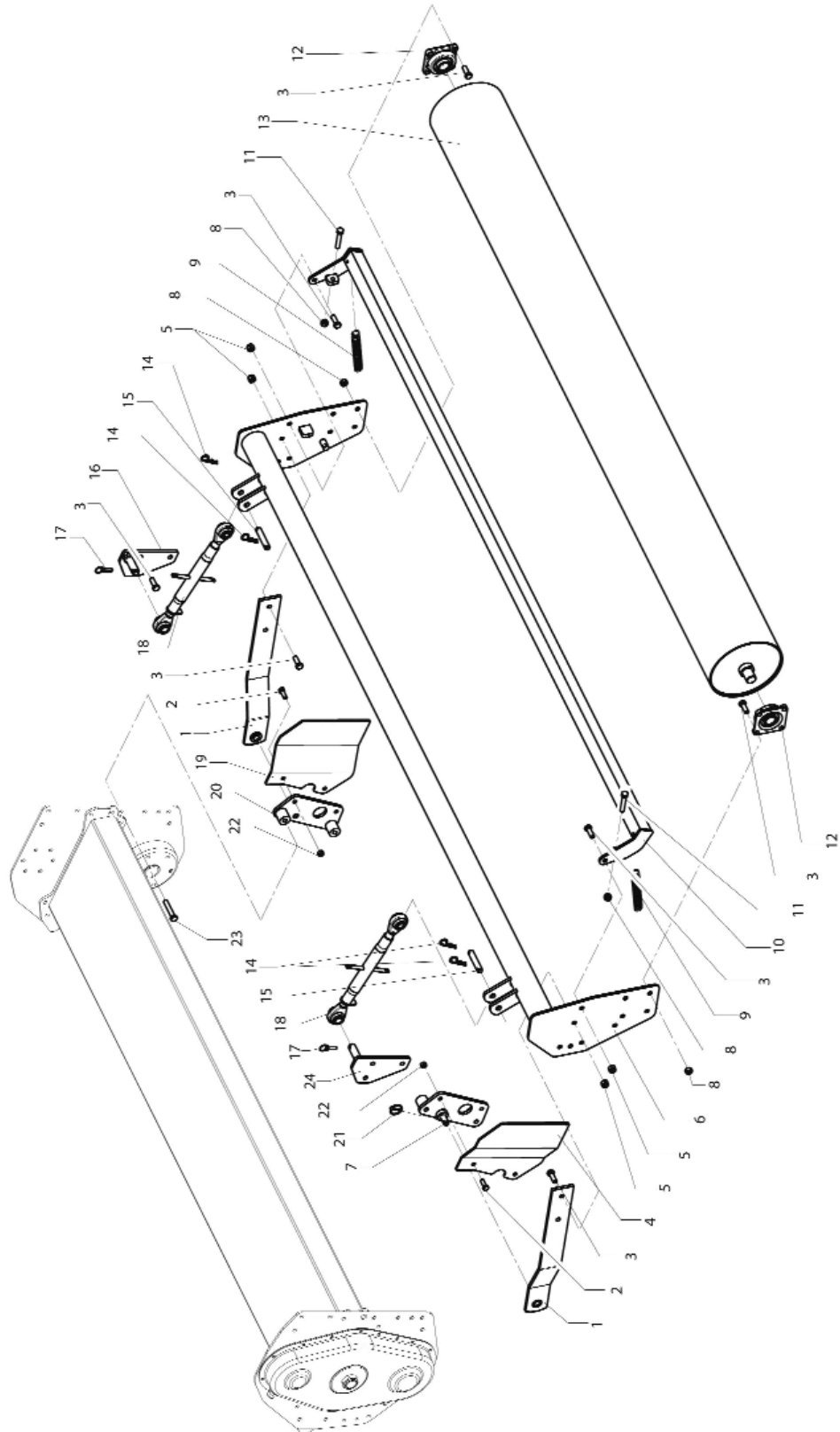
| <u>REF#</u> | <u>QTY.</u> | <u>PART NO.</u> | <u>DESCRIPTION</u>                   |
|-------------|-------------|-----------------|--------------------------------------|
| 71          | 1           | 4002376         | Parking Stand                        |
| 72          | 1           | 4002377         | Parking Stand Support                |
| 73          | 1           | 4004803         | Gearing Side Plate                   |
| 74          | 19          | 34100010        | Nut M10 UNI 5587                     |
| 75          | 1           | 6470112         | Washer                               |
| 76          | As Req'd    | 4934019         | Counterflanges For Blades (Optional) |
| 77          | 6           | 34107014        | Stop Nut M14                         |
| 78          | 1           | 4934223         | External Side Plate                  |
| 79          | 1           | 4724886         | Driving Gear Z=20                    |
| 80          | 1           | 3442022         | Plug M22 x 1.5                       |
| 81          | As Req'd    | 34106012        | Self Locking Nut M12                 |
| 82          | As Req'd    | 4934778         | Chain Plate                          |
| 83          | 1           | 4784801         | Gasket                               |
| 84          | 1           | 4724887         | Intermediate Gear Z=41               |
| 85          | 2           | 30309           | Bearing 30309                        |
| 86          | 4           | 34120014        | Washer 14                            |
| 87          | 1           | 4004431         | Right Skid                           |
| 88          | 2           | 31414045        | Bolt Bolt M14 x 1.5 x 45 Length 20   |
| 89          | 1           | 6310110         | Circlip I110 Internal                |
| 90          | 1           | 4594230         | Spacer                               |
| 91          | As Req'd    | 34120012        | Washer 12 UNI 6592                   |
