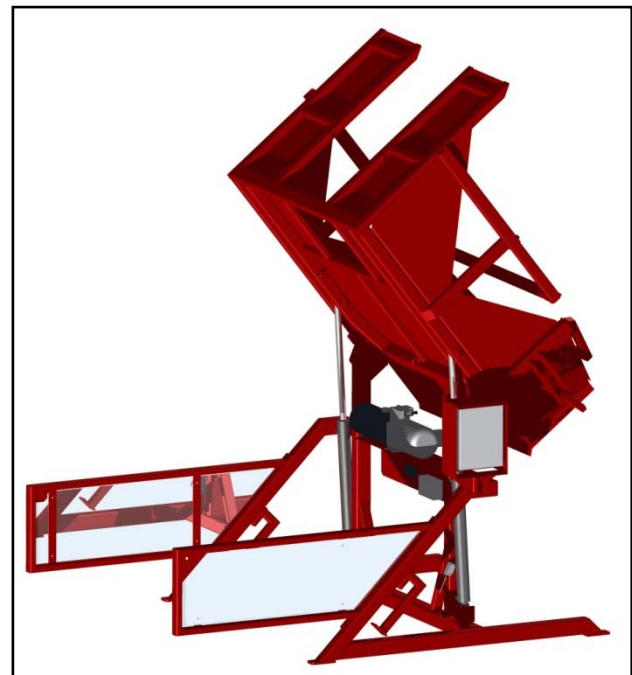


## K60/K60-AKB

Stationary box rotator



K60



K60-AKB





# Englisch

## Table of contents

<b>1. TO THE USER .....</b>	<b>2</b>
1.1 INTRODUCTION .....	2
1.2 SAFETY PRECAUTIONS AND WARNINGS .....	3
1.2.1 <i>Safety precautions</i> .....	3
1.2.2 <i>Safety stickers and warning signs</i> .....	5
1.2.3 <i>Location of the safety stickers on the machine</i> .....	5
1.3 PURPOSE OF USE .....	6
1.4 LIABILITY.....	7
1.5 WARRANTY .....	7
<b>2. TECHNICAL DATA .....</b>	<b>8</b>
2.1 GENERAL TECHNICAL DATA .....	8
2.2 K60 .....	9
2.2.1 <i>Parts list</i> .....	9
2.2.2 <i>Commissioning the K60 stationary box rotator</i> .....	10
2.3 K60-AKB .....	11
2.3.1 <i>Parts list</i> .....	11
2.3.2 <i>General operation of K60-AKB stationary box rotator</i> .....	12
2.3.3 <i>Commissioning the K60-AKB stationary box rotator</i> .....	13
2.3.4 <i>K60-AKB stationary box rotator emergency stop buttons</i> .....	15
2.4 REPLACEMENT COMPONENTS.....	15
<b>3. MAINTENANCE AND TROUBLESHOOTING .....</b>	<b>16</b>
3.1 PREVENTIVE MAINTENANCE AND LUBRICATION .....	16
3.2 ADJUSTMENT OF THE K60-AKB DOSING INSTALLATION.....	17

## 1. To the user

### 1.1 Introduction

The aim of this manual is to inform users about the commissioning, use and maintenance of their new WIFO stationary box rotator. Also included in this manual are a number of safety instructions to create a safe working environment.

At WIFO-Anema B.V. we aim to continuously improve our products. WIFO-Anema B.V. reserve the right to introduce any changes and improvements deemed necessary without prior notice.

Please read the manual thoroughly and observe the safety procedures before putting the unit into operation. Contact your dealer for any further questions or concerns you may have.

We trust that your WIFO stationary box rotator will provide many years of useful service.



**ATTENTION:**

*Carefully read this manual before you put the machine into operation and act upon all directions that are given. This is to guarantee its safe, trouble-free operation.*



Keep this manual in a safe place for future reference!

WIFO-Anema B.V.

**Dealer:**

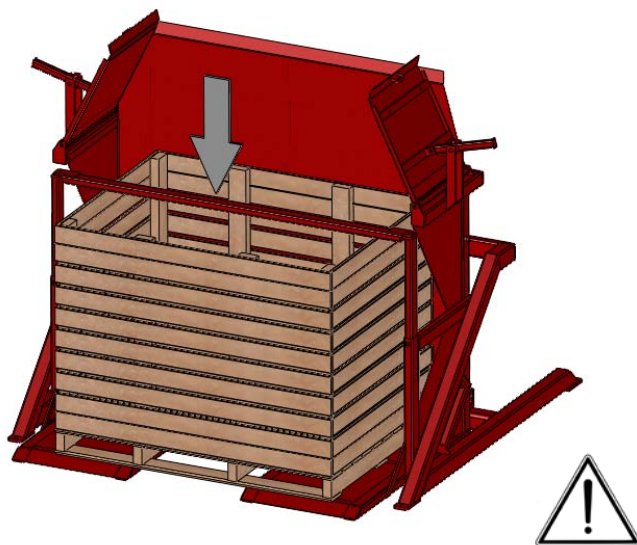
## 1.2 Safety precautions and warnings

Please read this manual before you put the machine into operation for the first time, and observe the safety instructions at all times. The most important instructions are marked with a symbol.

