



Farm & Garden Equipment

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USE AND MAINTENANCE MANUAL

ROTARY TILLER TANGO



PREFACE

This manual is an integral part of the machine.

It must always accompany the machine and be kept within reach of the operator.
The enclosures mentioned are an integral part of this manual.

The purpose of this manual.

This manual gives information for the correct and safe use of the machine.
The owner must read this manual carefully before work with the machine.

Responsibility of the owner

The owner is responsible for accidents or damages caused to people or things due to negligence in following the instructions in this manual.

Assistance in using this manual.

Explanations: contact the dealer.

Request for additional copies of the manual: in case of loss or wear and tear, or in case one wants the manual in a different language, the customer should ask the dealer or manufacturer.

Pay attention to the warning signals.



<Danger>: indicates a situation that is potentially dangerous which, if not avoided, will cause death or serious damage.



<Warning>: indicates a situation that is potentially dangerous which, if not avoided, will cause death or serious damage.



<Caution>: indicates a situation that is potentially dangerous which, if not avoided, can cause minor to moderate damage, or it indicates to be careful about an unsafe procedure.

<Important>: indicates instructions that must be followed precisely in order to avoid damage to the product, process or environment.

<Note>: indicates supplementary information.

DESCRIPTION

FUNCTION OF USE

The machine, thanks to the wide range of types, performs all operations attributable to the roto-translation of tools in various working environments: agricultural open field, vineyards, orchards, vegetable gardens, parks, in all types of soil whatever its composition (sandy, medium-textured, clay) and its consistency (friable, hard, semi-plastic), at different depths.

The use of a technical construction concept aimed at the pursuit of high performance, reliability and durability, improves and optimizes the power/consumption ratio of the tractor thanks to the elasticity of the machine frame, the shape of the tools and many other original technical solutions.

PERFORMANCE

The machine is connected to the tractor by a three-point hitch that provides translatory motion and a universal joint connected to the PTO that provides rotary motion to the hoe shaft.

The working width is fixed and is determined by the choice of type of machine.

The working depth is adjustable.

The rear deflector, in addition to preventing dangerous throwing of stones and other foreign bodies, performs a clod-crushing function that is even more pronounced the more closed the deflector is.

PERFORMANCE LIMITS

- ❑ Maximum forward speed: 5 km/h.
- ❑ Speeds higher than indicated may compromise machine integrity, work quality and operator safety.
- ❑ Max power applicable to the gearbox: 11 to 26 Kw □ 5% to 540 rpm.
- ❑ Higher powers than indicated can irreparably damage the gearbox, especially if heavy-duty work is performed.
- ❑ Maximum working depth: 150 to 170 mm.

STANDARD FEATURES

- **Shear-bolt PTO-shaft cat. II.**
- **Front accident prevention protection.**

OPTIONS AND ACCESSORIES

- **Slip-clutch PTO-shaft.**
- **Kit Quick hitch.**

TECHNICAL FEATURES

FEATURES BY MODEL

Model	Type	Power		Working width		Weight		Working depth		Total width		Hoes n.	
		HP	KW	cm.	inch	Kg.	lbs.	cm.	inch	cm.	inch	Flange n.	Hoes n.
TANGO	85	12-22	9-16	85	34	125	275	16	6	103	40	4	16
	105	12-22	9-16	105	42	135	298	16	6	123	48	5	20
	125	12-22	9-16	125	50	145	319	16	6	144	56	6	24

SAFETY INFORMATION

GENERAL PRESCRIPTIONS

- Work only in daylight.
- The machine should not be used if there are other people, particularly children, or animals nearby.
- Wear long pants and sturdy shoes.
- Protective gear is an integral part of the machine: always work with protective gear.
- Pay attention to the ground surface: there should be no stones, sticks, wire, etc...
- Beware of use on a slope: proceed in the direction of maximum slope and never at an angle.
- Before leaving the driver's seat, turn off the engine and disconnect the engine-shaft transmission.
- Immediately check the machine in case foreign bodies are touched.
- Immediately check the machine in case of unusually strong vibrations.
- Promptly change defective parts.

SAFETY RESTRICTIONS

Children and persons unfamiliar with these instructions should not be allowed to use the machine.
Local prescriptions may restrict the use of the machine based on age.

SAFETY SIGNS ON THE MACHINE

This section reproduces and explains the safety signs on the machine.



1

2

3

4

5

6

1. Read the operator's manual
2. Disconnect the tractor control panel key before servicing or repairing.
3. Do not remove guards.
4. Keep a distance from the cardan shaft.
5. Keep away, possible throwing of objects.
6. Keep distance from knives.

Safety signs on the machine must remain clearly legible.

