

Forward tipping box rotator

K90



K90



English

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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 forward tipping 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 forward tipping 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 Language and translations

This manual is a translation of the original Dutch version. In case of discrepancies between translations and the Dutch version, the Dutch text prevails.

1.3 Safety precautions and warnings

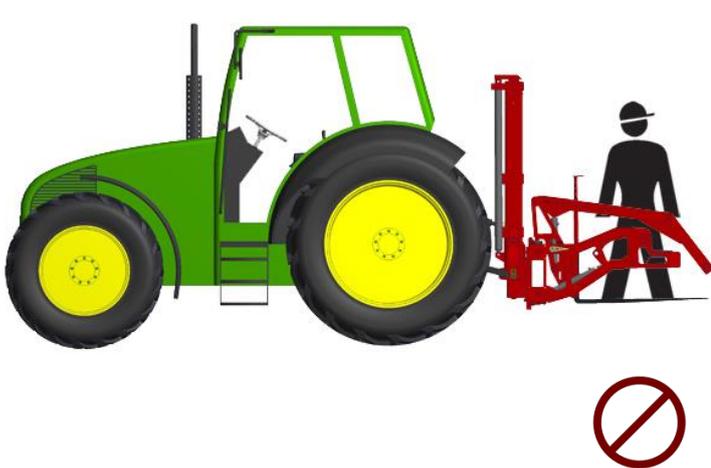
Please read this manual before you put the machine into operation for the first time, and observe the safety instructions at all times. The most important instructions are marked with a symbol.

	<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.

1.3.1 Safety precautions

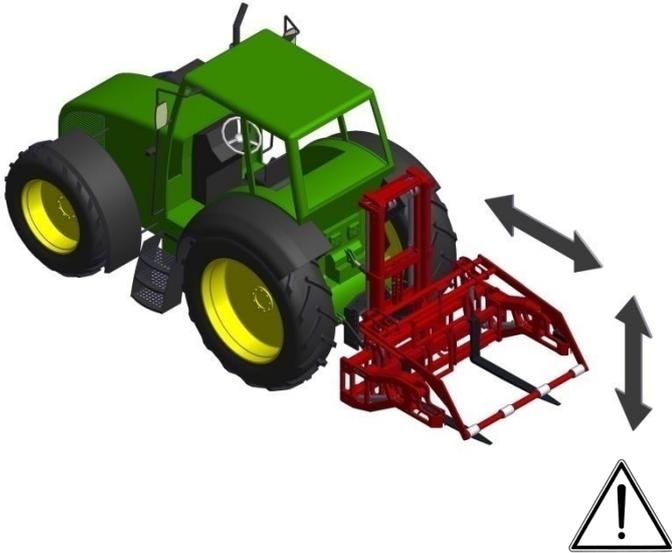
The following safety instructions apply to all types of WIFO forward tipping box rotators. No distinction is made with regard to the type of lifting vehicle used.



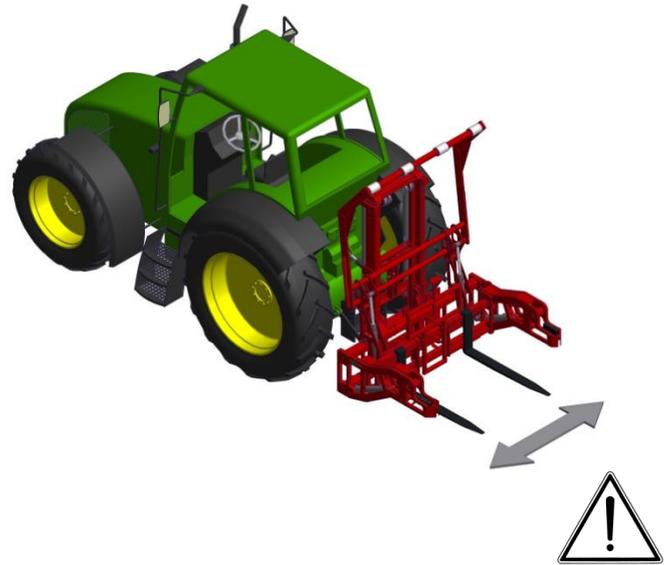
Do not allow anyone to hitch a ride.



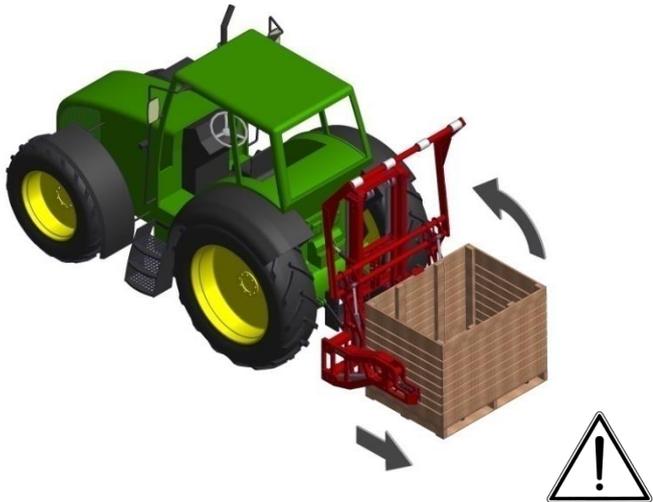
Persons must not stand below the load, and must remain outside the tipping range of the equipment. Bear in mind that items may fall from the box.