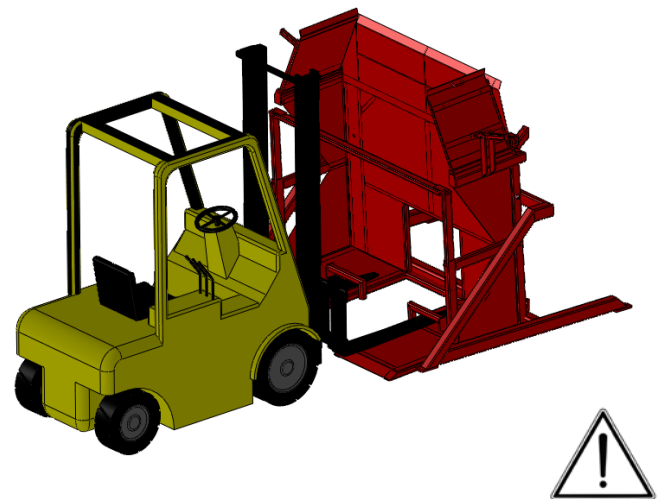
	<p><i>This symbol is used for all important safety instructions throughout this manual. Carefully observe the instructions and be very cautious.</i></p>
	<p><i>This symbol is used for all important actions that should not be carried out under any circumstances. Carefully observe these prohibitions.</i></p>

Any person in charge of the commencement of operation, the operation itself or the maintenance of the machine is urged to carefully read and observe the following instructions.

### 1.2.1 Safety precautions



*Adjust the height setting to the correct height. This must be 2 cm greater than the total box height. Fix the adjusting bar at the correct level.*



*For transportation using the K60/K60-AKB, set the truck's forks to the correct width, so that the points engage in the transport brackets provided.*



*Persons must not stand below the box, and must remain outside the working range of the box rotator. Bear in mind that items may fall from the box.*



*Only sound boxes must be used for tipping operations.*

*Load boxes in such a way that the load can not fall unexpectedly or be damaged.*

*Ensure that there is adequate visibility of the work activities from the operating position.*

*Make sure the hydraulic hoses and any power cables do not get jammed and that the box rotator is able to move freely.*


*The generator oil level must be periodically checked. The oil temperature must not exceed 80°C.*




**ATTENTION:**

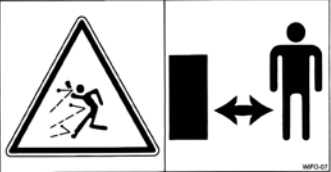
*Adjustment of the set maximum pressure delivered by the generator is entirely at the user's own risk. This will also invalidate the guarantee, and all liability on the part of WIFO B.V. with respect to any damages is excluded.*

### 1.2.2 Safety stickers and warning signs

	<p>A safe working environment also requires personnel to be well-informed about the various safety stickers on the machine. Be aware of the hazards they warn you to look out for.</p>
	<p>Replace any loose, illegible or missing stickers.</p>

Several safety stickers have been put onto the machine. The meaning of the stickers on this machine is as follows:

	<p><b><u>N.B.:</u></b> Please read the instructions from the manual prior to any maintenance to the machine. Turn off the engine and remove the key from the ignition while maintenance is carried out on the machine!</p>	<p>1</p>
---	--	----------

	<p><b><u>Danger:</u></b> Always keep at a safe distance from the machine!</p>	<p>2</p>
--	---	----------