| 92          | 1           | 34109033        | Self Locking Nut M33 MB UNI 7474     |
| 93          | 1           | 4236115         | Pin, Parking Stand Lock              |
| 94          | 1           | 4004529         | Support, Extension Clamping (LH)     |
| 95          | 2           | 4834518         | U-bolt                               |
| 96          | 1           | 4004530         | Support, Extension Clamping (RH)     |
| 97          | As Req'd    | 4508001         | Chain                                |
| 98          | 1           | 4004280         | Bonnet S160                          |
| 98          | 1           | 4004281         | Bonnet S180                          |
| 98          | 1           | 4004282         | Bonnet S205                          |
| 99          | 1           | 4004804         | Cover                                |
| 100         | 2           | 4232111         | Cover Side Pin                       |
| 101         | 1           | 4232106         | Bonnet Pin S160                      |
| 101         | 1           | 4232107         | Bonnet Pin S180                      |
| 101         | 1           | 4232108         | Bonnet Pin S205                      |
| 101         | 1           | 4237901         | Bonnet Pin S230                      |
| 101         | 1           | 4234201         | Bonnet Pin S255                      |
| 102         | 1           | 4204801         | Pin                                  |
| 103         | As Req'd    | 4302183         | Chain Hook                           |
| 104         | 1           | 31510010        | Bolt M10 x 1.5 x 16 UNI 5739         |
| 105         | 1           | 3444014         | Oil Level Plug                       |
| 106         | 1           | 6836220         | Gasket O.R. 220                      |
| 107         | As Req'd    | 4212214         | Spring                               |
| 108         | 1           | 4784635         | Gasket                               |

