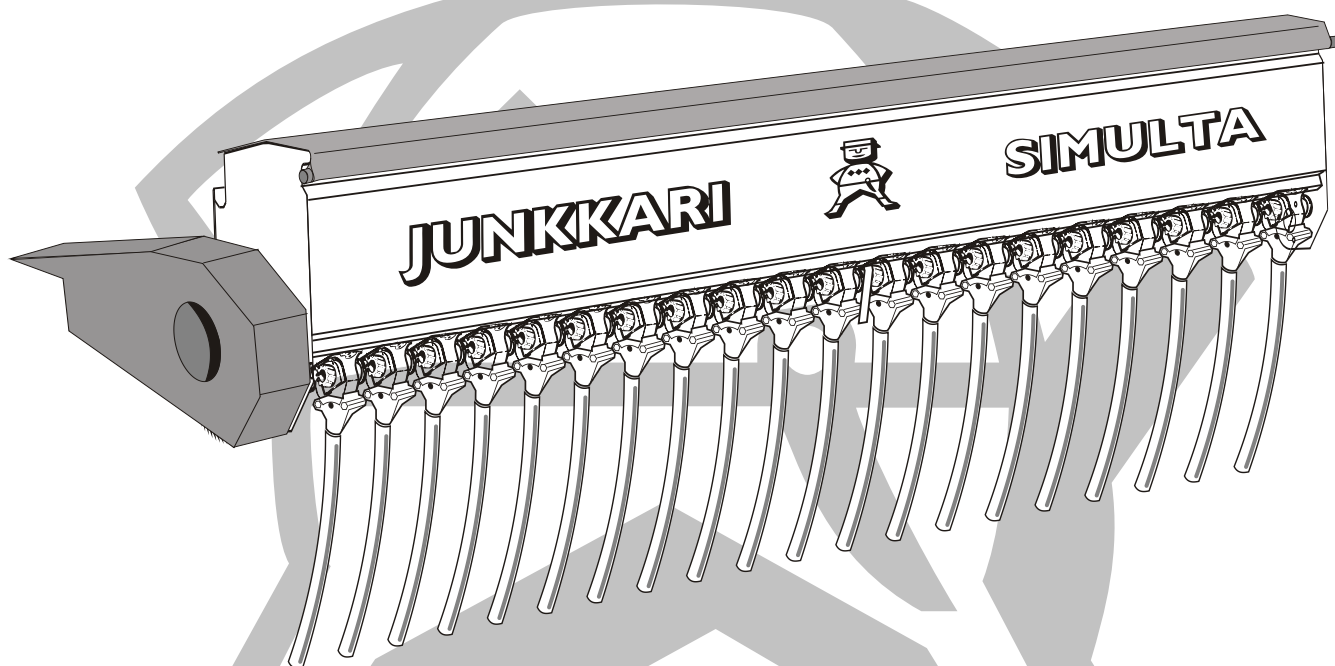


# JUNKKARI

## SMALL SEED BOX

2500 S  
3000 S  
4000 S



### ASSEMBLY AND OWNER'S MANUAL

SPSLITEN



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# ENGLISH



# DEAR CUSTOMER

We thank You for the trust you have shown and wish You success in Your work.

Please familiarise yourself with this manual, because perfect knowledge of the machine, right adjustments, and careful maintenance guarantee the safety of the operator and the continuous operation of the machine on busy workdays.

It is important that every section in this manual is understood and that the instructions are followed. In unclear cases, please contact the vendor of the machine.

We hope that after you have familiarised yourself with the manual, you will return the signed guarantee certificate to the factory.



## WARNING!

This manual is intended as an addition to the Junkkari Simulta-manual.

The instructions for Junkkari Simulta:

- 4. SAFETY INSTRUCTIONS
- 6.3 LIMITATIONS OF USE AND FORBIDDEN USES
- 8. TRANSPORT, HANDLING, AND STORAGE OF THE MACHINE
- 9.1 PUTTING THE MACHINE IN WORKING ORDER
- 9.5 DISPOSING OF THE PACKAGING
- 13 LUBRICATION DIAGRAM
- 14 MAINTENANCE
- 16 STORAGE
- 17 TROUBLESHOOTING CHART
- 17.1 FAULTS
- 18 ENDING THE USE OF THE PRODUCT
- 19 TERMS OF GUARANTEE
- 20 AREAS OF RESPONSIBILITY

are fully applicable to the SMALL SEED BOX.

Before installation and use, familiarise yourself with the corresponding instructions for the seed and fertilizer drill.

## TECHNICAL SPECIFICATIONS

	2500 S	3000 S	4000 S
PRODUCT NUMBER	124250	144400	144410
WEIGHT/kg	79	93	120
CAPACITY/l	240	290	384
PERFORMING THE CALIBRATION FOR TROUGHS			
	YES	YES	YES
MIXER SHAFT	YES	YES	YES
GUIDE CONES AT THE BOTTOM	YES	YES	YES

# GENERAL INFORMATION

## PURPOSE OF USE

The small seed sowing device is used for the sowing of various small seeds and small seed mixes.

When the device is connected with the Simulta-seed and fertilizer drill, the small seeds can be sown at the same time as the fertilizer and the grain. The device is compatible with the 1987 model and the newer H-, T-, and ST-models.

## APPLICATIONS

The small seed sowing device can be altered for start fertilization with the additional parts from the package. The start fertilizer kit is compatible with the -87 model and the newer H-, T-, and ST-models. More accurate instructions about use and installation can be found later in this booklet.

## OPERATING PRINCIPLE

The Simulta small seed sowing device gets its power through chains from the drive unit of the seed drill. The device has the same accurate feeder mechanism as the Simulta seed and fertilizer drill. The feed amount is adjusted with the set wheel located at the right end of the device. The mixer in the device's tank mixes the seeds to prevent sorting. The mixer can be turned off for start fertilizer sowing. The tank has fluted feed cups at the bottom, which enable the complete emptying of the tank. Unwanted seed shifting caused by the quick turns of the seed and fertilizer drill is also reduced.

A calibration can be performed into the calibration troughs of the seed drill by dropping the two-part hopper down, so that the stopper bars of the hopper shaft function as the supports for the trough. The hopper shafts can be removed conveniently, making

## TAKING THE MACHINE INTO USE

### PACKAGE

The package includes attachment parts for the -87 and newer seed and fertilizer drill models.