### 1.2.3 Location of the safety stickers on the machine

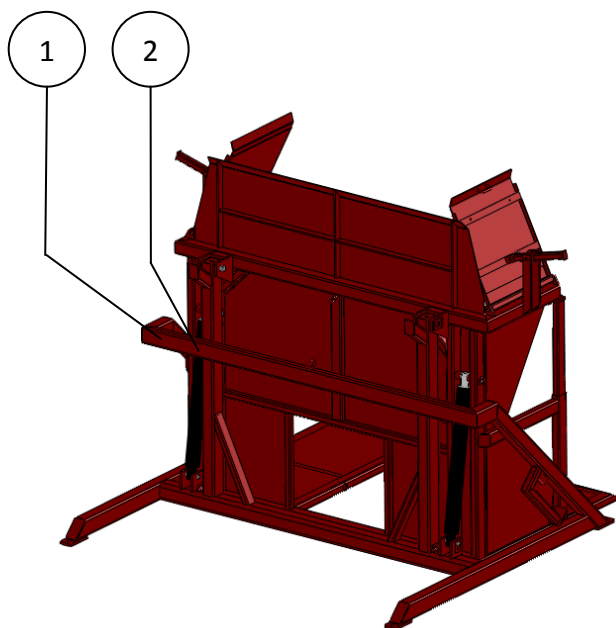


Figure 1.2.1-Location of the safety stickers for K60

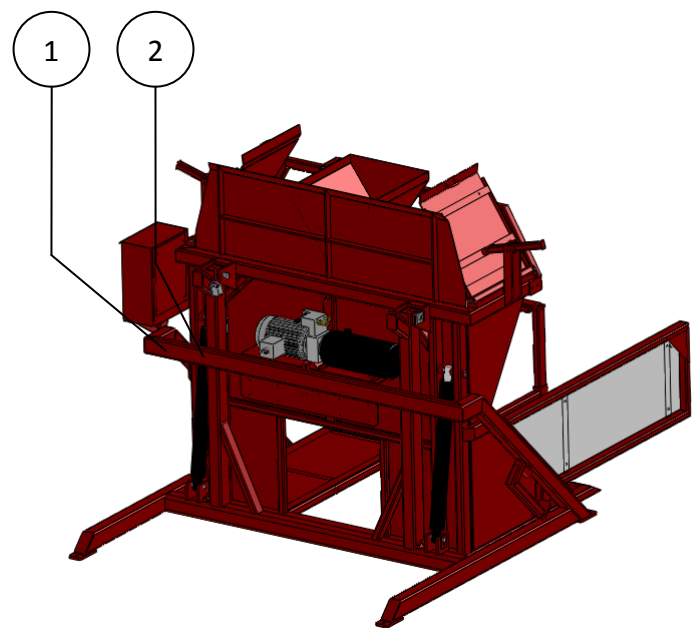


Figure 1.2.2-Location of the safety stickers for K60-AKB




### **1.3 Purpose of use**

The WIFO stationary box rotator is suitable solely for the purpose of rotating boxes to the rear, provided the total weight of the box and its load does not exceed 2000kg.



## 1.4 Liability

1. Work must be carried out in accordance with the directions and within the functional restrictions (e.g. maximum hydraulic working pressure) as outlined in the regulations. Use only sound and appropriate tools.
2. Electric/electronic equipment and accessories (e.g. cables) must be treated in accordance with the general accepted policy for using non-waterproof portable electric and electronic equipment, such as:
  - a) Storing and keeping in a clean, dry environment away from rodents and the like; and
  - b) Protecting the equipment against severe, uncushioned shocks and water (precipitation).
3. Use only original or compatible spare parts. Such parts must be assembled as directed (e.g. by observing the recommended tightening moments). Spare parts (as well as lubricants) are considered compatible only if explicitly approved by WIFO or in the event that the customer is able to prove they possess the required properties for the purpose(s) they are used.
4. Use only lubricants that meet the specifications as described in the directions.
5. Always observe the local regulations in terms of accident prevention, safety, traffic and transport.
6. Only trained personnel with knowledge of the possible hazards have permission to work with/on the machine.
7. WIFO-Anema B.V. will assume no liability in any shape or form for losses or damage caused following modifications to the machine, which have not been explicitly approved by WIFO.

	<p><b><i>Noncompliance with the rules and directions from this manual will be considered as serious negligence, for the consequences of which WIFO-Anema B.V. accepts no liability whatsoever. In such cases, the user will bear the full risk of his actions.</i></b></p>
	<p><b><i>WIFO-Anema B.V. is continuously working on the improvement of its products. For that reason, WIFO-Anema B.V. reserves the right to introduce any changes and improvements deemed necessary without prior notice. However, it does not imply an obligation to make any such changes or improvements to machines bought by customers in the past.</i></b></p>

## 1.5 Warranty

WIFO-Anema B.V. guarantees the soundness of its products in terms of materials used and/or structural defects. However, in any event this warranty is limited to the free-of-charge replacement or repairs of the defect product, or part thereof. WIFO-Anema B.V. assumes no liability for any loss or damage arising from faulty deliveries and/or the breakdown of purchased goods before the warranty period has expired. **The warranty period for this product is twelve months.**

## 2. Technical data

### 2.1 General technical data

Type	K60-160	K60-180
Max. carrying capacity <sup>1</sup>	2000 kg	2000 kg
Weight	785 kg	820 kg
Max. working pressure	15Mpa (150 bar)	15Mpa (150 bar)
Max. box width	1600 mm	1800 mm
Adjustable box height	800 - 1400 mm	800 - 1400 mm
Overall width	2120 mm	2320 mm
Tipping angle	142°	142°

Table 2.1.1-WIFO stationary box rotator models

<sup>1</sup> Weight of box + contents.