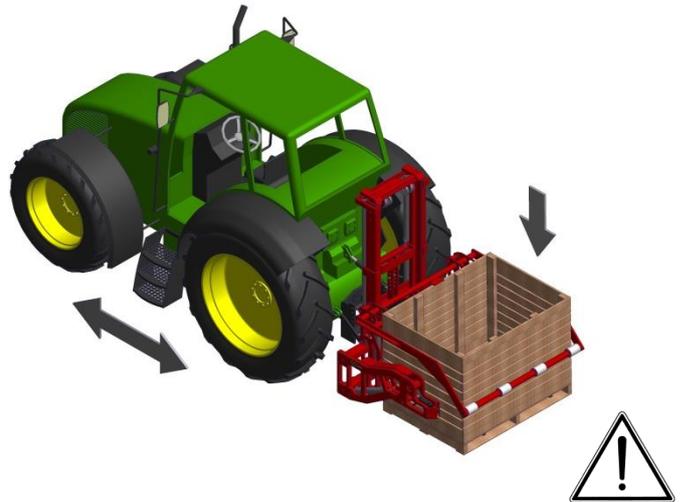
Adjust the clamping frame and the top stop to take account of the height and depth of the boxes to be tipped.



Adjust the forklift forks to the right width so that they will not damage the box.



Raise the upper clamp using the clamping cylinder before picking up the box with the box rotator. Distribute the load as evenly as possible over the forks.



Keep the load as low as possible during transportation to maximise the stability of the lifting vehicle. Boxes must always be clamped during transportation.



<p><i>Only solid boxes must be used for tipping operations.</i></p>
<p><i>The box rotator must only be operated from the driver's position in the vehicle. Ensure that there is adequate visibility of the work activities from this position</i></p>
<p><i>Make sure the hydraulic hoses and any power cables do not get jammed and that the box rotator is able to move freely.</i></p>
<p><i>Ensure that the operating levers for tipping and clamping cannot be confused with each other or with other controls, in order to prevent unintended operation. Only the rotating cylinder function remains in the event of a power cut while operating an electrically controlled valve.</i></p>
<p><i>The tipper must be placed in its lowest position when parking the lifting vehicle. Ensure that the clamp/vehicle combination cannot make any unintended movements while the vehicle is not in use. While the box rotator is being taken off and stored away, it is important to use the support legs. Always park the box rotator on a level and solid surface.</i></p>

1.3.2 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. Replace any loose, illegible or missing stickers.</p>
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Several safety stickers have been put onto the machine. The meaning of the stickers on this machine is as follows:

				<table border="0"> <tr> <td style="text-align: center;"> NL Het totaal van de massa van de machine en de lading mag de hefcapaciteit niet overschrijden. Gewicht Anbaugerät und Last zusammen, darf Tragfähigkeit nicht überschreiten. La capacité de levage doit être supérieure au total de la masse de la machine et du chargement. The weight of the attachment together with the load may not exceed the lifting capacity. </td> <td style="text-align: center;"> NL Zet de machine in de laagste stand indien deze niet gebruikt wordt. Die Maschine muß sich in der untersten Position befinden bei Nichtgebrauch. La machine soit sur la position la plus basse lorsque la machine n'est pas utilisée. The machine should be in the lowest position when the machine is not used. </td> </tr> <tr> <td style="text-align: center;"> D </td> <td style="text-align: center;"> D </td> </tr> <tr> <td style="text-align: center;"> F </td> <td style="text-align: center;"> F </td> </tr> <tr> <td style="text-align: center;"> GB </td> <td style="text-align: center;"> GB </td> </tr> </table>	NL Het totaal van de massa van de machine en de lading mag de hefcapaciteit niet overschrijden. Gewicht Anbaugerät und Last zusammen, darf Tragfähigkeit nicht überschreiten. La capacité de levage doit être supérieure au total de la masse de la machine et du chargement. The weight of the attachment together with the load may not exceed the lifting capacity.	NL Zet de machine in de laagste stand indien deze niet gebruikt wordt. Die Maschine muß sich in der untersten Position befinden bei Nichtgebrauch. La machine soit sur la position la plus basse lorsque la machine n'est pas utilisée. The machine should be in the lowest position when the machine is not used.	D	D	F	F	GB	GB
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D	D											
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GB	GB											