-Small seed sowing device	1 pc		
-Hoppers	1 pc		
-Hopper shaft	2 pcs		
-Hinging and support bracket	4+4 pcs		
-Fastening thread	56(2500)	64(3000)	80(4000)
-Feeder tube	20	24	32
-Attachment parts (parts 1 and 2)	4 pcs		
-Bolt 6*30+lug	4 pcs		
-Linch pin	8 pcs		
-Start equipment	1 pc		
-Drive chainwheel	1 pc		
-Drilling guide	1 pc		
-Attachment part plastic	20(2500)	24(3000)	32(4000)
-Barrel starscrew 4.8*13	40	48	62
-Hole saw+spindle	1 pc		
-Chain 34 rolls+connector+reducer	1 pc		
-Drill bit 3.5mm	1 pc		

-Adaptor equipment for models T and H	
-87-97	1 pc
-Fastening profile	1+1 pcs (right and left)
-Bolt M8*25+lug	4 pcs
-Washer M8	8 pcs
-Fastening materials	1 pc
-Bolt M10*25+lug	4 pcs
-Chains 146+22	
-Joint	3 pcs
-Reducer	1 pc
-Chain cover+wing screws	
-Chain tensioner Assembled+spring	1 pc (ST-model)
-Chain tensioner frame	1 pc (T-and H-models)
-Hexagon screw M8*35	1 pc
-Lock bolt M10*45+lug	1 pc
-Body washer M10	1 pc
-Manual	1 pc

## INSTALLATION

At least two persons are needed for the installation or a suitable crane must be used.

The Simulta small seed sowing device is installed by aligning the four holes at the ends of the device with the corresponding holes at the back of the seed and fertilizer drill and is then attached with the bolts and washers from the package.

The chains from the package are assembled in the correct length from pieces according to the chart below.

Machine	chainp.	Chain length
Simulta ST	Z 37	168 (=146+22)
	Z 76	202 (=146+22+34)
Simulta T-98	Z 37	124 (is shortened from chain 146)
	Z 76	146 (= 124+22)
Simulta H and T -87 -97	Z 37	110 (is shortened from chain 146)
	Z 76	132 (=110+22)

A reducer joint is used if needed.

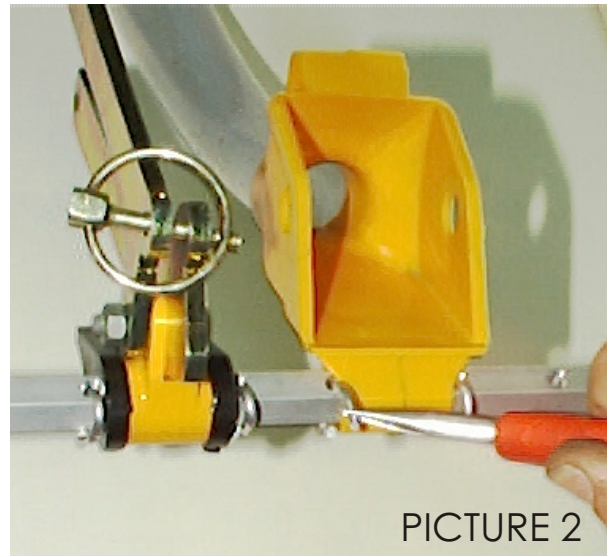
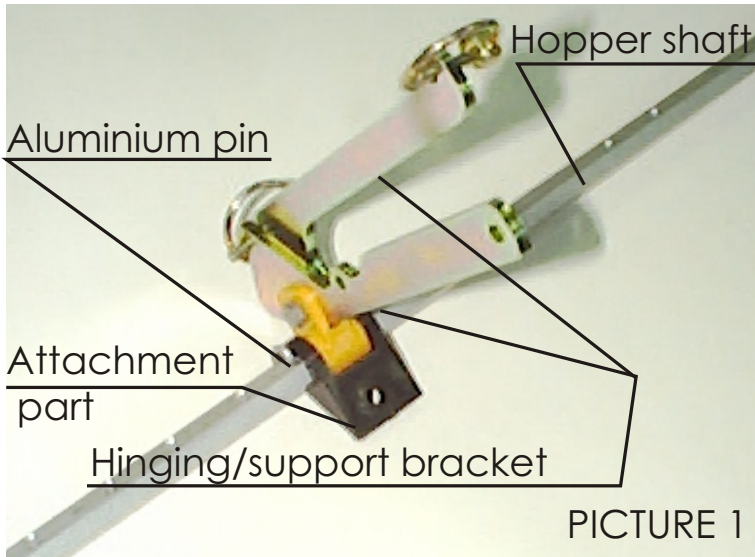
### ASSEMBLING THE HOPPERS

To make assembly easier, the hinging/support bracket and attachment part have already been attached to the hopper shafts like in picture 1 on the next page.

It is recommended that you start assembly from the shorter end of the hopper shaft, as shown later, after which the hopper shaft can be directly tried out in its place and correct assembly can be made sure of.

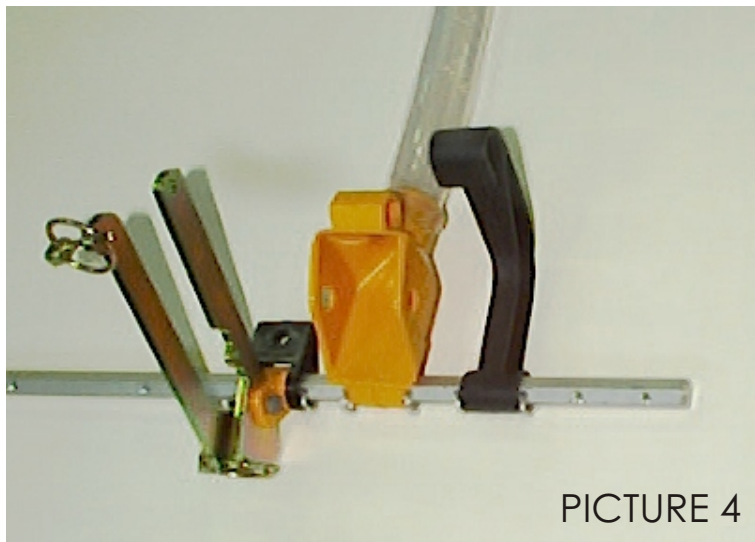
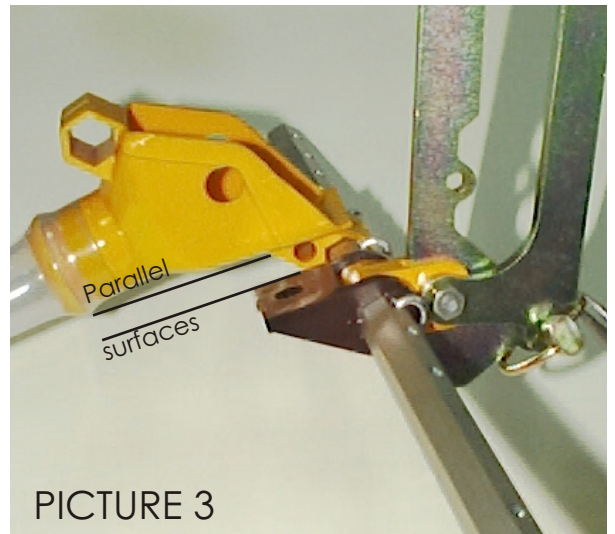
The hoppers are installed as shown. It is important that the hoppers are in the right position in regard to the attachment part. The right position can best be determined by comparing the hoppers back wall to the straight surface of the attachment part and making sure these are parallel. The hoppers are attached with aluminium pins which are bent according to the picture.