Type	Letter	Description
K60	AKB	Automatic Rotation Control

Table 2.1.2-Description data on model plate

Type of hydraulic oil	AF 46 or HLP ISO-VG 32 or equivalent
Capacity	10 liter

Table 2.1.3-Information on hydraulic generator

## 2.2 K60

### 2.2.1 Parts list

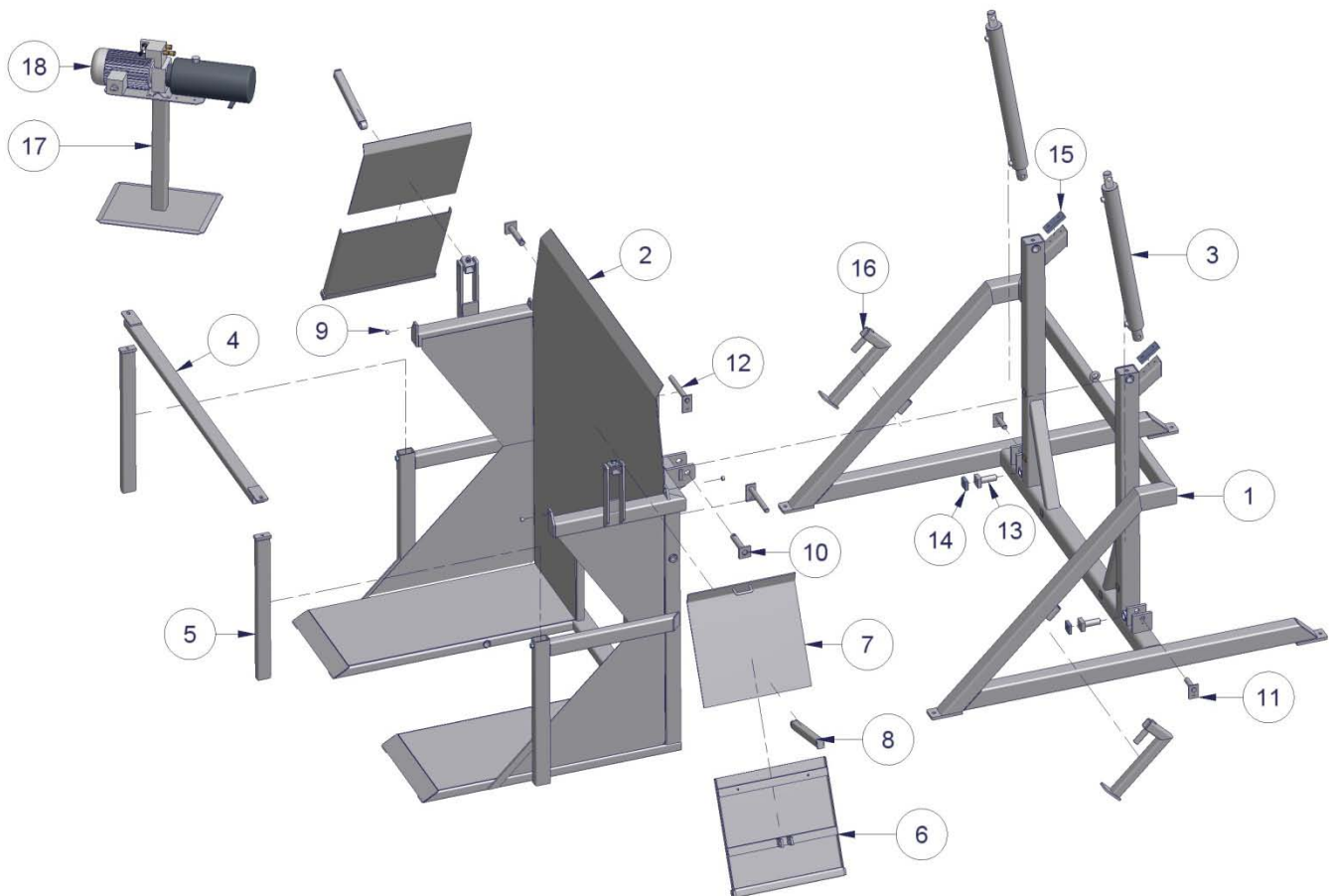


Figure 2.2.1-Parts drawing, K60 stationary box rotator

Number	Description
1	K60 fixed frame
2	K60 rotating frame
3	Cylinder DW 70-40-700
4	Beam height adjustment
5	Adjustment beam height setting
6	Valve with arm
7	Slide
8	Adjusting beam slide
9	Valve tube
10	Rotating frame pin
11	Lower cylinder pin
12	Upper cylinder pin
13	Stop
14	Rubber stop
15	Fixed frame bump rubber
16	Transport hook
17	Standard generator
18	Generator

Table 2.2.1-Parts list for K60 stationary box rotator

## 2.2.2 Commissioning the K60 stationary box rotator



**ATTENTION:**

*Account must be taken of the correct direction of rotation of the generator when connecting it to the power supply. Where this is incorrect, the two phases should be switched around.*

1. To move the machine, first attach the transport hooks to the rotating frame. Set the lift truck forks so that the points engage under the transport hooks. Drive carefully and take account of the width and height of the machine.
2. Slide the height adjuster to the correct box height, which must be 2 cm higher than the total box height. Fasten the box support using the bolts.
3. Depending on the desired outflow opening, the left and right valves, the arm and the tipping frame can be adjusted using the handles and bolts.



*Attach the hydraulic hose to a suitable hydraulic installation with a maximum pressure of 15 Mpa (150 bar). The maximal pressure of 15 Mpa (150 bar) must not be exceeded.*

4. Subsequently check that the hydraulic hoses and electric cables can move freely and check that the system is not leaking oil.
5. Check the correct operation of the stationary rotator by operating the hydraulic functions.



*Where the K60 is set up as a fixed installation it is recommended that it be secured using four anchors in the floor.*

The WIFO stationary box rotator is now ready for use.