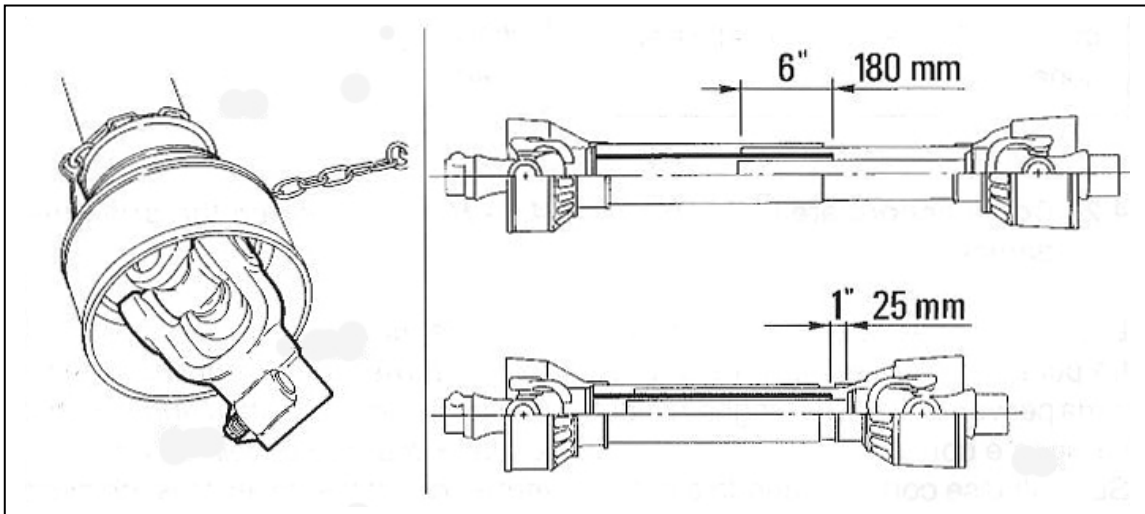
In case of damage, the warning labels must be replaced.

If machine parts bearing warning labels are replaced, they must be restored.

Provision of new warning labels and application procedure

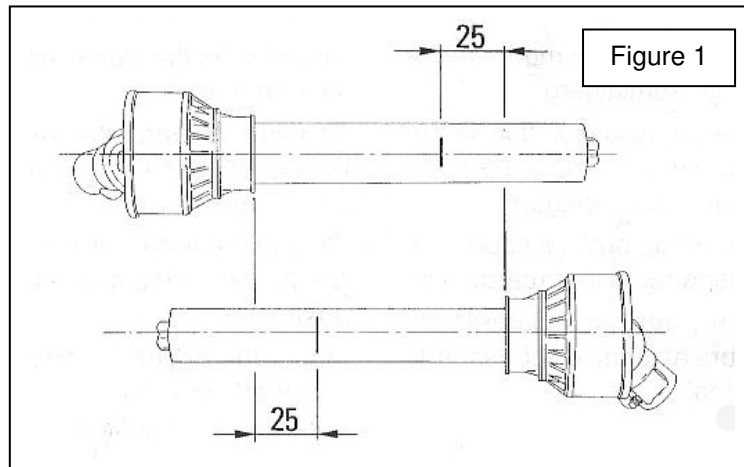
To obtain new warning labels, with instructions on their application, contact your dealer.

CARDAN SHAFT LENGTH CHECKING

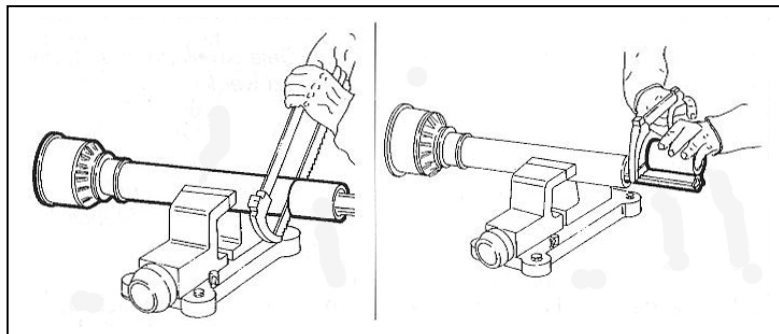


1. After having linked up the machine to the third point, please check it is placed in a horizontal and central position in relation to the tractor using the adjustment devices.
2. Place the PTO shaft between the tractor's PTO and the machine's PTO.
3. Check the length of the PTO shaft.
4. The length of the PTO shaft is correct if in the working position the minimum length of the coupling between the inner tube and the outer tube is not less than 180 mm and if, at the same time, in the condition of minimum extension, the PTO shaft still can make a movement of 25 mm.
5. If the minimum coupling length is less than 180 mm, it means that the PTO shaft is too short and you will need to replace it with a longer one.
6. If in condition of minimum extension the PTO can run less than 25 mm, it is too long and it must be shortened.
7. **WARNING:** shortening a PTO shaft is quite complicated. Always read the instructions contained in the following chapter before starting this delicate procedure not to damage the PTO shaft.

HOW TO SHORTEN THE CARDAN SHAFT



1. Move the machine as close as possible to the tractor, by using a hydraulic lift.
2. Once in this position, stop the hydraulic lift and switch the engine off.
3. Separate the two parts of the PTO shaft.
4. Insert the "female" PTO shaft (that is to say the larger-diameter tube) in the tractor's PTO.
5. Insert the "male" PTO shaft (that is to say the smaller-diameter tube) in the machine's PTO.
6. Place each part of the PTO shaft parallel to the other. Then, use a permanent marker to highlight the cutting point as shown in the figure "1".