Figure 1.3.1-Safety sticker WIFO

1.3.3 Location of the safety stickers on the machine

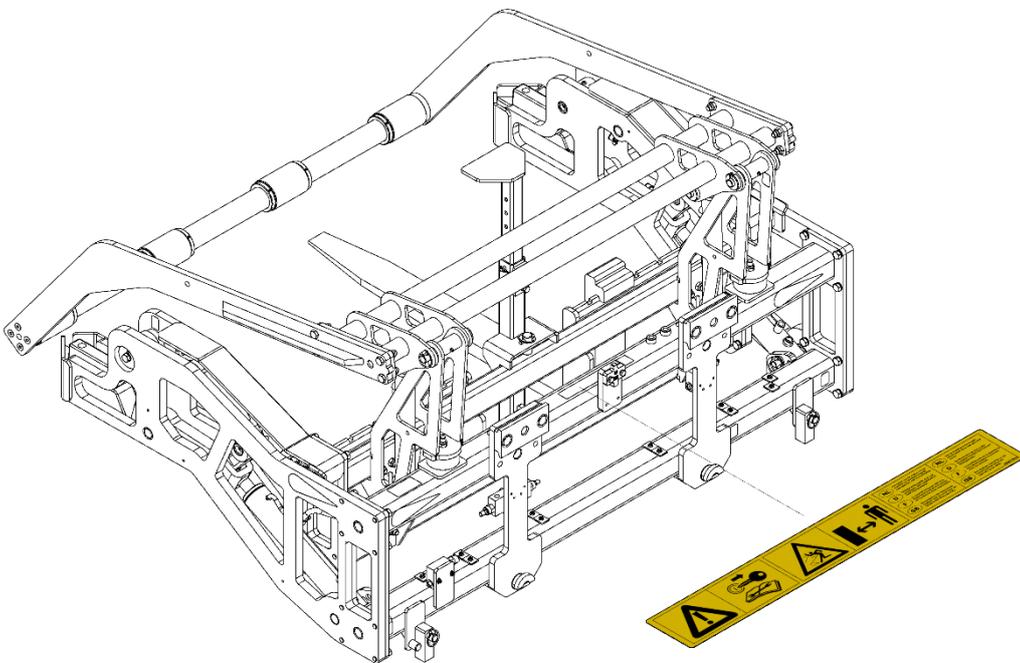


Figure 1.3.1-Location of safety stickers for K90

1.4 Purpose of use

WIFO K90 forward tipping box rotators are suitable only for the transportation and forward tipping (180° max.) of boxes with or without a bottom deck, provided the total weight of the box and its load does not exceed 2500 kg.

The K90 comes with adjustable forklift forks as standard:

- K90-1600/1800/2000: FEM 2 125x45-L1200 (2x)
- K90-2240: FEM 2 125x45-L1100 (2x)
- K90-2400: FEM 2 100x40-L1200 (4x)

A K90 is suitable of picking up boxes ranging in depth from 1000 mm to 1200 mm and 800 mm to 1250 mm in height.



ATTENTION:

The capacity of the forklift truck or lifting mast must exceed the total mass of the forward tipping box rotator, the box and its load. The forklift truck or lifting mast must be equipped with a double action hydraulic connection at the fork carrier, as a minimum. The format will depend on the width of the boxes to be tipped.

The K90 forward tipping box rotator is generally suitable for attaching to a FEM 2 or FEM 3 (K90-2400 FEM 3 or 4) fork carrier of a forklift truck or lifting mast. In addition the box rotator can be supplied ex works with a range of attachments for various telehandlers. When ordering, please specify what you intend to attach the box rotator to. If available they can be fitted in the factory and will be covered by the normal warranty terms.



ATTENTION:

WIFO-Anema B.V. can accept no liability for the construction and mounting of fitting equipment attached by users themselves.

The box rotator must in no circumstances be used for the carriage of persons!

1.5 Liability

Any person working with or on the machine must have read this manual. The machine is to be used for its intended purpose only. Included in the intended purpose are, among other things:

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.



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!

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!

1.6 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	K90-1600	K90-1800	K90-2000	K90-2240
Max. carrying capacity	2500 kg	2500 kg	2500 kg	2500 kg
Weight	945 kg	970 kg	995 kg	1020 kg
Working pressure	18 Mpa - 23 Mpa (180 bar - 230 bar)	18 Mpa - 23 Mpa (180 bar - 230 bar)	18 Mpa - 23 Mpa (180 bar - 230 bar)	18 Mpa - 23 Mpa (180 bar - 230 bar)
Centre of gravity	530 mm	530 mm	530 mm	460 mm
Frontal extension length	460 mm	460 mm	460 mm	460 mm
Transport width	2020 mm	2220 mm	2420 mm	2660 mm
Tipping angle	180°	180°	180°	180°
Type	K90-2400			
Max. carrying capacity	2500 kg			
Weight	1115 kg			
Working pressure	18 Mpa - 23 Mpa (180 bar - 230 bar)			
Centre of gravity	530 mm			
Frontal extension length	460 mm			
Transport width	2820 mm			
Tipping angle	180°			

Table 2.1.1-K90 forward tipping box rotator

The K90-1600/1800/2000/2240 forward tipping box rotators are suitable for attachment to FEM 2 (407mm) and FEM 3 (508mm) fork carriers. The K90-2400 forward tipping box rotator is suitable for attachment to FEM 3 (508mm) and FEM 4 (635mm) fork carrier.