## 2.3 K60-AKB

### 2.3.1 Parts list

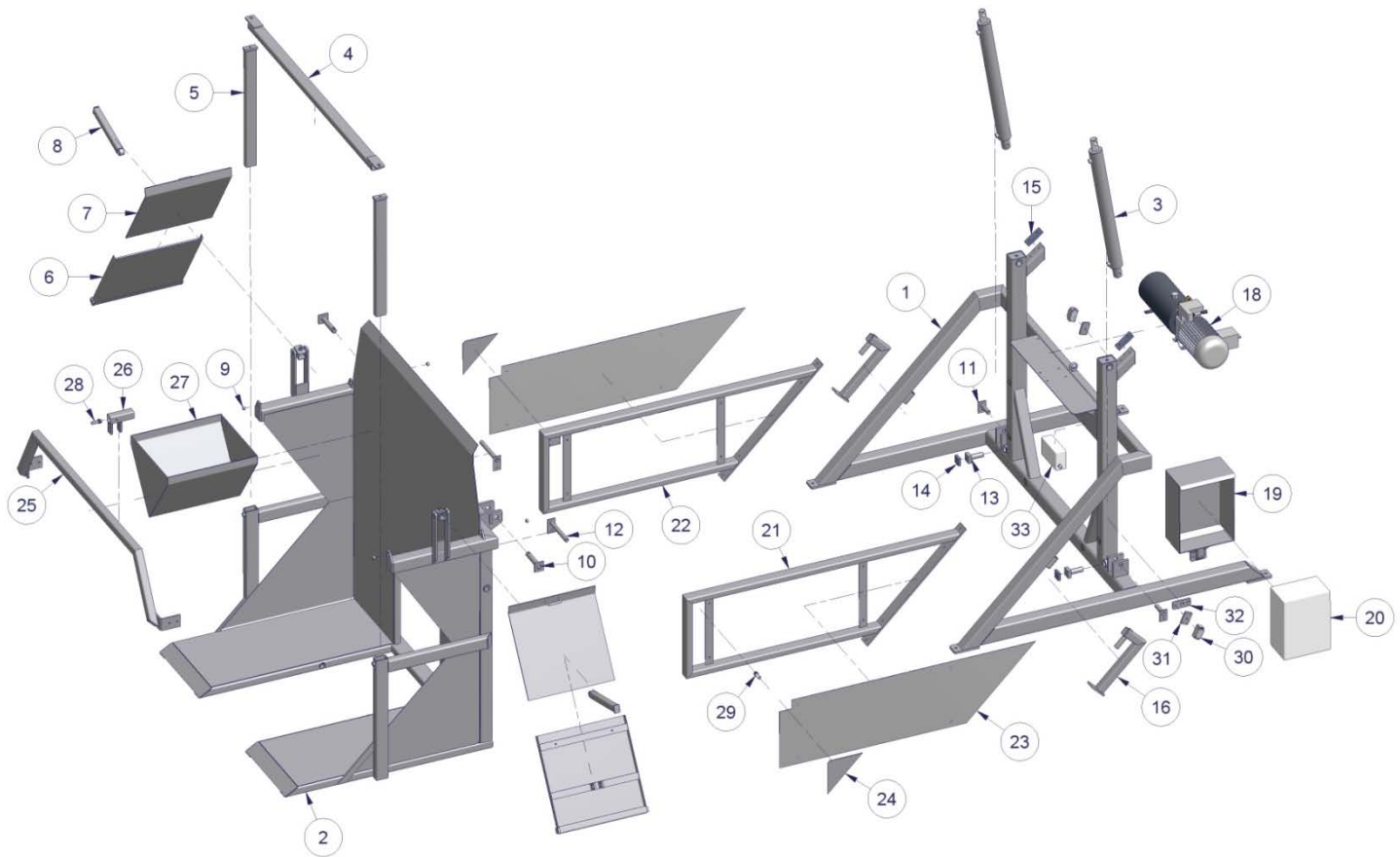


Figure 2.3.1-Parts drawing, K60-AKB stationary box rotator

Number	Description	Number	Description
1	K60 fixed frame	19	Control cabinet housing
2	K60 rotating frame	20	Control cabinet
3	Cylinder DW 70-40-700	21	Fencing, right
4	Beam height adjustment	22	Fencing, left
5	Adjustment beam height setting	23	Stainless steel plate fencing
6	Valve with arm	24	Walk-in protection plate
7	Slide	25	Ultrasonic sensor bracket
8	Adjusting beam slide	26	Ultrasonic sensor holder
9	Valve tube	27	Dosing plate
10	Rotating frame pin	28	Ultrasonic sensor
11	Lower cylinder pin	29	Walk-in protection
12	Upper cylinder pin	30	Limit switch
13	Stop	31	Limit switch adjusting strip
14	Rubber stop	32	Adjusting strip holder
15	Fixed frame bump rubber	33	Remote control
16	Transport hook		
18	Generator		

Table 2.3.1-Parts list for K60-AKB stationary box rotator

### 2.3.2 General operation of K60-AKB stationary box rotator

In this format the stationary box rotator is equipped with an ultrasonic sensor which can detect potatoes. The ultrasonic sensor detects the potatoes as they roll out of the box across the plate and the machine interrupts its tipping for a set interval. When no more potatoes are detected the machine will tip further and the cycle will begin again. The cycle will continue until the box rotator is fully tipped. It will then automatically tip back in the other direction, following a set interval. The empty box can then be replaced with a full one, and dosed emptying can recommence with a single press on the button. The K60 model is provided with a control cabinet with a range of controls. Manual control is of course still possible in addition to automatic mode. In this format the generator is mounted on the K60 itself, and can be switched on using the main switch on the control cabinet. The entire unit is protected by means of an emergency stop located on the same control cabinet. The sides of the K60 are also enclosed to prevent anyone entering from the side. A photoelectric cell is provided to protect the front of the machine, which will stop if the light beam is interrupted.