1. Use a bow saw to cut the plastic tube on the marker line that you had already drawn on one of the PTO shaft parts.
2. Align the part of the tube that you have already cut at the bottom of and cut it.
3. Repeat the same operations on the second part of the PTO shaft.
4. Use a file to bevel the extremities of the tubes.
5. Clean and grease the two metallic tubes and insert the first part of the PTO shaft inside the other.
6. Set up the PTO shaft between the tractor and the machine and check its length another time.

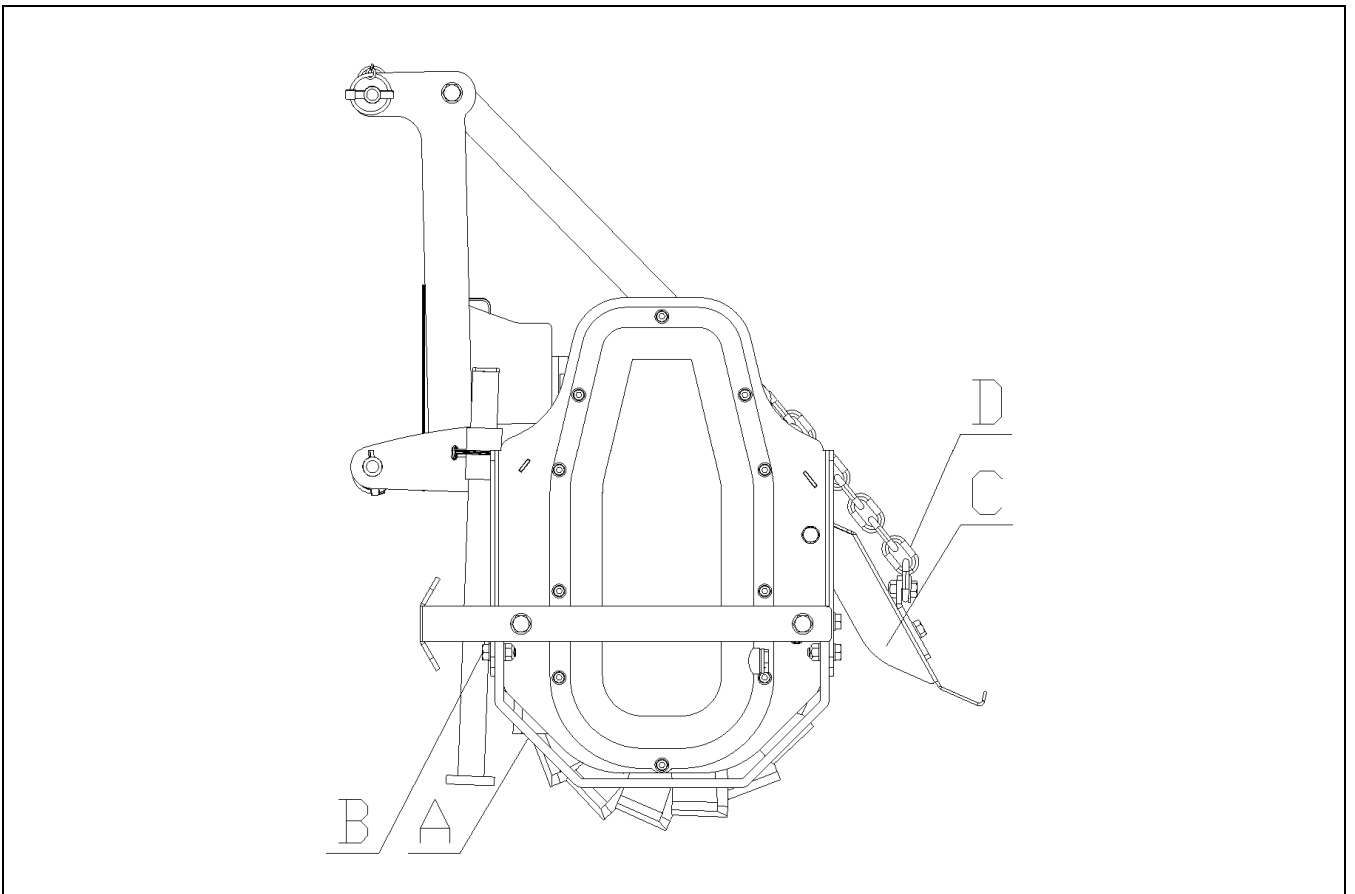
BEFORE STARTING WORK

(a) Adjust the working depth by acting as follows:

1. Unscrew the nuts "B" and remove the relevant screws from the housing.
2. Adjust the working depth by moving pad "A" upward to increase it and downward to decrease it.
3. Reinsert the screws and tighten the nuts "B".
4. Repeat the same operations on the other side of the machine, taking great care to adjust the two skids in the same way.