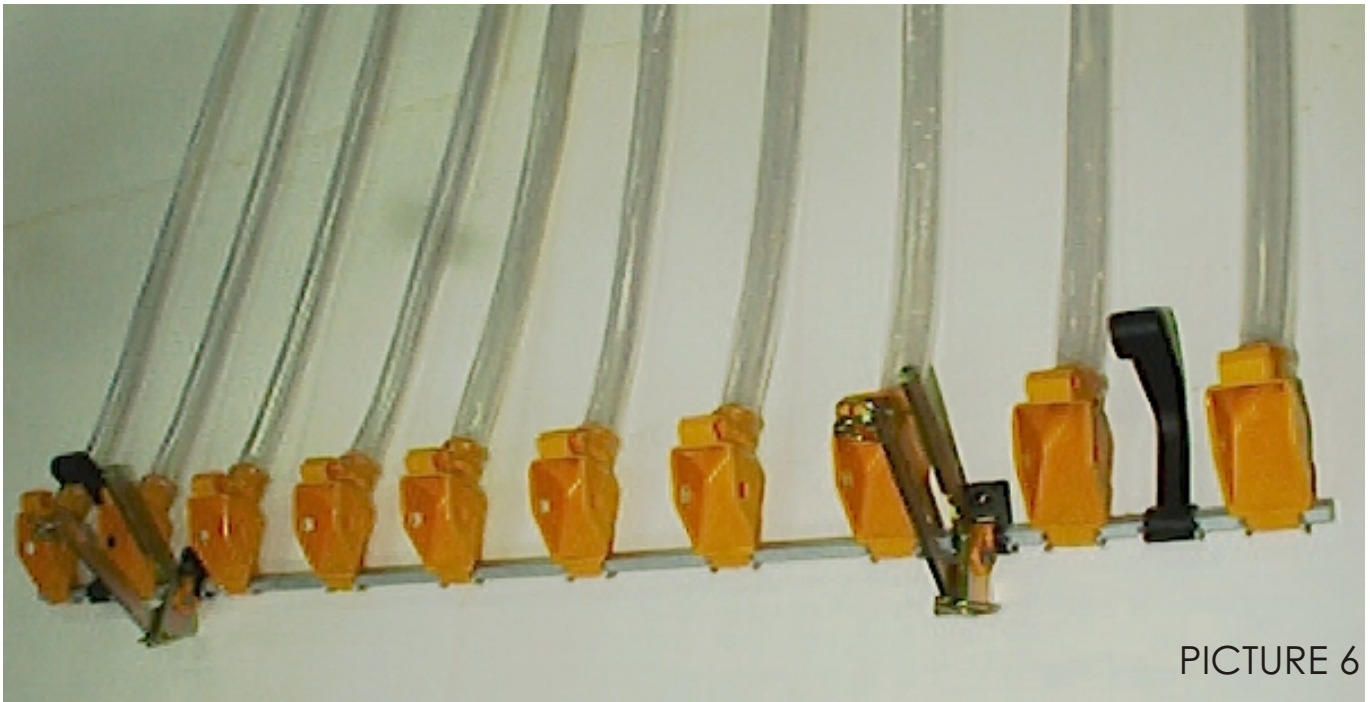


After this, the supporter and the outer hopper of the hopper shaft are installed as in the picture below. The hopper shaft can then be fitted into its place.

The hopper shaft can be assembled beforehand by starting from the end that is already assembled.