#### Wireless operation:

The K60-AKB can optionally be equipped with a sturdy wireless remote control with 3 functions and an emergency stop. The guaranteed range is 50 metres (up to 500 metres is achievable). A single key to fully tip and empty the box, and tip it back to the starting position. A key to stop the cycle, and an emergency stop reset key. Ideal for operation from the forklift truck.



Figure 2.3.2-K60-AKB wireless remote operation

### 2.3.3 Commissioning the K60-AKB stationary box rotator



**ATTENTION:**

*Account must be taken of the correct direction of rotation of the generator when connecting it to the power supply. Where this is incorrect, the two phases should be switched around.*

1. To move the machine, first attach the transport hooks to the rotating frame. Set the lift truck forks so that the points engage under the transport hooks. Drive carefully and take account of the width and height of the machine.
2. Slide the height adjuster to the correct box height, which must be 2 cm higher than the total box height. Fix the adjustment beam height setting using the bolts.
3. Depending on the desired outflow opening, the left and right valves, the arm and the tipping frame can be adjusted using the handles and bolts.

#### **Starting the K60-AKB stationary box rotator:**

4. Check that all **emergency stops** are released.
5. Switch on the K60-AKB using the **main switch (1)**.
6. Reset the start-up emergency stop by pressing twice on the **reset Em. stop (7)** key on the remote control. ("lamp switched off" light will go out.)

*A selection must now be made between automatic or manual operation, and the following actions must be taken:*

#### **Automatic mode:**

7. Set the selector switch on the control cabinet to **automatic (2)**.
8. Drive into the K60-AKB with a full box.
9. Now press on the **start/outward (8)** key on the remote control or on the **raise (3)** key on the control cabinet. (The blue lamp will illuminate.)



**ATTENTION:**

*After a delay, the stationary box rotator will now commence its tipping cycle. Various waiting periods are programmed into the cycle.*

10. After a delay, the stationary box rotator will now commence its tipping cycle. Wait until the box is emptied (in stages) and is tipped back.
11. Exchange the empty box for a full one, and restart the cycle.

**Manual mode:**

7. Set the selector switch on the control cabinet to **manual operation (2)**.
8. Drive into the K60-AKB with a full box.
9. As long as either the **start/outward (8)** key on the remote control or the **raise (3)** key on the control cabinet is depressed, the K60-AKB will tip the box until the end position is reached.
10. If the **stop/return (6)** key on the remote control or the **lower (4)** key on the control cabinet is pressed, the stationary box rotator will return to its start position.
11. Exchange the empty box for a full one, and repeat the previous actions.

	<p><i>Where the K60-AKB is set up as a fixed installation it is recommended that it be secured using four anchors in the floor</i></p>
---	--

The WIFO stationary box rotator is now ready for use.