(b) Adjust the position of the rear deflector by doing the following:

1. Pull the free end of the chain "D" out of the stop seat.
2. Adjust the opening of the baffle "C" and holding it in place reinsert the chain into the stop seat.



a) Hitch the machine to the tractor by doing the following:

1. Slide out the pins from the two lower attachment points of the machine after removing the snap cotter pins.
2. Insert the lifting arms of the tractor into the lower attachment points of the machine, reinsert the pins and lock with the snap cotter pins.
3. Connect via the tie rod the third attachment point of the tractor to the third attachment point of the machine (vertex of the attachment triangle), reinsert the pin and lock with the snap cotter pin.

b) With the machine raised, move to the working area.

c) Connect the tractor's PTO to the machine's PTO shaft.

d) Check that the safety chains are secured to prevent rotation of the cardan guard.

TO START WORKING

(a) Make sure there is no person within a radius of 20 m all around the machine.

(b) Lower the machine until the hoes touch the ground.

(c) Engage the PTO and gradually reach the intended speed of rotation.

(d) Lower the machine completely and start working.

END OF WORK

a) Stop the tractor.

b) Raise the machine until the hoes are off the ground.

c) Disconnect the PTO.

d) Disconnect the PTO shaft from the tractor's PTO.

e) Raise the machine fully.

MAINTENANCE INSTRUCTIONS

Tab "A" shows the maintenance with the corresponding due dates to be performed on the machine. Failure to meet the scheduled deadlines will impair the proper operation of the machine and void the warranty.

TAB "A" SCHEDULED MAINTENANCE

	FIRST START	AFTER 10 H.	EVERY 30 H.	EVERY 500 H.	END OF SEASON	START WORKING	END OF WORK
MACHINE	Greasing		Greasing		Cleaning Greasing		Cleaning
GEARBOX	Oil level	Filling up	Oil level	Change oil			
TRANSMISSION BOX	Oil level	Change oil	Oil level	Change oil			
SCREWS		Tightening	Tightening				
HOES			Check		Check	Check	Check

1. GREASING

As specified in tab "A", grease points "B-C-D".

Greasing points are equipped with grease gun TYPE HYDRAULIC FORMAT "A" UNI 7663.
Use only LITHIUM-BASED MULTIFUNCTIONAL GREASE Type NLGI 2 for greasing.

2. OIL LEVEL – GEARBOX OIL REPLACING

As specified in tab "A" check the level or replace the oil in the gearbox.

Use only SAE 90 OIL for refilling.

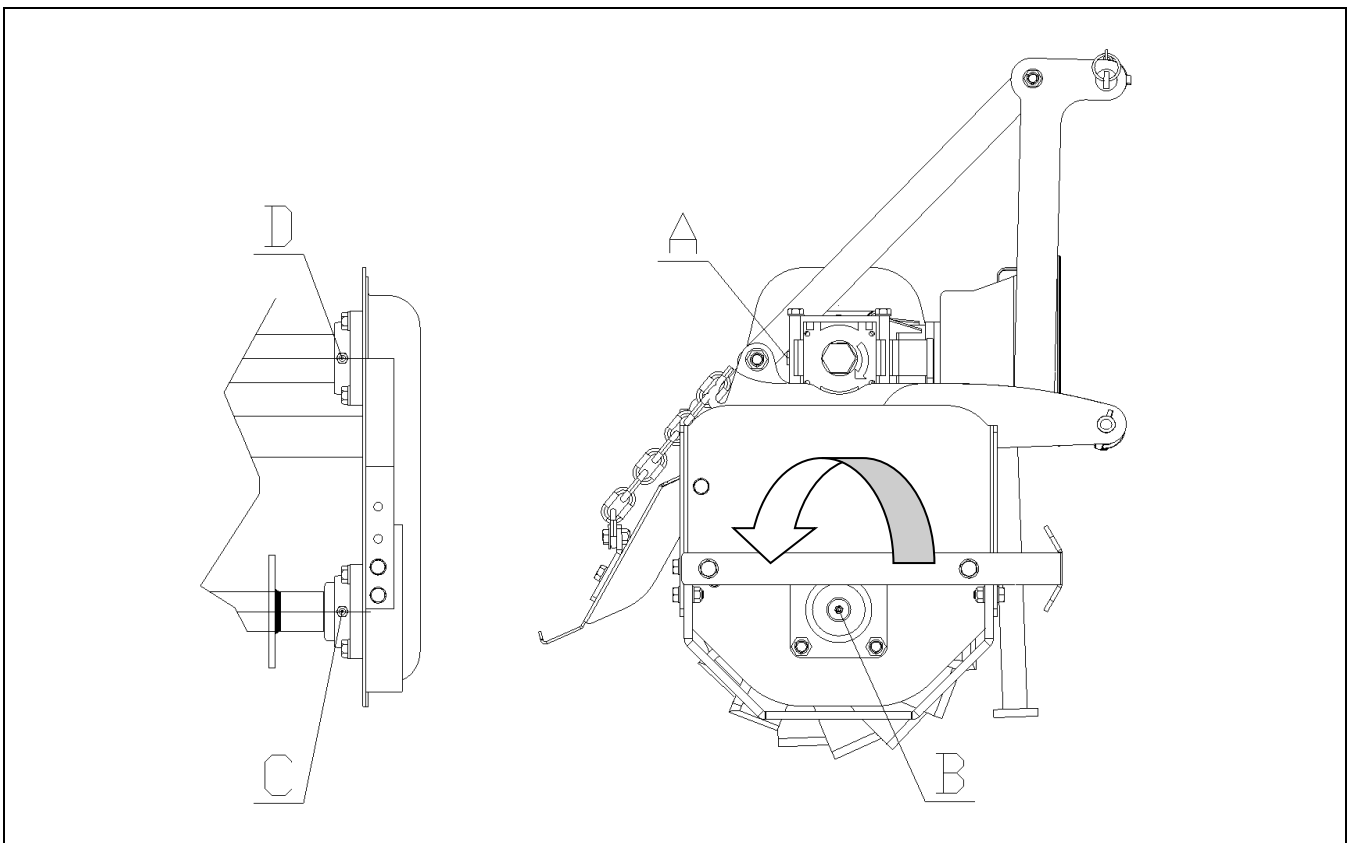
Bevel gearbox capacity: 1 L.