The finished hopper shaft is pictured on the next page

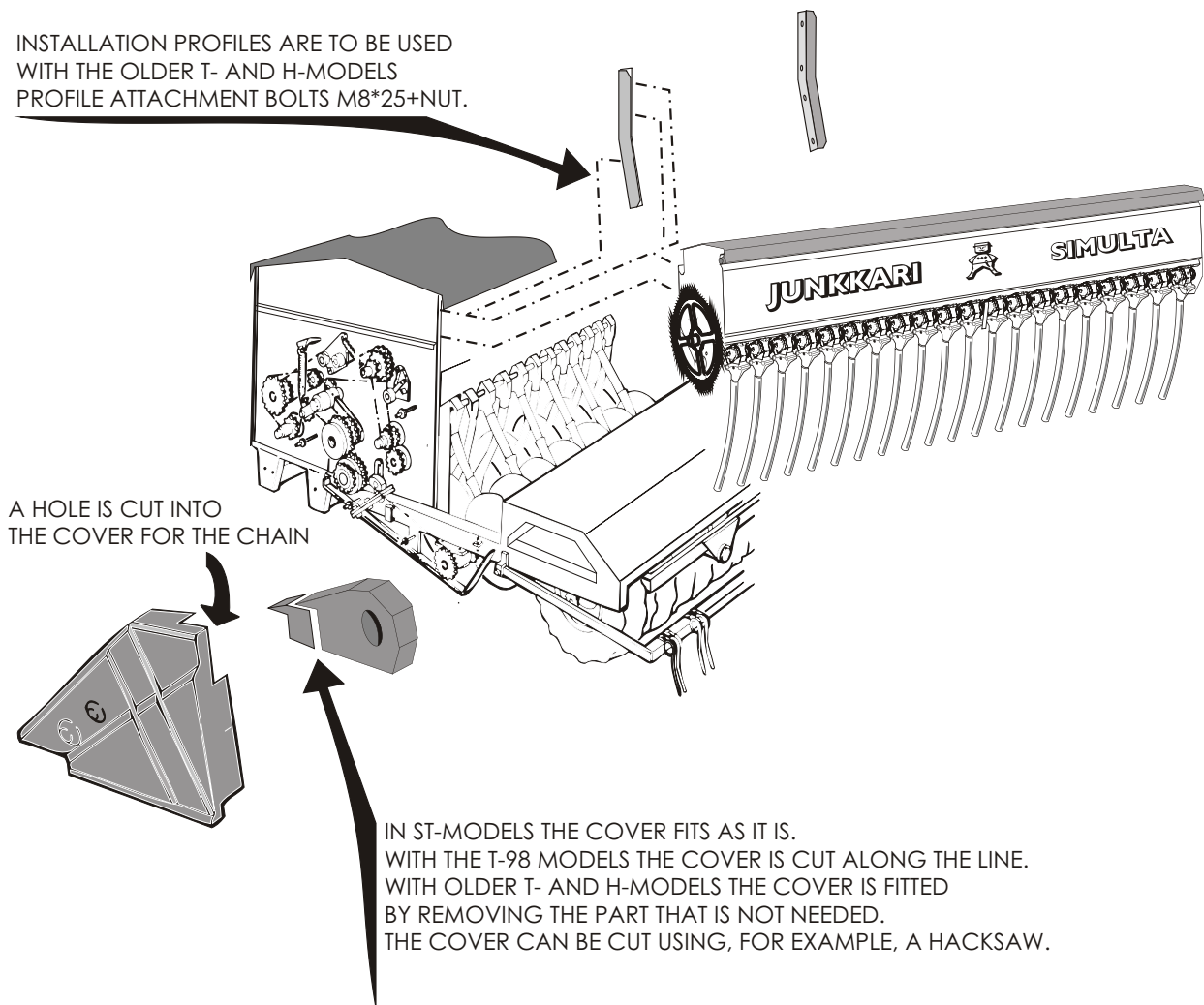


PICTURE 6

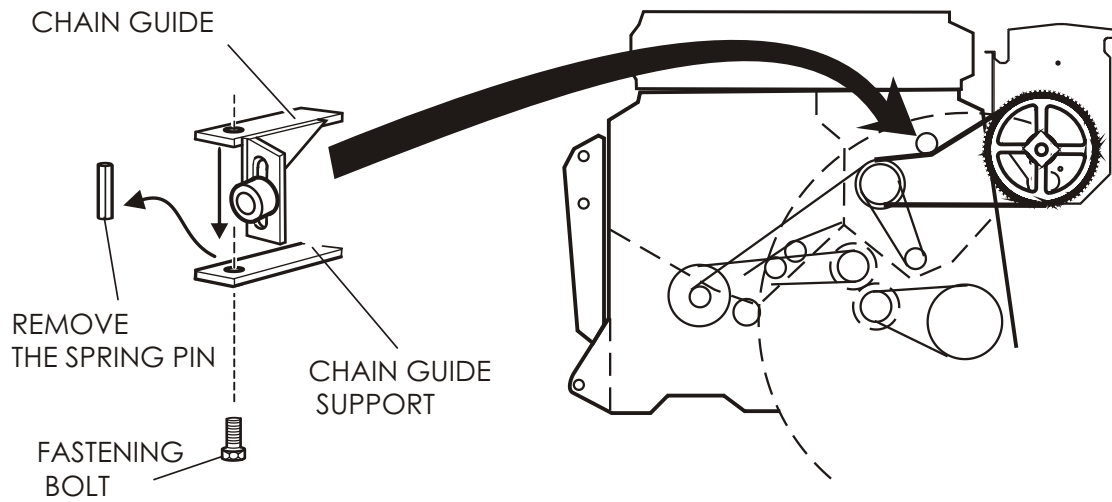
### INSTALLATION TO THE MACHINE

The box is attached to the back of the machine using the bolts and lugs from the package. The chains are shortened to fit according to the instructions on the previous page. The covers are fitted according to the picture below.

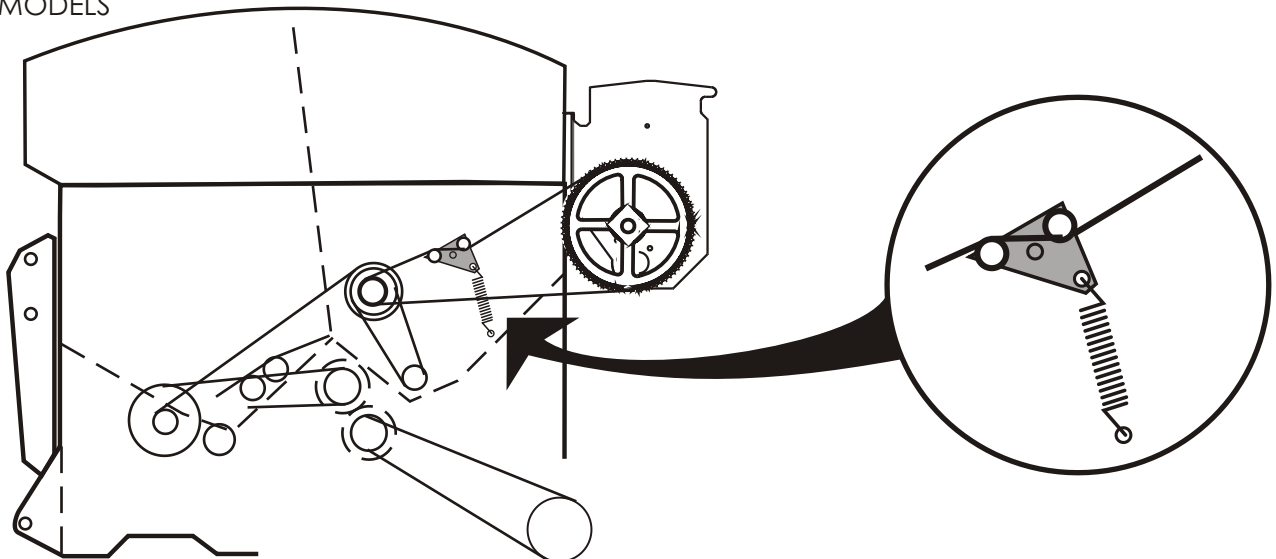
INSTALLATION PROFILES ARE TO BE USED WITH THE OLDER T- AND H-MODELS PROFILE ATTACHMENT BOLTS M8\*25+NUT.



## ATTACHING THE CHAIN GUIDE MODELS H AND T



## ATTACHING THE CHAIN GUIDE ST-MODELS



## INSTALLING THE FEEDER TUBES

The feeder tubes can be installed in two different ways. The installation method depends on the application, which can be either normal small seed sowing or start fertilization. In small seed sowing the tubes are directed to feed the seeds on to the back most coulters, and in start fertilization the fertilizer is directed into the seed chambers.

If the device is used for start fertilization, it is advisable to install the attachment parts of the feeder tube to the feeder cases before installing the actual box. Installing instructions are on the next page.

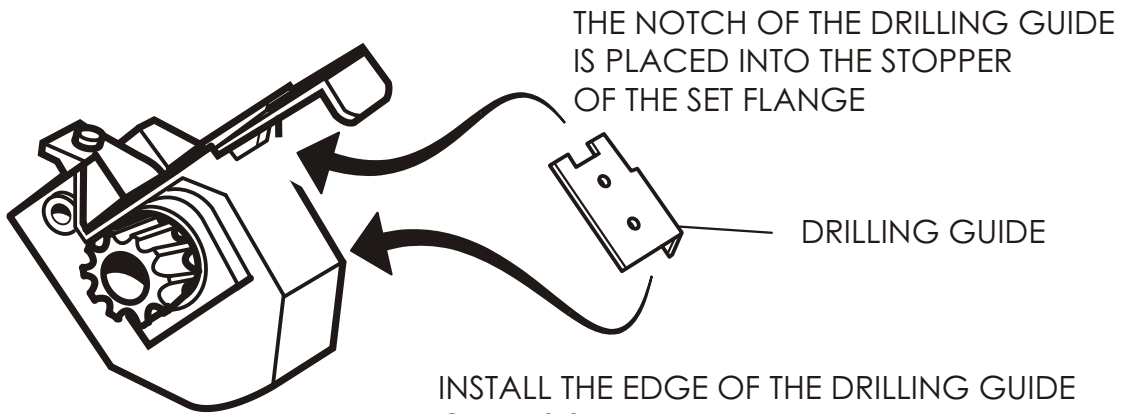
The lengths of the feeder tubes depend on the machine on to which the small seed device is attached. The tubes are shortened to the correct length if necessary.