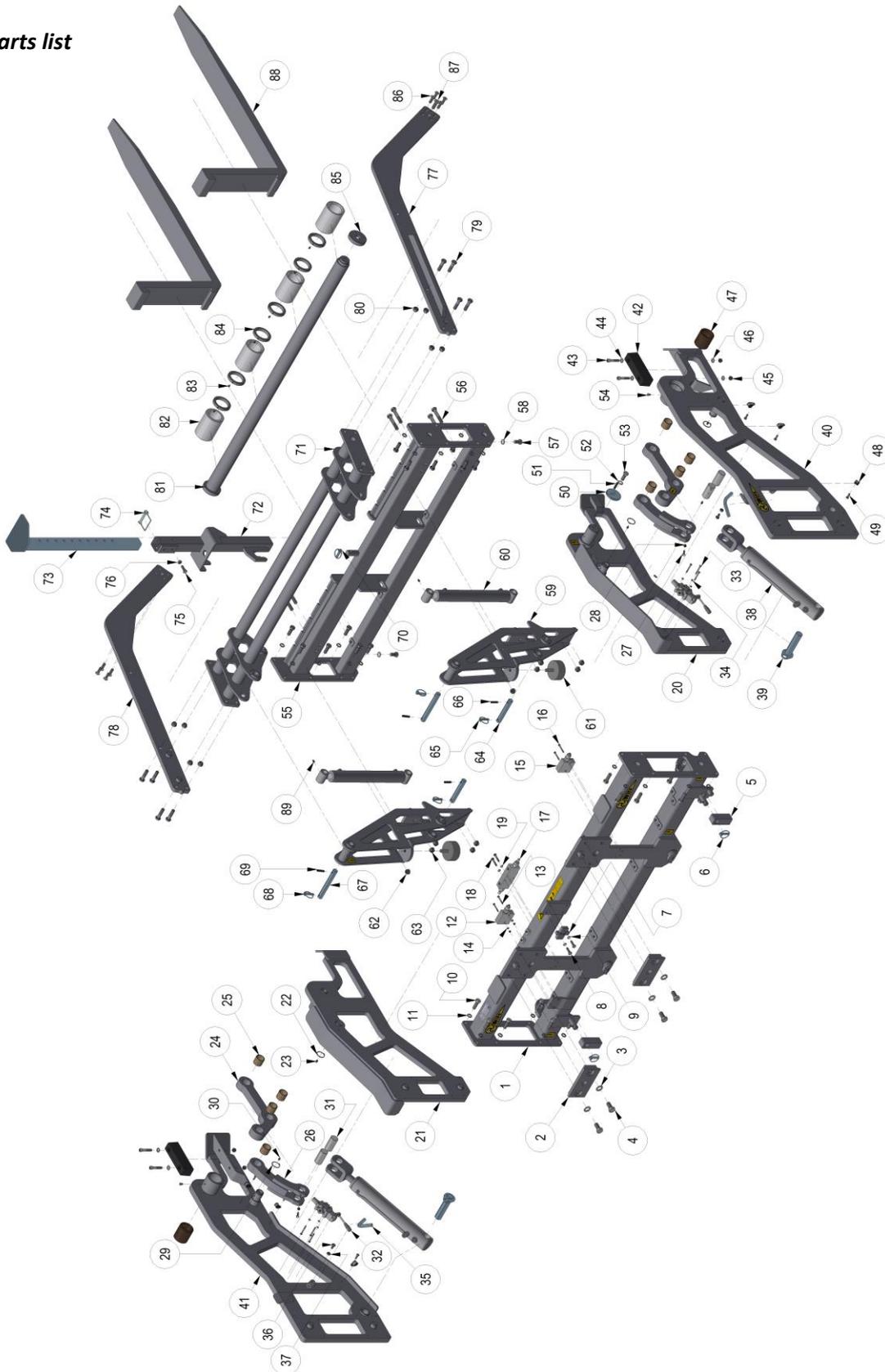
Type	Letter	Description
K90	E	Electrically controlled switching valve
	S	4-hose connection
	V	Sequence valves

Table 2.1.2-Description data on model plate

The box rotators are equipped with a hydraulic limit switch to prevent unintended opening of the upper clamp during tipping. The upper clamp can only be opened when the tipping frame is horizontal.