(a) To check the oil level in the gearbox, proceed as follows:

1. With the machine level, unscrew the level plug "A" and check that the oil touches the lower edge of the hole.
2. If the level is okay, screw cap "A" fully in.
3. If the level is low top up through cap "A".
4. When the level has been reached, screw cap "A" all the way down.

b) To replace the oil in the gearbox, proceed as follows:

1. Unscrew cap "A".
2. Turn the machine 90° in the direction indicated by the arrow and drain all the oil into an appropriate container.
3. Bring the machine back to level.
4. Introduce the new oil from plug "A".
5. When the level is reached and the oil touches the lower edge of hole "A", screw cap "A" fully in.



3. OIL LEVEL – TRANSMISSION BOX OIL REPLACEMENT

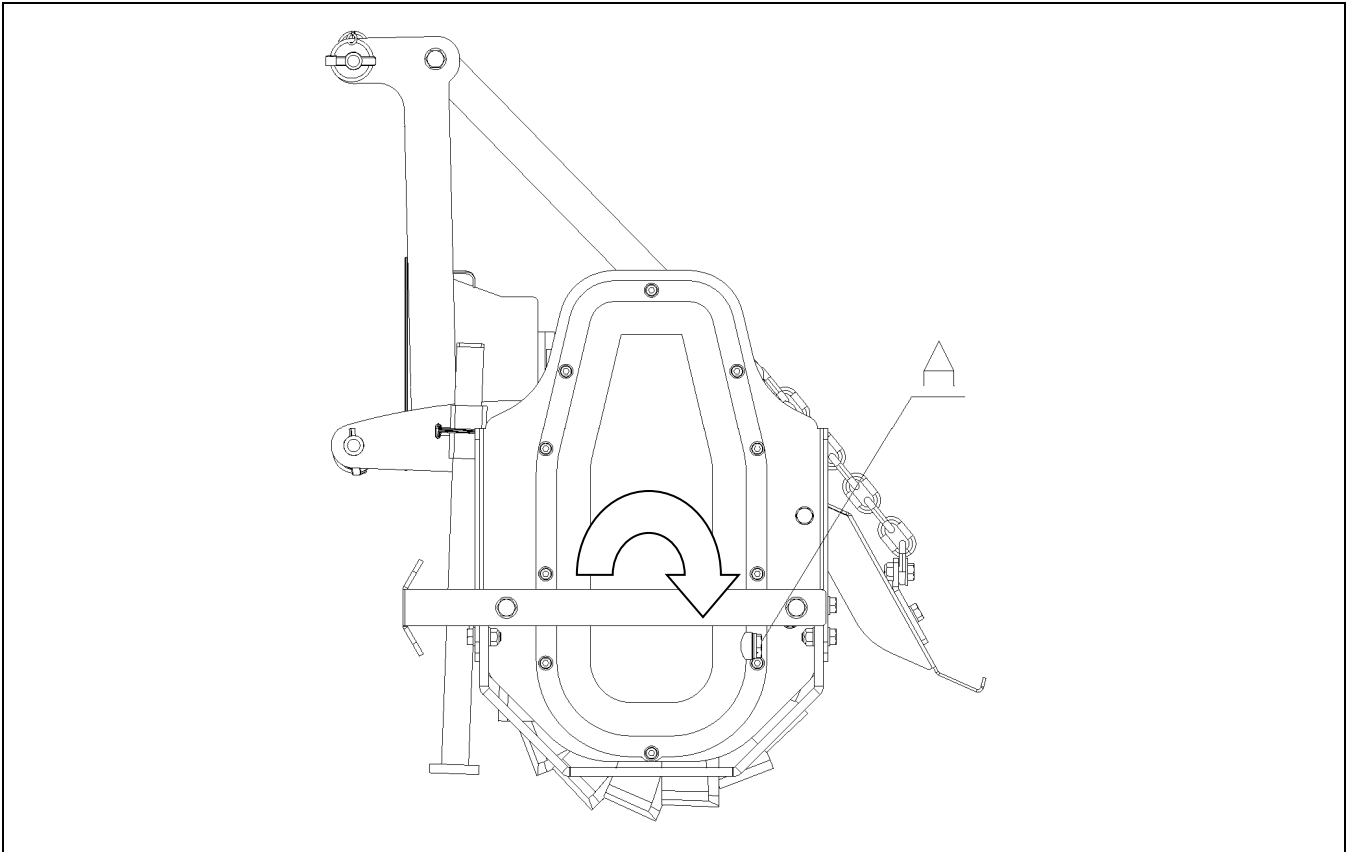
As specified in sheet "A" check the level or replace the oil in the transmission box.
Use only SAE 90 OIL for topping up.
Transmission Box capacity: 2 L .