## INSTALLING THE ATTACHMENT PARTS FOR THE FEEDER TUBES

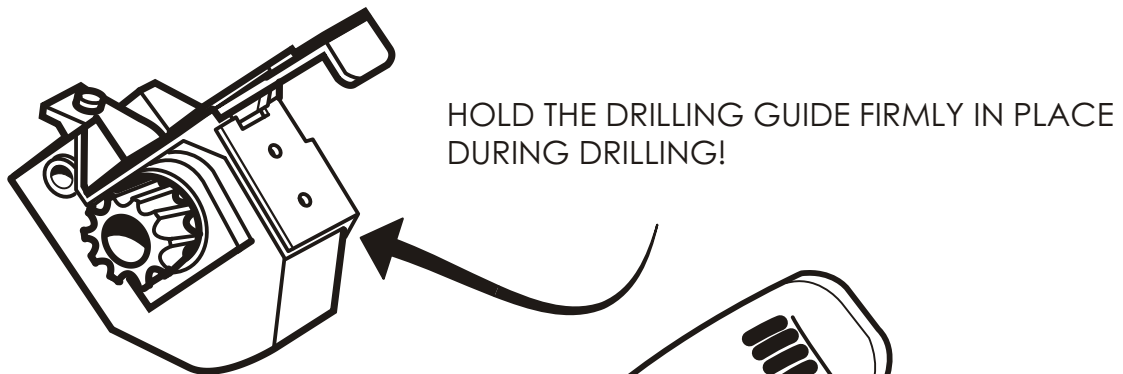
Begin by drilling holes into the feeding devices on the seed side as shown on the next pages. Attach the plastic attachment parts to the holes. Repeat this with all the feeding devices on the seed side.

Drill the holes carefully, making sure that the feeding devices do not get damaged!

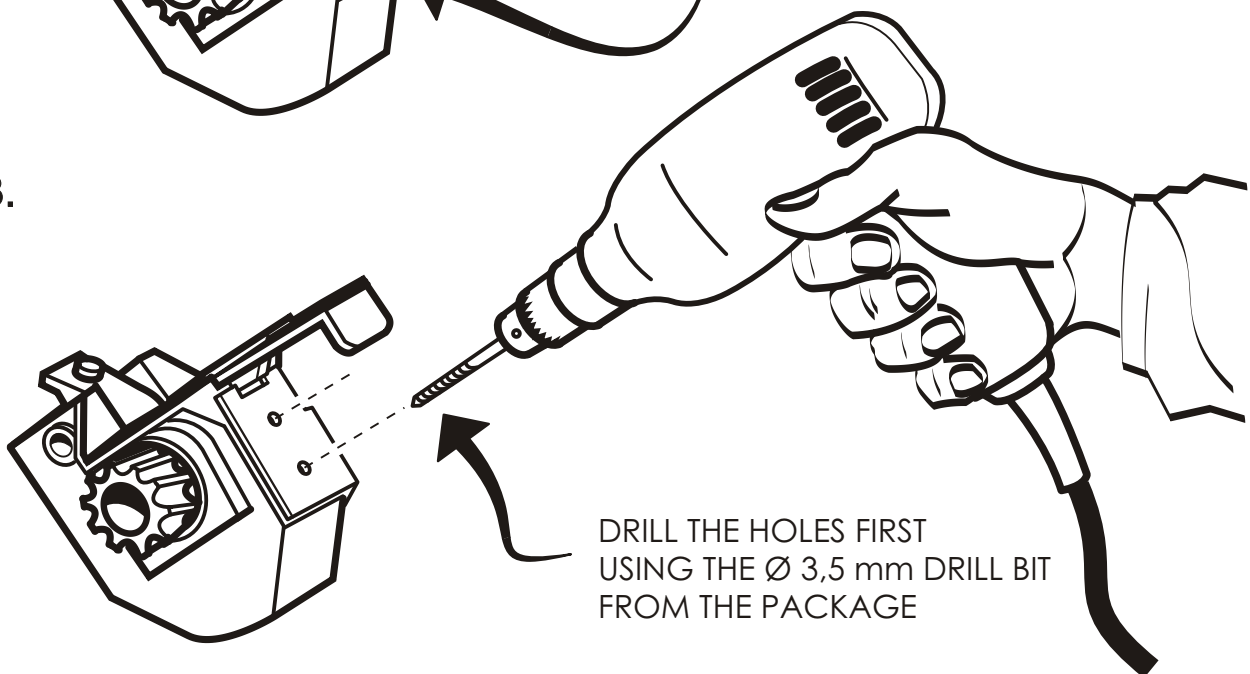
1.



2.



3.



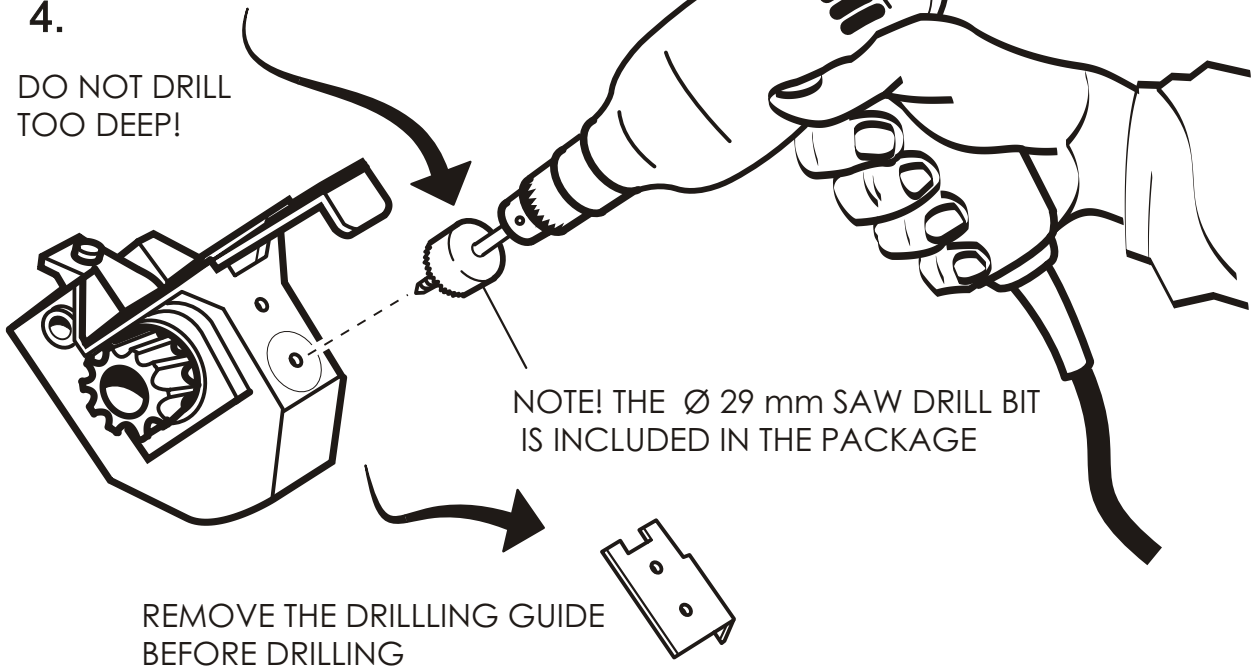
THERE IS A RISK OF DAMAGING THE FEEDER RIFLE DURING DRILLING!  
MAKE SURE THAT THE DRILLING DEPTH REMAINS SHALLOW ENOUGH



4.