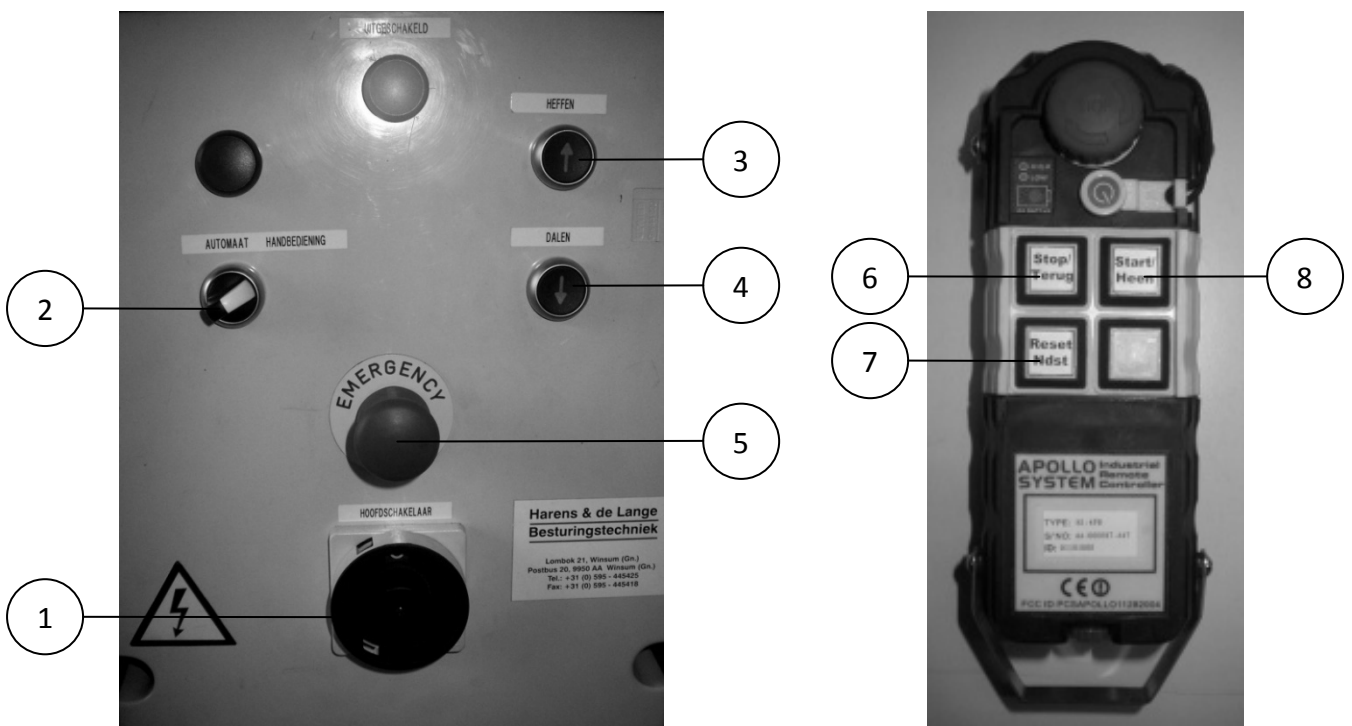


Figure 2.3.3-K60-AKB control cabinet and remote control keys



### 2.3.4 K60-AKB stationary box rotator emergency stop buttons

Four emergency stop buttons are provided, operation of which will take the K60-AKB out of operation. All the emergency stops must first be switched off before they can be reset. Pressing twice on the **reset Ndst (7)** will now put the machine back into operation. This means that the K60-AKB will tip outward in automatic mode and then complete its cycle. In manual mode you will now be able to operate the box rotator manually again. You can also put the machine in manual mode, in order to rotate it into the desired position.



Figure 2.3.4



Figure 2.3.5



Figure 2.3.6



Figure 2.3.7


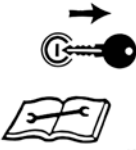
Figure	Description
2.3.4	Emergency stop on control cabinet
2.3.5	Emergency stop on the remote control
2.3.6	Emergency stop on the remote control receiver
2.3.7	Walk-in protection. Walk-in protection is not active when the K60-AKB is fully tipped to the rear, to allow boxes to be exchanged without difficulty.

## 2.4 Replacement components

Type	Accessories	Component number
K60	Supply and offtake hoses	HYLR500031WP
	Supply/offtake hoses to rotating cylinder	HYLR040031WW90
	Rotating cylinder seal kit	7792862
	Single-acting balancing valve	429057
K60-AKB	Supply and offtake hoses	HYLR120031WW
	Supply/offtake hoses to rotating cylinder	HYLR040031WW90
	Rotating cylinder seal kit	7792862
	Single-acting balancing valve	429057

Table 2.4.1-Replacement components for WIFO stationary box rotators

### 3. Maintenance and troubleshooting

 	<p><b><u>N.B.</u></b>  <i>Please read the instruction manual prior to any maintenance to the machine.          Turn off the engine and remove the key from the ignition while maintenance is carried out on the machine!</i></p>
---	--

Ensure that the tipping cylinders (fully retracted) are in their lowest position. Unintended tipping and/or raising of the stationary box rotator during maintenance must be prevented. An additional precaution would be to disconnect the hydraulic hoses.


#### 3.1 Preventive maintenance and lubrication


After the first 8 working hours:


- Check the connections and turnbuckles of the hydraulic hoses.

At least once annually, or after a maximum of 2000 service hours:

- Replace the fluid in the hydraulic generator.

	<p><i>This sticker shows the position of a grease nipple on the machine. Lubricate the machine after every 10 working hours. Recommended lubricants include SAE 30 oil and Grade 2 lithium-based grease.</i></p>
---	--

	<p><i>Regularly check the hydraulic system for any leaks. Never try and search for leaks or stop a leak by hand. Liquid under high pressure can easily penetrate skin and clothing, and may cause serious injuries. Replace any damaged hydraulic hoses to prevent bursting and subsequent injury.</i></p>
	<p><i>The level of the hydraulic fluid must be checked regularly.</i></p>
	<p><i>Always use original WIFO parts for replacement in order to comply with the warranty terms and conditions.</i></p>

	<p><i>Please contact your dealer for any further concerns you may have.</i></p>
---	---

## 3.2 Adjustment of the K60-AKB dosing installation

It is recommended that the dosing installation should initially be adjusted mechanically, and then by means of software if necessary.

### **Mechanical:**

The flow rate through the K60-AKB can be controlled by modifying the position of the slide and the valves. Please also refer to operation 3 in the section on the commissioning of the K60 stationary box rotator (2.2.2).