a) To check the oil level in the Transmission Box, proceed as follows:

1. With the machine level, unscrew the level plug "A" and check that the oil touches the lower edge of the hole.
2. If the level is okay, screw cap "A" back on tightly.
3. If the level is low unscrew cap "A" and top up.
4. When the level is reached, screw cap "A" back on tightly.

b) To replace the oil in the Transmission Box, proceed as follows:

1. Unscrew cap "A".
2. Turn the machine 90° in the direction indicated by the arrow and drain all the oil into an appropriate container.
3. Bring the machine back to level.
4. Introduce the new oil from plug "A".
5. When the level has been reached and the oil touches the lower edge of hole "a", screw cap "A" back on tightly".

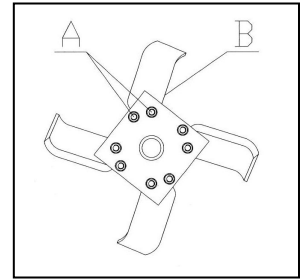


4. HOES REPLACEMENT

a) To replace the hoes, proceed as follows:

1. Unscrew the two nuts "A" holding the fixing screws of the hoe to be replaced.
2. Slide the two screws out of the holes and remove hoe "B".
3. Position the new hoe using the new screws provided.
4. Lock the nuts "A" with the pneumatic wrench.
5. Repeat these steps for all hoes to be replaced.

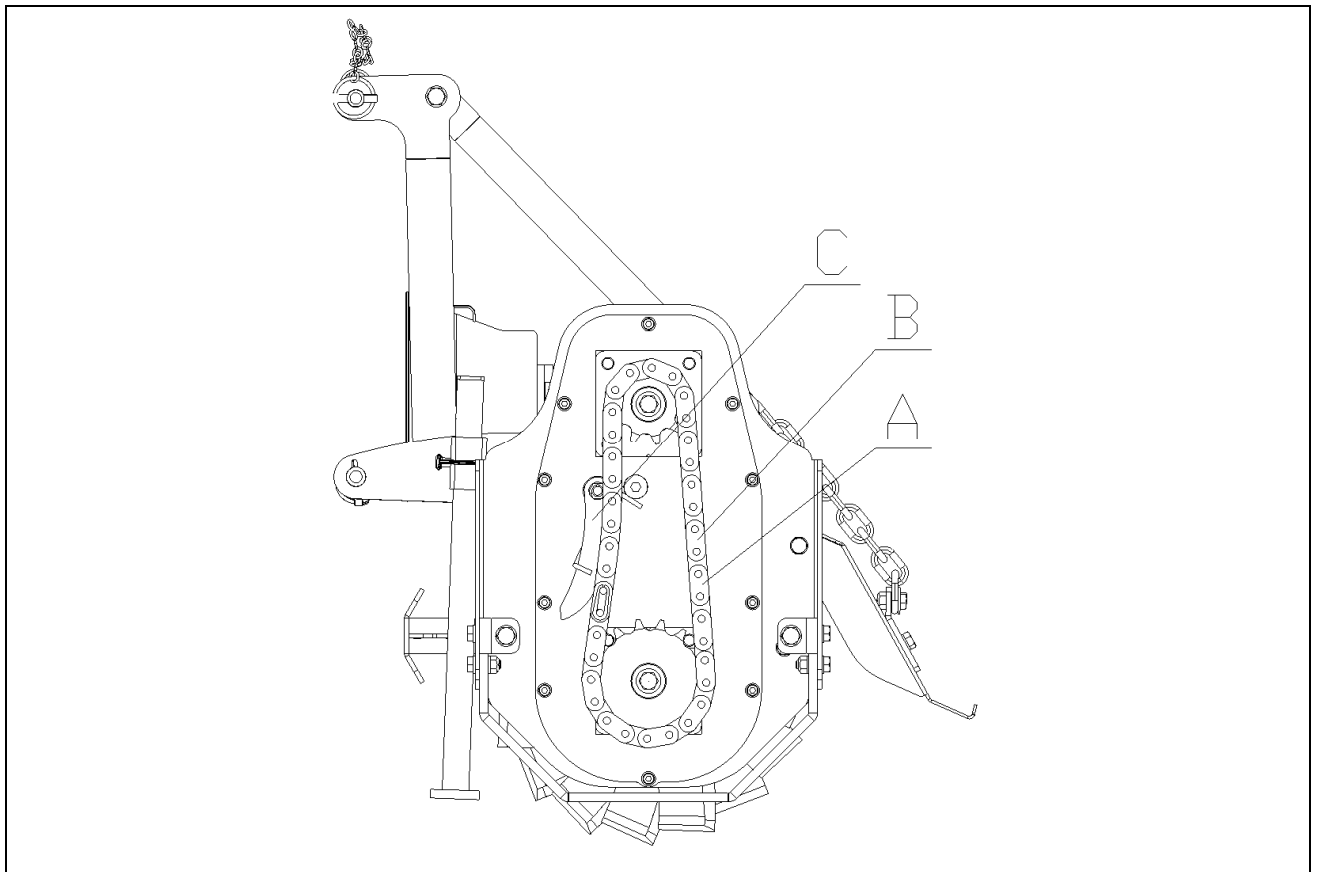
CAUTION: 2 or 3 right and 2 or 3 left hoes are mounted on each flange.