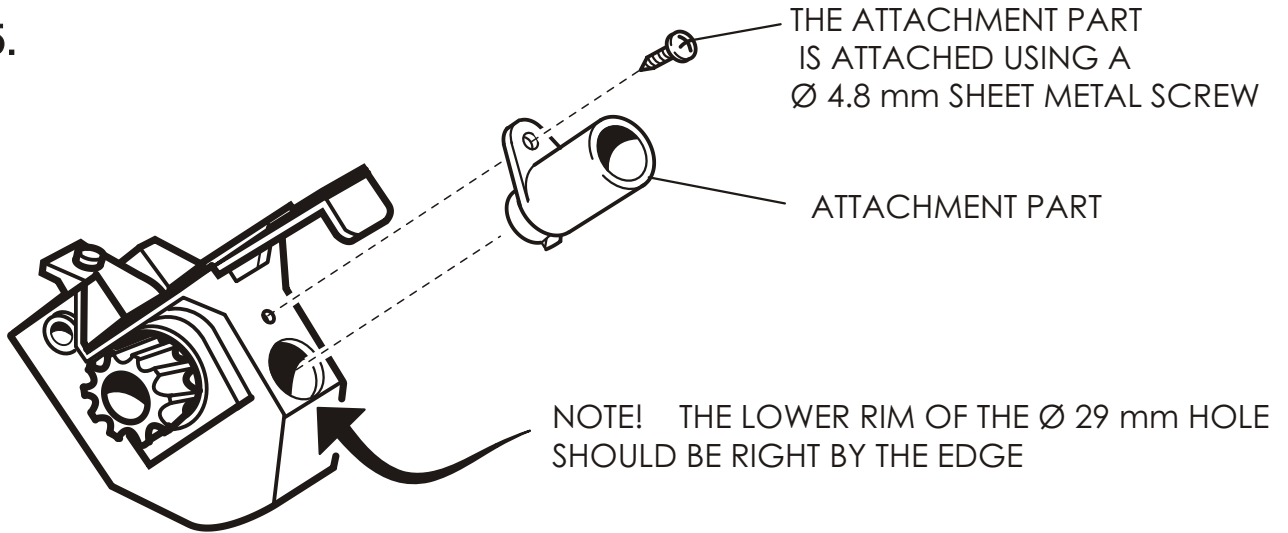
DO NOT DRILL TOO DEEP!

DRILL A Ø 29 mm HOLE INTO THE LOWER HOLE USING THE SAW DRILL BIT

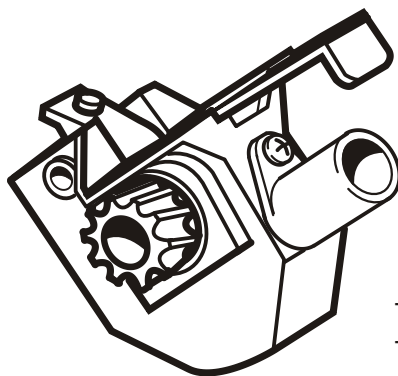


5.

THE ATTACHMENT PART IS ATTACHED USING A Ø 4.8 mm SHEET METAL SCREW



6.



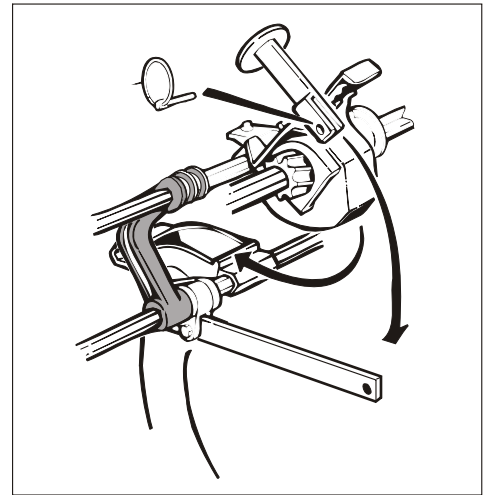
THE ATTACHMENT PART INSTALLED TO THE FEEDING DEVICE

## INSTALLING THE FEEDER TUBES

The feeding tubes are attached to the bottom flap shaft using the attachment hooks of the tubes as in the picture on the right. The tubes are positioned according to the application as in the following pictures.

### Tube length

The lengths of the feeder tubes depend on the machine onto which the small seed device is attached. The tubes are shortened to the correct length if necessary.



Hopper position for small seed sowing.



Hopper position for small seed calibration.

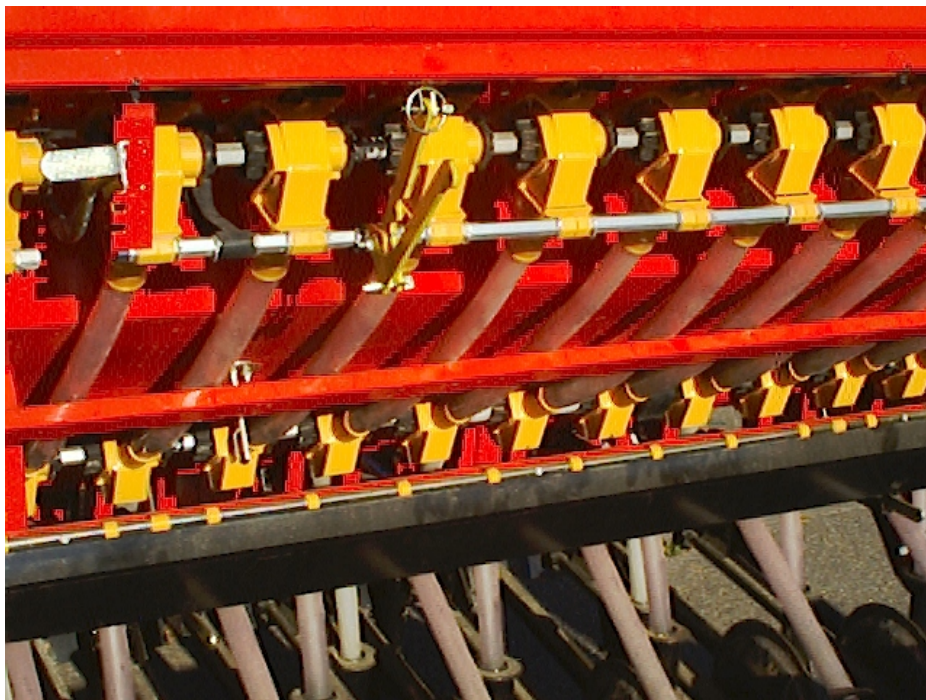




Hopper position for start fertilization.



Hopper position for start fertilizer calibration.



#### DECK COVER

In the new Simulta 2500-, 3000T-, 3000-, and 4000ST-models the deck cover of the machine also covers the small seed box. In these cases the cover of the small seed box is covered by the deck cover of the machine. The rubber fasteners at the back of the machine's cover are to be moved to the holes at the back of the tarpaulin and the fastening tacks at the back of the machine are to be moved to the tapped holes of the small seed box. The tacks go on the insides of the box end plates.