# TILLER ASSEMBLY

| <u>REF#</u> | <u>QTY.</u> | <u>PART NO.</u> | <u>DESCRIPTION</u>                          |
|-------------|-------------|-----------------|---|
| 109         | 1           | 4004289         | Left Bonnet S230                            |
| 109         | 1           | 4004290         | Left Bonnet S255                            |
| 110         | 1           | 4004287         | Right Bonnet S230                           |
| 110         | 1           | 4004288         | Right Bonnet S255                           |
| 111         | 1           | 4004430         | Left Skid                                   |
| 112         | 2           | 31510030        | Bolt M10 x 1.5 x 30 UNI 5739                |
| 113         | 1           | 21312           | Bearing                                     |
| 114         | As Req'd    | 31414950        | Bolt M14 x 1.5 x 50 UNI 5738                |
| 115         | 2           | 4144201         | Dust Cover                                  |
| 116         | 1           | 4704006         | Hub Right Side                              |
| 117         | 1           | 4644005         | Bearing Support                             |
| 118         | 1           | 4784117         | Hub Gasket Right Side                       |
| 119         | 1           | 6203911         | Oil Seal GNL 6460 74 x 94 x 20              |
| 120         | 1           | 6310            | Bearing 6310                                |
| 121         | 1           | 47150           | Circlip E50                                 |
| 122         | 1           | 4784118         | Gasket                                      |
| 123         | 1           | 4644001         | Cover Right Side                            |
| 124         | 4           | 31514045        | Bolt M14 x 2 x 45 UNI 5739                  |
| 125         | 1           | 6310130         | Circlip for Bores 130                       |
| 126         | 1           | 4724888         | Gear Z=27                                   |
| 127         | 1           | 34127055        | Self Locking Metal Ring M50 x 1.5 GUP       |
| 128         | 2           | 4704654         | Plate, Rod Adjustment                       |
| 129         | 2           | 4704653         | Skid Adjusting Rod                          |
| 130         | 2           | 31414055        | Bolt M14 x 1.5 x 55 UNI 5738                |
| 131         | 2           | 31414050        | Bolt M14 x 1.5 x 50 UNI 5738                |
| 132         | 1           | 4004370         | Rotor S160                                  |
| 132         | 1           | 4004371         | Rotor S180                                  |
| 132         | 1           | 4004372         | Rotor S205                                  |
| 132         | 1           | 4004373         | Rotor S230                                  |
| 132         | 1           | 4004374         | Rotor S255                                  |
| 133         | As Req'd    | 31414040        | Bolt M14 x 1.5 x 40 Length 20               |
| 134         | 1           | 4704009         | Pipeline Gear Support                       |
| 135         | 1           | 4724008         | Pipe Gear Support Hub                       |
| 136         | 1           | 6200750         | Oil Seal GNL FT.750                         |
| 137         | As Req'd    | 4814004         | Right Blade                                 |
| 137A        | As Req'd    | 4814006         | Right Hand Tungsten Coated Blade            |
| 138         | 12          | 31514035        | Bolt M14 x 2 x 35 UNI 5739                  |
| 139         | As Req'd    | 4814005         | Left Blade                                  |
| 139A        | As Req'd    | 4814007         | Left Hand Tungsten Coated Blade             |
| 140         | 3           | 34120010        | Washer                                      |
| 141         | 1           | EYE81064-2254   | Driveline S160 - S205 1 3/8 6 Spline Clutch |
| 141         | 1           | EYE81074-2255   | Driveline S230 - S255 1 3/4 6 Spline Clutch |
| 142         | 1           | 3441014         | Oil Plug M14 x 1.5                          |
| 143         | 1           | 4934311         | Special Washer 14                           |
| 144         | 1           | 30614035        | Bolt M14 x 2 x 35 UNI 5733                  |
| 145         | 1           | 34031045        | Wsher MB M45 DIN 5406                       |