5. TRANSMISSION CHAIN REPLACEMENT

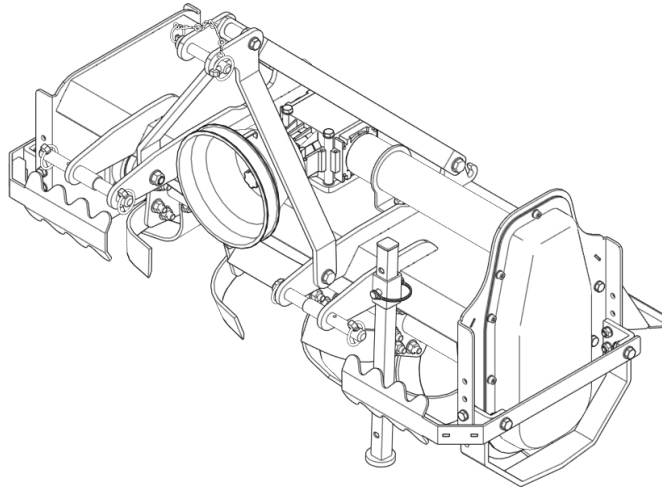
a) To replace the chain, proceed as follows:

1. Empty the crankcase of oil by performing the first three steps explained in "b" chapter "3".
2. Remove the crankcase by unscrewing the 10 fixing screws.
3. Keeping the chain tensioner "C" undone, remove the chain "B" after extracting the connecting link "A".
4. Install the new chain making sure to position the safety spring of the connecting link well.
5. Reassemble the casing using the new gasket supplied with the chain.
6. Put new oil into the crankcase by performing the last two steps shown in step "b" of chapter "3".



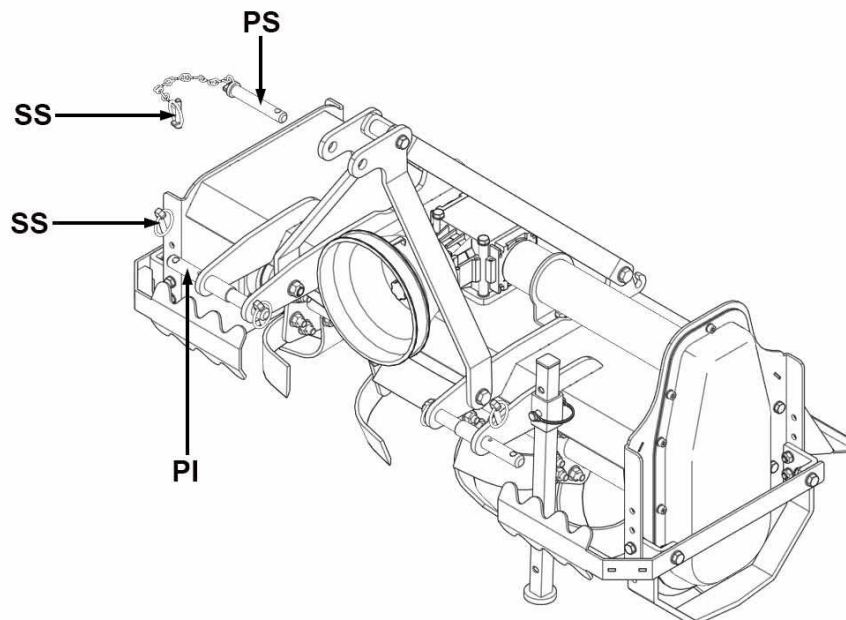
6. QUICK HITCH KIT ASSEMBLING

The machine is shipped with the standard hitch suitable for tractors with category I 3-point hydraulic lift, a "quick hitch kit" is supplied with the machine to make the hitch suitable for tractors equipped with a "Quick Attaching Coupler".