# CHOOSING SOWING AMOUNTS AND CALIBRATION

(SMALL SEED SOWING CHAINWHEEL Z37)

The sowing amount is adjusted by turning the set wheel on the right end plate of the machine. The scales, from which the values are chosen, are the main scale on the detent of the set wheel and the circular scale on the set wheel. The position of the set wheel to the main scale is indicated by a groove in the edge of the set wheel. The sowing chart gives guideline values for the settings of the feeding devices. On the sowing chart, the vertical column indicates the sowing amount per hectare, while the horizontal scale indicates the settings of the feeding devices. The lower, larger numbers indicate the values on the main scale and the higher, smaller numbers indicate the values on the circular scale.

The sowing chart can be found both on the cover of the machine and in this leaflet. The appropriate line for the seeds that are to be sown is chosen from the lines on the sowing chart. The point in which the desired sowing amount and the chosen line intersect indicates the settings of the feeding devices on the horizontal scale.

For example, if sowing timothy 32 kg/hectare, the setting is 3.5. The set wheel has to be turned so that the groove points to 3. The set wheel is turned further, so that notch no. 5 on the circular scale points to the detent of the main scale.

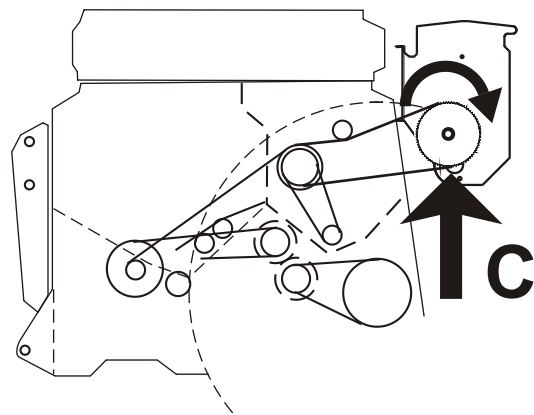
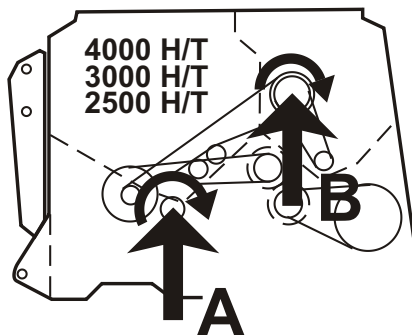
It is advisable to perform a calibration every time before the final choosing of the feed amount. The cleanness, specific weight and grain treatment of the seeds affect the flowing of the seeds in the feeding device.

While drawing up the sowing chart, a 5 % slide due to the sinking of the tires was taken into account, which, depending on the soil type, can be 5-10 %. The calibration must never be performed based on the surface area meter. The calibration can be performed separately on seeds and fertilizer if felt necessary. While performing the calibration, the locking pin of the chainwheel is to be moved to the outer most hole, so that only the feeding devices of the small seed device are rotating.

When performing the calibration, the calibration troughs of the machine are used like in the seed side. The adjustment values and round test points corresponding with the desired

## CALIBRATION POINTS

Using the crank from the package, turn the feeder shaft 1 revolution/3 seconds in the following points:



## CALIBRATION ROTATIONS (small seed sowing)

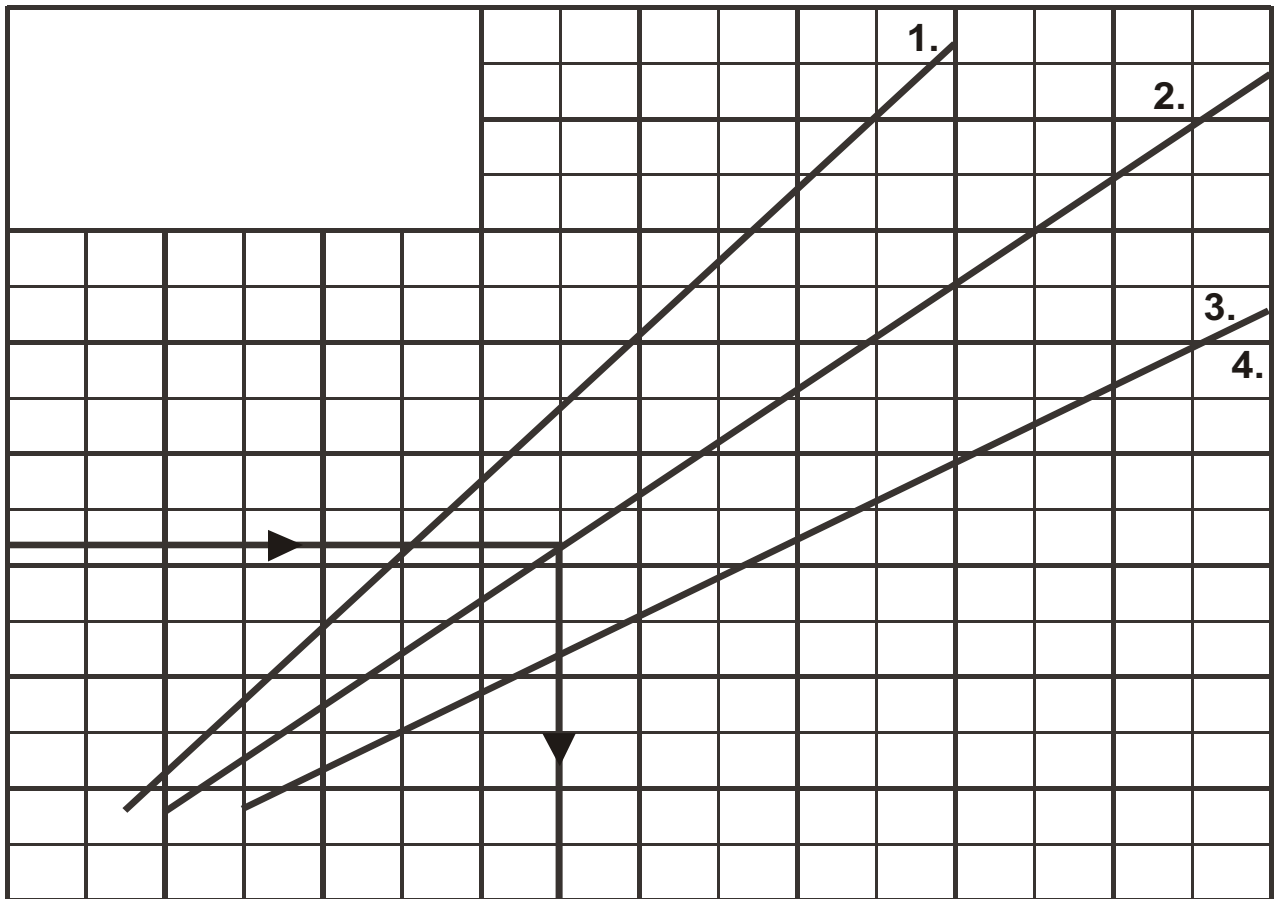
<b>B</b>	Rot./100m <sup>2</sup>
S-2500 H/T	5.3
S-3000 H/T	4.4
S-4000 H/T	3.3