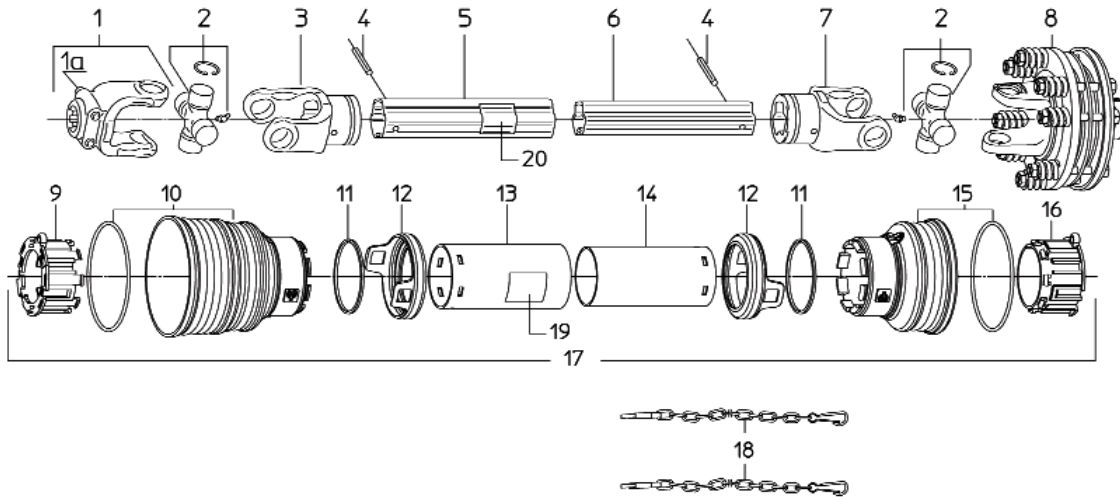
# TILLER ROLLER ASSEMBLY



# TILLER ROLLER ASSEMBLY

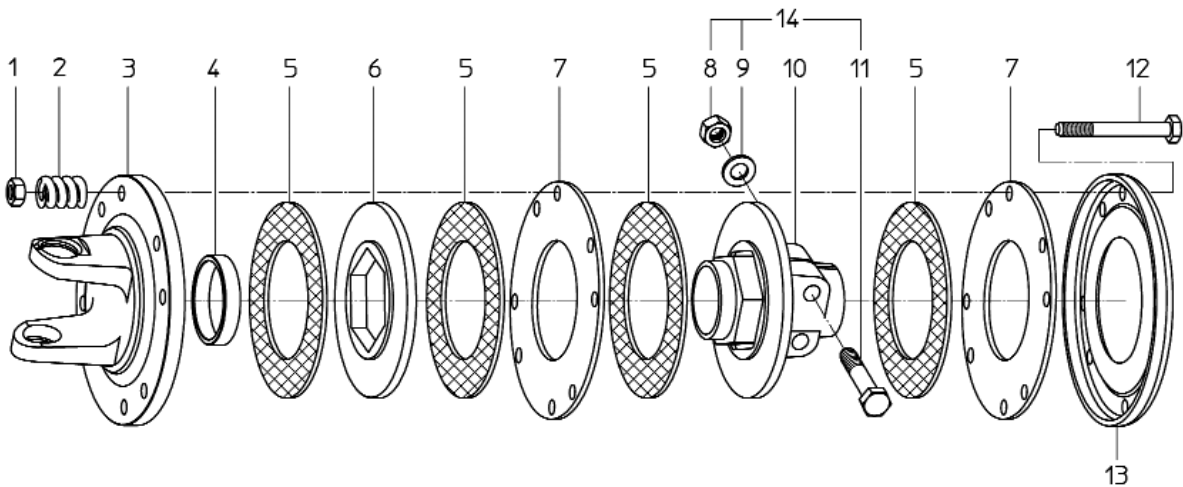
| <u>REF#</u> | <u>QTY.</u> | <u>PART NO.</u> | <u>DESCRIPTION</u>     |
|-------------|-------------|-----------------|------------------------|
| 1           | 1           | 4004495         | Roller Arm             |
| 2           | 4           | 3021112035      | Bolt UNI 5739 M12 x 35 |
| 3           | 20          | 3021114040      | Bolt UNI 5739 M14 x 40 |
| 4           | 1           | 4134403         | Left Deflector         |
| 5           | 2           | 3444101014      | Nut DIN 980 M14        |
| 6           | 1           | 4004483         | Roller Frame S160      |
| 6           | 1           | 4004484         | Roller Frame S180      |
| 6           | 1           | 4004485         | Roller Frame S205      |
| 6           | 1           | 4004486         | Roller Frame S230      |
| 6           | 1           | 4004487         | Roller Frame S255      |
| 7           | 1           | 4004488         | Roller Support         |
| 8           | 2           | 3414101014      | Nut UNI 5587 M14       |
| 9           | 2           | 4211802         | Spring                 |
| 10          | 1           | 4004490         | Roller Scraper S160    |
| 10          | 1           | 4004491         | Roller Scraper S180    |
| 10          | 1           | 4004492         | Roller Scraper S205    |
| 10          | 1           | 4004493         | Roller Scraper S230    |
| 10          | 1           | 4004494         | Roller Scraper S255    |
| 11          | 2           | 3021114080      | Bolt UNI 5739 M14 x 8  |
| 12          | 2           | 2000035         | UDF/207 Support        |
| 13          | 1           | 4004478         | Roller S160            |
| 13          | 1           | 4004479         | Roller S180            |
| 13          | 1           | 4004480         | Roller S205            |
| 13          | 1           | 4004481         | Roller S230            |
| 13          | 1           | 4004482         | Roller S255            |
| 14          | 4           | 6351004         | Split Pin D.4          |
| 15          | 2           | 4304003         | Pin                    |
| 16          | 1           | 4004028         | Coupling Plate         |
| 17          | 2           | 6350010         | Split Pin D.10         |
| 18          | 2           | 6391320         | Arm TP19.25/320        |
| 19          | 1           | 4134404         | Right Deflector        |
| 20          | 1           | 4004489         | Right Roller Support   |
| 21          | 2           | 6331046         | Snap Plug              |
| 22          | 4           | 3444101012      | Nut DIN 980 M12        |
| 23          | 6           | 3011114080      | Bolt UNI 5737 M14 x 8  |
| 24          | 1           | 4004029         | Coupling Plate         |