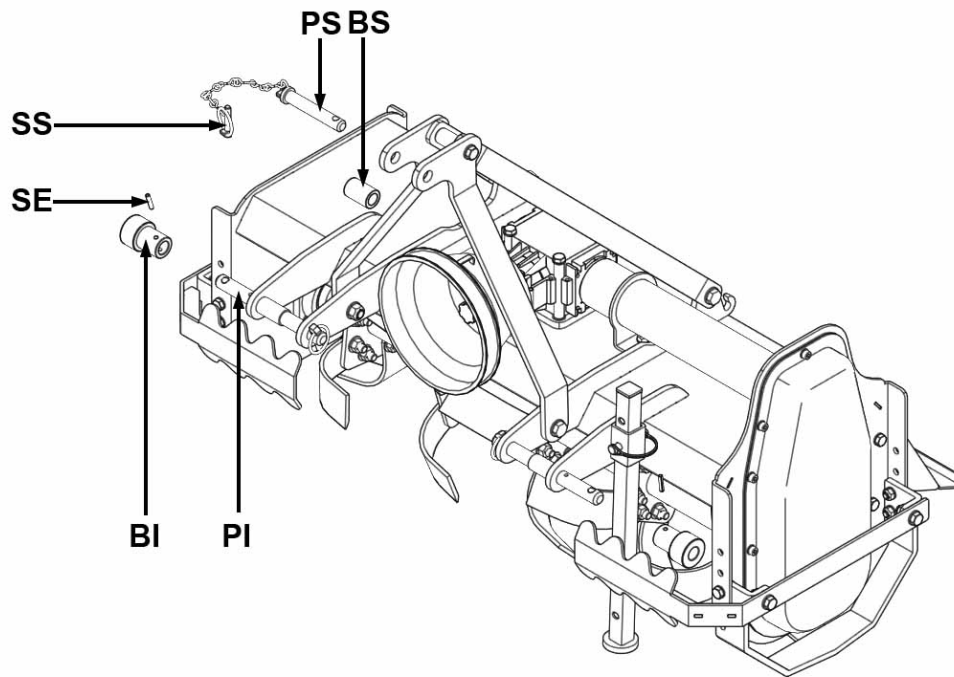


Standard Attachment

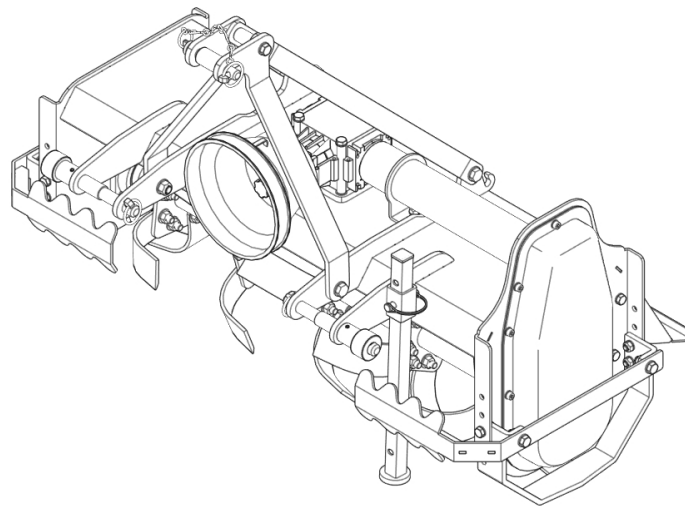
To mount the quick hitch kit, proceed as follows:



1. Remove the SS safety pin from the lower "PI" pins,
2. Remove the upper pin "PS" from the third point after removing the safety pin "SS".



1. Insert the bushing "BI" onto the lower right pin "PI" and then lock it with the spring pin "SE".
2. Repeat step 1 with the left lower pin "PI".
3. Insert the bushing "BS" in the III° point then insert the pin "PS" and lock it with the safety pin "SS".



Quick Hitch Attack

TROUBLESHOOTING

PROBLEM	CAUSE AND SOLUTION
Insufficient working depth	<ul style="list-style-type: none"> -Decrease the forward speed -Increase the working depth setting (slides) -Broken hoes - Replace -Unbalanced hoes - Balance
Hoes don't penetrate. Tiller bounces on the ground and vibrates	<ul style="list-style-type: none"> -Broken or damaged hoes - Replace -Check mounting of the hoes -Foreign objects between hoes - Clean -Soil too dry and hard - Decrease the forward speed
Rotor blockage, obstruction	<ul style="list-style-type: none"> -Soil too wet - Reduce depth of work -Increase number of revolutions of rotor
Excessive tilling of the soil	<ul style="list-style-type: none"> -Increase forward speed -Raise the rear baffle -Reduce number of revolutions of rotor
Poor tilling of the soil	<ul style="list-style-type: none"> -Decrease forward speed -Lower the rear baffle -Increase number of revolutions of rotor

TRANSPORT

Except when working, moving the implement should only take place when the implement is not running and the transmission is disconnected.

<Important>: keep speed low avoiding holes and rough ground.

<Important>: Before transporting the implement always make sure that the safety hooks are in position.

<Note when on the road, obey existing traffic laws. Place warning signal signs on the rear end corner. Respect any and all local laws.

STORAGE

Store the implement in a dry place that isn't dusty.

INFORMATION ON DEMOLITION



At the end of its working life, the implement must be demolished and that can only be done by an authorized authority, in accordance with the national environmental laws in force. Therefore it is necessary to get information from the qualified local authorities on the procedure to follow. The implement is mainly composed of iron materials and paints.

WARRANTY

The implement is covered by the manufacturer warranty for a period of 24 months.

The warranty is not void if:

- a) The maintenance work has not been done correctly.
- b) The implement has been used for work it was not designed for.
- c) The implement has been transformed or modified without the manufacturer's written authorization.

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