2.2 K90

2.2.1 Parts list



Number	Description	Number	Description
1	Fixed frame K90-1600	43	Bolt M10x50 DIN 912
	Fixed frame K90-1800	44	Washer M10 DIN 125
	Fixed frame K90-2000	45	Nut M10 DIN 985
	Fixed frame K90-2240	46	Washer M10 DIN 125
	Fixed frame K90-2400	47	Bronze bearing Ø75x60,7-L80
2	Mounting block FEM 2/3	48	Hose clamp 15
	Mounting block FEM 3/4	49	Bolt M8x25 DIN 933
3	Spring lock washer M20 DIN 128	50	Locking plate Ø80x17-L10
4	Bolt M20x40 DIN 933	51	Roll pin 10x40 DIN EN ISO 8752
5	Support leg	52	Spring lock washer M16 DIN 128
6	Linch pin 11x45	53	Bolt M16x40 DIN 933
7	Locking strip plate FEM 2/3	54	Flat round hex screw M8x12 ISO 7380
	Locking strip plate FEM 3/4	55	Tipping frame K90-1600
8	Bolt M10x35 DIN 933		Tipping frame K90-1800
9	Spring lock washer M10 DIN 128		Tipping frame K90-2000
10	Bolt M16x50 DIN 933		Tipping frame K90-2240
11	Heico washer M16		Tipping frame K90-2400
12	Sequence valve 3/8"	56	Bolt M16x90 DIN 931
13	Bolt M6x50 DIN 931	57	Bolt M16x30 DIN 933
14	Nut M6 DIN 985	58	Spring lock washer M16 DIN 128
15	Sequence valve 1/2"	59	Clamp cylinder section 1 K90-1600 – 2240
16	Bolt M6x50 DIN 931		Clamp cylinder section 2 K90-2400
17	Balancing valve 3/8" DW		Clamp cylinder section 3 K90-2400
18	Bolt M8x45 DIN 931	60	Clamping cylinder DW50-30-330
19	Spring lock washer M8 DIN 128	61	Vibration isolator Ø100x43
20	Tipping arm right-side tipping frame	62	Hexagon lock nut M16 DIN 985
21	Tipping arm right-side tipping frame	63	Hexagon lock nut M16 DIN 985
22	Circlip external 40x1,75 DIN 471	64	Upper clamp cylinder pin Ø25-L154
23	Grease nipple M8 DIN 71412	65	Linch pin 11x45
24	Tipping stay, double 3 holes	66	Roll pin 10x40 DIN EN ISO 8752
25	Sinter bronze bearing Ø46x40-L40	67	Upper clamp pin Ø25-L195
26	Tipping stay, 2 holes	68	Linch pin 11x45
27	Bolt M8x30 DIN 933	69	Roll pin 10x40 DIN EN ISO 8752
28	Nut M8	70	Linch pin 11x45
29	Circlip external 40x1,75 DIN 471	71	Intermediate section top clamp K90-1600
30	Grease nipple M8 DIN 71412		Intermediate section top clamp K90-1800
31	Stay pin Ø40-L80 >2018		Intermediate section top clamp K90-2000
	Stay pin Ø40-L74 <2018		Intermediate section top clamp K90-2240
32	Hydraulic 3-way valve 3/8"		Intermediate section top clamp K90-2400
33	Bolt M6x55 DIN 931	72	Insert tube top stop
34	Spring lock washer M6 DIN 128	73	Top stop
35	Pin for end stop Ø16	74	Square tube circlip 12x75
36	Bolt M10x20 DIN 933	75	Bolt M12x35 DIN 933
37	Nut M10	76	Nut M12 DIN 934
38	Rotating cylinder DW 70-35-350	77	Clamping arm right boxdepth 1200mm
39	Rotating cylinder pin		Clamping arm right boxdepth 1100mm
40	Tipping arm right-side main frame	78	Clamping arm left boxdepth 1200mm
41	Tipping arm left-side main frame		Clamping arm left boxdepth 1100mm
42	Rubber buffer 200x52-L60	79	Bolt M16x60 DIN 931

Table 2.2.1-Parts list for K90 forward tipping box rotator

Number	Description	Number	Description
80	Locking nut M16 DIN 985		
81	Cross tube top clamp K90-1600		
	Cross tube top clamp K90-1800		
	Cross tube top clamp K90-2000		
	Cross tube top clamp K90-2240		
	Cross tube top clamp K90-2400		
82	Synthetic roller \varnothing 100x71-L140		
83	Grub screw M8x12 DIN 916		
84	Synthetic roller locking ring \varnothing 89x70.5-L15		
85	Threaddisc cross tube top clamp		
86	Countersunk headscrew M12x40 DIN7991		
87	Countersunk headscrew M16x50 DIN7991		
88	FEM 2 forklift fork 125x45x1200		
	FEM 2 forklift fork 100x40x1200		
89	Grease nipple M8 DIN 71412		

2.2.2 Commissioning the K90 box rotator

Different methods are used to fit the mounting blocks **(2)** and the locking strip plate **(7)**, depending on the type of fork carrier used.

FEM 2 fork carrier

1. Unscrew the FEM2/3 mounting block **(2)** bolts and remove the mounting blocks.
2. Reattach the mounting blocks using the bolts, so that the FEM 2 is underneath. Tighten the bolts securely (200Nm).
3. Unscrew the bolts from the locking strip plate **(7)** and put it in the lowest position with the FEM 2 cam pointing down.
4. Screw the bolts back into the locking plate strip.
5. Remove the forks from the forklift truck or forklift mast.
6. Make sure the fork carrier is straight and clean.
7. Place the forward tipping box rotator on the forklift truck or lifting mast fork carrier.
8. Make sure the locking strip plate slots into the recess in the centre of the fork carrier. If no recess is available:
 - a) Grind such a recess; or
 - b) Take the locking strip plate off the box rotator and attach a good locking cam at the spot where there is an existing recess in the fork carrier.
In doing so, make sure the box rotator sits securely in the centre in front of the fork carrier, so it is unable to slide sideways.
9. Check to make sure the hydraulic hoses are clean before connecting them to the rapid-action couplings to prevent any debris from entering the hydraulics of the machine.
10. Depending on the model, the following hydraulic hoses are connected:
 - a) **Electrically controlled switching valve**
Connect the hydraulic supply/discharge hoses to the dual-action connection on the fork carrier.
Install the supplied switch so that the machine driver is able to operate it from his driving position and cannot confuse it with other controls.
For a safe working environment, avoid situations such as inadvertently starting the machine or not being able to control it.
Keep an eye on the correct voltage of the lifting device and the valve. The voltage is shown on the coil. Attach a twin core cable in accordance with the circuit diagram. Include a warning light, fuse and/or plug socket in the circuit if required.
 - b) **Four-hose connection**
Connect the two pairs of hydraulic supply/discharge hoses to the dual-action connection on the fork carrier.
 - c) **Sequence valves**
Connect one pair of hydraulic supply/discharge hoses to the dual-action connection on the fork carrier.