# DRIVESHAFT ASSEMBLY



| <b>REF#</b> | <b>QTY.</b> | <b>PART NO.</b> | <b>DESCRIPTION</b>                          |
|-------------|-------------|-----------------|---|
| 1           | 1           | 1028010         | Yoke Assembly                               |
| 1A          | 2           | 1581038         | Push Pin Kit                                |
| 2           | 2           | 1008020         | Cross Assembly                              |
| 3           | 1           | 1708067         | Outer Tube Yoke                             |
| 4           | 2           | 6331090         | 10 x 90 Elastic Pin                         |
| 5           | 1           | 1818045         | Outer Tube S160, S180, S205 & S230          |
| 5           | 1           | 1818055         | Outer Tube S255                             |
| 6           | 1           | 1817045         | Inner Tube S160, S180, S205 & S230          |
| 6           | 1           | 1817055         | Inner Tube S255                             |
| 7           | 1           | 1708069         | Inner Tube Yoke                             |
| 8           | 1           | 1468031         | Torque Limiter S160, S180 & S205            |
| 8           | 1           | 1448032         | Torque Limiter S230 & S255                  |
| 9           | 1           | 1788010         | Tube Bearing Outer Tube                     |
| 10          | 1           | 1788003         | Standard Cone                               |
| 11          | 2           | 1218035         | Stop Ring                                   |
| 12          | 2           | 1888009         | Safety Coupling                             |
| 13          | 1           | 1778034         | Outer Tube Shield S160, S180, S205 & S230   |
| 13          | 1           | 1778044         | Outer Tube Shield S255                      |
| 14          | 1           | 1879034         | Inner Tube Shield S160, S180, S205 & S230   |
| 14          | 1           | 1879044         | Inner Tube Shield S255                      |
| 15          | 1           | 1788002         | Short Cone                                  |
| 16          | 1           | 1788011         | Tube Bearing Inner Tube                     |
| 17          | 1           | 90SS8034        | Complete Protection S160, S180, S205 & S230 |
| 17          | 1           | 90SS8044        | Complete Protection S255                    |
| 18          | 2           | 1006065         | Anti-Rotation Chain                         |
| 19          | 1           | 1140010         | Outer Decal                                 |
| 20          | 1           | 1140011         | Inner Decal                                 |

# SLIP CLUTCH ASSEMBLY



| <u>REF#</u> | <u>QTY.</u> | <u>PART NO.</u> | <u>DESCRIPTION</u>                               |
|-------------|-------------|-----------------|--|
| 1           | 8           | 6411010         | Lock Nut   |
| 2           | 8           | 1215012         | Spring   |
| 3           | 1           | 1708006         | Flange With Yoke                                 |
| 4           | 1           | 1705009         | Bushing  |
| 5           | 4           | 1808010         | Friction Disc                                    |
| 6           | 1           | 1708034         | Middle Plate Hex                                 |
| 7           | 2           | 1138008         | Inner Plate Round                                |
| 8           | 2           | 6410112         | Screw Nut S160, S180 & S205                      |
| 8           | 2           | 6410114         | Screw Nut S230 & S255                            |
| 9           | 2           | 6412112         | Spring Washer S160, S180 & S205                  |
| 9           | 2           | 6412114         | Spring Washer S230 & S255                        |
| 10          | 1           | 1708018         | Hub With Flange 1 3/8 6-Spline S160, S180 & S205 |
| 10          | 1           | 1708019         | Hub With Flange 1 3/4 6-Spline S230 & S255       |
| 11          | 2           | 6141270         | Bolt S160, S180 & S205                           |
| 11          | 2           | 6141480         | Bolt S230 & S255                                 |
| 12          | 8           | 6001010         | Bolt For Spring                                  |
| 13          | 1           | 1138007         | Cover Plate                                      |
| 14          | 2           | 6761270         | Locking Bolt Kit S160, S180 & S205               |
| 14          | 2           | 6761480         | Locking Bolt Kit S230 & S255                     |

# 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.*