### **Hardware method:**

The dosing speed can be controlled through the hardware by adjusting the detection distance of the ultrasonic sensor. You should first put the stationary box rotator into its rest position, and depress the emergency stop button to prevent any unintended movements. Leave the main switch on. Remove the black cover cap from the sensor tube to gain access to the adjusting screw. You can now gauge the current setting by holding a hand in front of the sensor. The lamp to the rear of the sensor will illuminate at the moment the sensor detects an object (the standard setting is 16.5 cm, measured from the tipping frame). You can now change the detection distance by means of the adjusting screw. Closer to the frame translates as earlier detection, resulting in slower dosing. Further away from the frame means later detection and therefore more rapid dosing.

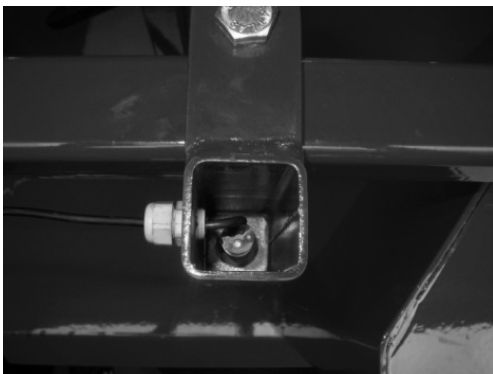



Figure 3.2.1-Ultrasonic sensor adjustment screw

Via software:

	<p><i>It is recommended that the following actions should be carried out only by a competent fitter.</i></p> <p><i>WIFO-Anema B.V. can accept no liability for the possibly negative consequences of altering the pre-programmed time units.</i></p>
---	--

The K60-AKB control cabinet contains a PLC which among other things controls the machine's dose rate. Figure 3.2.2 shows the PLC screen. You can adjust the dosage rate by changing the time units on the screen. The K60-AKB will start tipping immediately you select "tip" mode and press on the **start/outward (8)** key on the remote control, or the **raise (3)** key on the control cabinet. The box will tip until the ultrasonic sensor detects the potatoes for 0.1 seconds (the "reaction time"). If this happens the tipping mechanism will pause for 3.0 seconds (the "stop time") to allow the potatoes to flow out. If the sensor continues to detect potatoes after that period of 3.0 seconds, the machine will remain stationary to allow the potatoes dosed out of the box to flow. If the box rotator continues to detect potatoes for longer than 7.0 seconds ("added tipping time") then it will tip for 1.0 second ("tipping time") to get the potatoes out of the box. When the box rotator reaches the upper limit switch after a number of cycles, the control system will pause for 7.0 seconds to allow the box to flow completely empty, and then tip back.

#### Modifying the set time units:

1. Place the K60-AKB in its rest position.
2. Turn off the main switch.
3. Disconnect the box rotator from the mains supply by withdrawing the plug.
4. Open the control cabinet by removing the 4 screws.
5. Carefully open the cabinet.
6. Identify the PLC (see figure 3.2.3)
7. Reconnect the machine to the mains supply.
8. Turn on the main switch.
9. After a short interval the time settings will appear on the PLC screen.
10. You can now select the time unit for modification using the arrow keys (the selected value will flash).
11. The value can now be changed using the + and - keys.
12. The **ok** key must be depressed after each change. The PLC will then report that it is saving the set value.

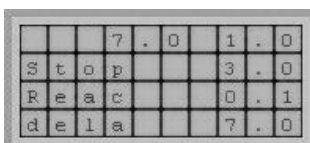


Figure 3.2.2-PLC screen



Figure 3.2.3-PLC







**EG-VERKLARING VAN OVEREENSTEMMING VOOR MACHINES**  
**EC-DECLARATION OF CONFORMITY FOR MACHINERY**  
**EG-MASCHINENÜBEREINSTIMMUNGSERKLÄRUNG**  
**DÉCLARATION DE CONFORMITÉ "CE" POUR MACHINES**

Fabrikant/Manufacturer/Fabrikant/Fabricant:

**WIFO-Anema B.V.**

Adres/Address/Adresse/Adresse:

**Hegebeintumerdyk 37**  
**9172 GP Ferwert**  
**The Netherlands**

Verklaart hiermede dat /Herewith declares that/Erklärt hiermit, daß/Déclare ci-après que

Serienummer/Serial number/Serienummer/Numéro de série:

Uitvoering/Model/Ausführung/Modèle:

- Voldoet aan de bepalingen van de Machinerichtlijn (Richtlijn 2006/42/EG, zoals laatstelijk gewijzigd) en de nationale wetgeving ter uitvoering van deze richtlijn;
- Is in conformity with the provisions of the Machine Directive (Directive 2006/43/EC, as amended) and with national implementing legislation;
- Konform ist mit den einschlägigen Bestimmungen der EG-Maschinerichtlinie (EG-Richtlinie 2006/42/EG), inklusive deren Änderungen, sowie mit dem entsprechenden Rechtserlaß zur Umsetzung der Richtlinie in nationales Recht;
- Est conforme aux dispositions de la Directive "Machines" (Directive 2006/42/EC telle que dernièrement modifiée) et la législation nationale adoptée en application de ladite directive.

Ferwert, March 2009



Wytze Anema  
(Director)