FEM 3 fork carrier

1. See FEM 2 fork carrier, however the mounting blocks must be fitted with the FEM 3 profile pointing downwards, and must be fitted in the highest position.
2. The locking strip plate also needs to be turned and mounted in the highest position, with the FEM 3 cam pointing down.

Adjusting the upper clamp

1. The K90 forward tipping box rotator is suitable for tipping boxes between 800 mm and 1250 mm in height. For maximum efficiency the top stop (**73**) must be set to the height of the box being used. This can be adjusted as follows:
 - Remove the tube locking pin from the top stop.
 - Adjust the top stop to the correct net box height +5 cm.
 - Secure the top stop with the tube locking pin.



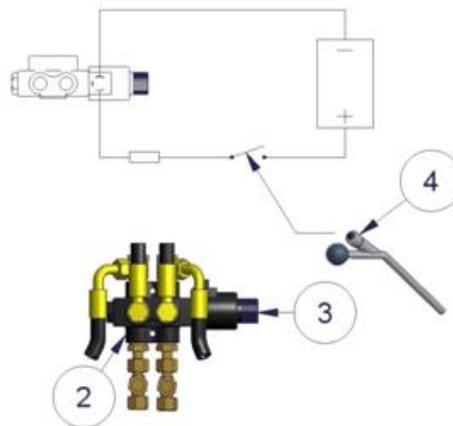
Ensure that the hydraulic hoses and electrical cables can not become trapped during use.

The WIFO forward tipping box rotator is now ready for use.

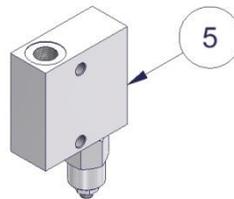
2.3 Provisions for connecting K90

With four-hose connection

With electro/hydraulic valve



With sequence valves (2 pieces)



Number	Description	Note
1	4-hose connection	4-hose connection
2	Electro-hydraulic valve	Electrically operated model
3	Electro-hydraulic valve coil	-
4	Switch on forklift truck handle	-
5	Sequence valve	Sequence valves model

Table 2.3.1-Parts list for K90 connections

2.4 Replacement components

Type: K90

Nr.	Description:	Part no.:
1	Fixed frame K90-1600	-
	Fixed frame K90-1800	-
	Fixed frame K90-2000	-
	Fixed frame K90-2240	-
	Fixed frame K90-2400	-
2	Mounting block FEM 2/3	-
	Mounting block FEM 3/4	-
3	Spring lock washer M20 DIN 128	-
4	Bolt M20x40 DIN 933	-
5	Support leg	-
6	Linch pin 11x45	-
7	Locking strip plate FEM 2/3	-
	Locking strip plate FEM 3/4	-
8	Bolt M10x35 DIN 933	-
9	Spring lock washer M10 DIN 128	-
10	Bolt M16x50 DIN 933	-
11	Heico washer M16	-
12	Sequence valve 3/8"	429063
13	Bolt M6x50 DIN 931	-
14	Nut M6 DIN 985	-
15	Sequence valve 1/2"	429099
16	Bolt M6x50 DIN 931	-
17	Balancing valve 3/8" DW	429058
18	Bolt M8x45 DIN 931	-
19	Spring lock washer M8 DIN 128	-
20	Tipping arm right-side tipping frame	4290816
21	Tipping arm right-side tipping frame	4290815
22	Circlip external 40x1,75 DIN 471	-
23	Grease nipple M8 DIN 71412	-
24	Tipping stay, double 3 holes	4290812
25	Sinter bronze bearing Ø46x40-L40	4290195
26	Tipping stay, 2 holes	4290811
27	Bolt M8x30 DIN 933	-
28	Nut M8	-
29	Circlip external 40x1,75 DIN 471	-
30	Grease nipple M8 DIN 71412	-
31	Stay pin Ø40-L80 >2018	4290813
	Stay pin Ø40-L74 <2018	4290844
32	Hydraulic 3-way valve 3/8"	429059
33	Bolt M6x55 DIN 931	-
34	Spring lock washer M6 DIN 128	-
35	Pin for end stop Ø16	429071
36	Bolt M10x20 DIN 933	-
37	Nut M10	-
38	Rotating cylinder DW 70-35-350	4290468
39	Rotating cylinder pin	-
40	Tipping arm right-side main frame	-
41	Tipping arm left-side main frame	-
42	Rubber buffer 200x52-L60	609007
43	Bolt M12x60 DIN 912	-
44	Washer M12 DIN 125	-
45	Nut M12 DIN 985	-
46	Washer M12 DIN 125	-
47	Bronze bearing Ø75x60,7-L80	4290218