<b>C</b>	Rot./100m <sup>2</sup>
S-2500	3.1
S-3000	2.6
S-4000	2.0

**CLOSING TRAP POSITION**

Position  
 Small seed 1 (fully open)  
 Start fertilizer 3

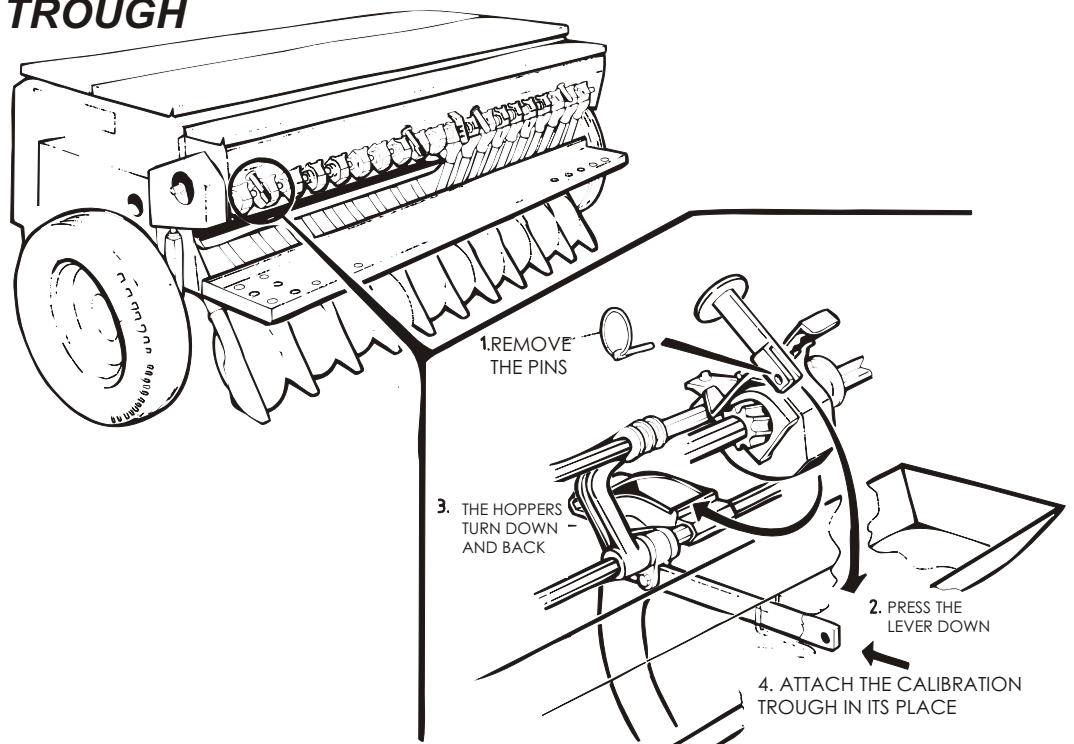
# SMALL SEED BOX SOWING CHART



Bottom flap position 0.

The values in the chart are only guidelines due to the variation in seed quality. They can be verified by calibration.  
For example, if sowing timothy 32 kg/hectare, the setting is 3.5.

## CALIBRATION TROUGH USAGE



For example:  
Sowing timothy 32 kg/hectare.

1. Fill the tank with at least 10 cm of seeds.
2. Lift up the machine.
3. Remove the locking pin of the chainwheel and move it to the outer most hole of the same shaft.
4. See the sowing chart for the correct settings for the sowing of timothy at 32kg/hectare, which are 3 on the main scale and 5 on the circular scale.
5. Adjust the feed from the set wheel on the left side of the machine so that the value on the main scale, which can be read in the centre of the set wheel, is 3. The set wheel is turned a further five notches, so that the value on the circular scale is 5. The adjustment is always made from the smaller value to the larger.
6. Remove the pins from the supports of the calibration troughs and remove hopper shafts. Remove the pins also from the supporters of the fertilizer drill's calibration troughs and remove troughs.
7. Re-install the hopper shafts of the small seed sowing device and the troughs under the feeder cases and make sure that all the seeds fall into the troughs.
8. Turn the calibration crank, which has been installed in the calibration point, a few rounds and make sure all the feeder cases are feeding. Pour the seeds from the troughs back into the tank and replace the troughs.
9. Turn the crank at the speed of 1 rotation/3 seconds (see chart).
10. Weigh the seeds that have fallen into the troughs.
11. If the weight was considerably different from the one indicated on the chart, readjust the machine and repeat calibration.

*NOTE THAT THE VALUES IN THE SOWING CHART ARE ONLY ESTIMATES  
DUE TO THE DIFFERENCES IN TEXTURES, GRAIN TREATMENTS, ETC.*

## CHOOSING SOWING AMOUNTS AND CALIBRATION

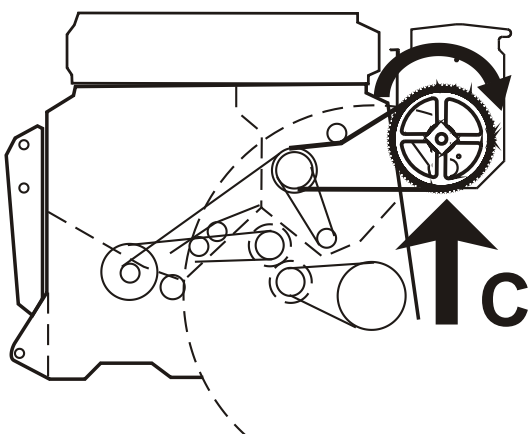
(START FERTILIZER CHAINWHEEL Z76)

The adjustment of sowing amounts is performed as with small seeds. The difference is that with start fertilizer a smaller rotation speed is used. This is why start fertilizer has different calibration rotations when turning from the end of the box (point C). The calibration rotations stay the same when turning from the machine (point B).

In the start fertilizer calibration, the calibration troughs are positioned in the normal seed calibration position.

If start fertilizer and small seed sowing alternates often, it is possible to sow the small seeds at the start fertilizer gearing. In this instance it must be noted that the longitudinal distribution regularity is somewhat weakened from normal.

The calibration rotations are chosen from the chart's HALVED ROTATION SPEED values.



<b>C</b>	<b>Rot./10a</b>
S-2500	15.5
S-3000	13
S-4000	10

**NOTE! The result is the calibration amount for 10 are, so it must be multiplied by 10 to get the amount for one hectare.**

**When sowing start fertilizer, it is recommended that the mixer shaft is disabled. This can be done by removing the drive screw from inside the box, from the pin that rotates the shaft.**

(START FERTILIZER CHAINWHEEL Z37)

Start fertilizer can also be sown on regular speed. In this instance it must be noted that the machine's wear is twice as fast as usual.

Below, you will find sowing charts for both normal and halved rotation speeds.