Nr.	Description:	Part no.:
48	Hose clamp 15	-
49	Bolt M8x25 DIN 933	-
50	Locking plate Ø80x17-L10	-
51	Roll pin 10x40 DIN EN ISO 8752	-
52	Spring lock washer M16 DIN 128	-
53	Bolt M16x40 DIN 933	-
54	Flat round hex screw M8x12 ISO 7380	-
55	Tipping frame K90-1600	-
	Tipping frame K90-1800	-
	Tipping frame K90-2000	-
	Tipping frame K90-2240	-
	Tipping frame K90-2400	-
56	Bolt M16x90 DIN 931	-
57	Bolt M16x30 DIN 933	-
58	Spring lock washer M16 DIN 128	-
59	Clamp cylinder section 1 K90-1600 – 2240	-
	Clamp cylinder section 2 K90-2400	-
	Clamp cylinder section 3 K90-2400	-
60	Clamping cylinder DW50-30-330	429039
61	Vibration isolator Ø100x43	429034
62	Hexagon lock nut M16 DIN 985	-
63	Hexagon lock nut M16 DIN 985	-
64	Upper clamp cylinder pin Ø25-L154	4290829
65	Linch pin 11x45	-
66	Roll pin 10x40 DIN EN ISO 8752	-
67	Upper clamp pin Ø25-L195	4290828
68	Linch pin 11x45	-
69	Roll pin 10x40 DIN EN ISO 8752	-
70	Linch pin 11x45	-
71	Intermediate section top clamp K90-1600	4290832
	Intermediate section top clamp K90-1800	4290833
	Intermediate section top clamp K90-2000	4290834
	Intermediate section top clamp K90-2240	4290835
	Intermediate section top clamp K90-2400	4290836
72	Insert tube top stop	-
73	Top stop	-
74	Square tube circlip 12x75	-
75	Bolt M12x35 DIN 933	-
76	Nut M12 DIN 934	-
77	Clamping arm right boxdepth 1200mm	4290838
	Clamping arm right boxdepth 1100mm	4290843
	Clamping arm left boxdepth 1200mm	4290818
	Clamping arm left boxdepth 1100mm	4290820
78	Bolt M16x60 DIN 931	4290837
	Insert tube top stop	4290842
	Top stop	4290817
	Square tube circlip 12x75	4290819
79	Bolt M12x35 DIN 933	-
80	Locking nut M16 DIN 985	-
81	Cross tube top clamp K90-1600	4290821
	Cross tube top clamp K90-1800	4290822
	Cross tube top clamp K90-2000	4290823
	Cross tube top clamp K90-2240	4290824
	Cross tube top clamp K90-2400	4290825

Table 2.4.1- Replacement components for WIFO forward tipping box rotator

Type: K90

Nr.	Description:	Part no.:
82	Synthetic roller \varnothing 100x71-L140	429115
83	Grub screw M8x12 DIN 916	-
84	Synthetic roller locking ring \varnothing 89x70.5-L15	4290839
85	Threaddisc cross tube top clamp	-
86	Countersunk headscrew M12x40 DIN7991	-
87	Countersunk headscrew M16x50 DIN7991	-
88	FEM 2 forklift fork 125x45x1200	-
	FEM 2 forklift fork 100x40x1200	-
89	Grease nipple M8 DIN 71412	-

Nr.	Description:	Part no.:

3. Maintenance and troubleshooting

This manual contains the necessary safety instructions for maintenance work on the machine. Compliance with these instructions is mandatory to ensure personnel safety and to keep the machine in optimal condition.

3.1 General safety regulations

It is mandatory to wear personal protective equipment (PPE) when performing maintenance work on the machine. This is to protect against potential hazards such as mechanical risks, sharp edges, hot surfaces, and harmful substances.

   <small>WFO 20</small>	<p><u>N.B.</u> <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>
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3.2 Required personal protective equipment (PPE)

Maintenance staff must wear at least the following PPE:

- **Safety goggles** - To protect against dust, sparks, or flying debris.
- **Gloves** - Suitable for the specific tasks (cut-resistant, heat-resistant, or chemical-resistant gloves, depending on the task).
- **Safety shoes** - With a steel or composite toe cap and a non-slip sole.
- **Hearing protection** - If working in a noisy environment (>80 dB(A)).

3.3 Specific safety measures

- Ensure that the forward box tipper is in the lowest position when performing maintenance or repairs on the tipper.
- Prevent unintended tilting and/or lifting of the tipper during maintenance work by turning off the tractor's engine and removing the key from the ignition.
- Additional measures can be taken by disconnecting the hydraulic hoses.
- Prevent unauthorized persons from entering the work zone.
- Use the correct tools and follow the manufacturer's instructions.
- After maintenance, the machine must be checked for proper operation before being put back into service.

3.4 Compliance and responsibility

- Failure to comply with these PPE regulations may result in serious injuries or harm.
- Employers and employees share responsibility for the proper use of PPE.
- Regularly check whether the PPE is in good condition and replace it if necessary.

3.5 Preventive maintenance and lubrication

After the first 8 operating hours:

- Tighten the connections and fittings of the hydraulic lines.
- Tighten all bolts.

	<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 them from breaking and any accidents as a result.</i></p> <p><i>Regularly check the oil level of the hydraulic system of your forklift truck / tractor.</i></p>

3.6 Troubleshooting

Forward tipping box rotator type	Problem	Solution
K90 with hydraulic limit switch.	The upper clamp fails to rise when operated.	See section 3.6.1.
	The rotator starts rotating before the upper clamp has closed properly (only with sequence valve)	See section 3.6.2.
	The rotator rotates too slowly (only with sequence valve)	See section 3.6.3.

Table 3.6.1-Troubleshooting

3.6.1 Adjustment of hydraulic limit switch

The K90 forward tipping box rotator is protected against unintended opening of the upper clamp during tipping by means of a hydraulic limit switch. See figure 3.2.3. If the upper clamp fails to open in its horizontal position, check whether the limit switch on the tipping frame is operated. If not, the limit switch stop must be raised to the point where the switch does operate.

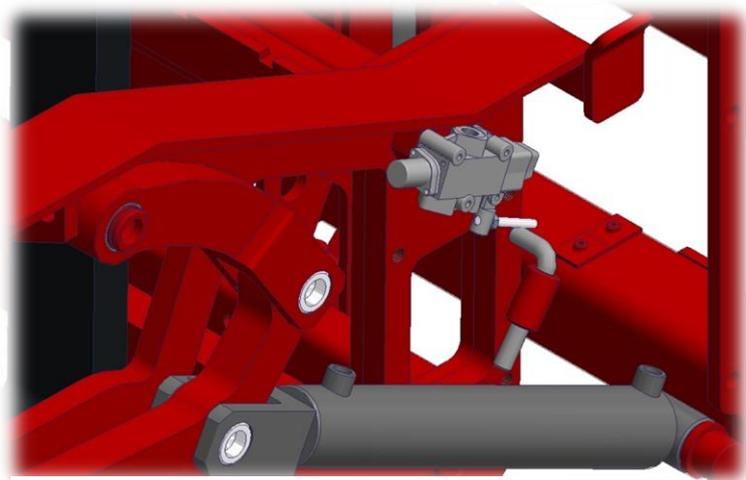


Figure 3.6.1-Hydraulic limit switch

1. Check that the tipping frame is horizontal and resting on its bump rubbers.
2. Loosen the adjusting tube bolt and locknut. See figure 3.2.1.
3. Bring the stop to the correct height, so that it comes up against the handle of the hydraulic switch. Check that the limit switch operates.
4. Securely retighten the bolt and locknut in the adjusting tube.
5. Check the machine for proper operation.

3.6.2 The rotator starts rotating before the upper clamp has closed properly (only with sequence valve)

If the upper clamp does not close properly and the rotator has already started rotating the pressure in the sequence valve has not been set correctly. The (switch) pressure is set too low and needs to be increased. Remove the cap from the sequence valve to get access to an adjustment screw. Turn this screw carefully in a clockwise direction. Adjust with small turns and keep testing its effect by operating the hydraulic function of the forklift/tractor. Always stay clear of the rotator while doing this to avoid accidentally getting trapped!

3.6.3 The rotator rotates too slowly (only with sequence valve)

If the rotator rotates too slowly the pressure in the sequence valve has not been set correctly. The (switch) pressure is too high and needs to be lowered. Remove the cap from the sequence valve to get access to an adjustment screw. Turn this screw carefully in an anticlockwise direction. Adjust with small turns and keep testing its effect by operating the hydraulic function of the forklift/tractor. Always stay clear of the rotator while doing this to avoid accidentally getting trapped!



Always use original WIFO parts for replacement in order to comply with the warranty terms and conditions.



Please contact your dealer for any further concerns you may have. He will be pleased to assist.

EC DECLARATION OF CONFORMITY

(In accordance with the Machinery Directive 2006/42/EC, Annex II, A)

Name: **WIFO-Anema BV**

Address: **Hegebeintumerdyk 37, 9172GP, Ferwert, Nederland**

Telephone: **+31 (0)518 411318**

E-mail: **info@wifo.nl**

Declares that the following machine complies with the relevant directives:

Typeplaatje WIFO

Description of the machine:

The **WIFO K90** forward box tipper is an interchangeable attachment that can be mounted as standard on an ISO 2328 standardized fork carriage. This tipper is used, among other things, for 180° forward tilting and emptying of boxes containing, for example, potatoes, onions, carrots, etc.

Applied European Directives:

- Machinery Directive 2006/42/EC

Applied Harmonized Standards:

- EN ISO 12100:2010 – General safety principles

Name: **Wytze Anema**

Position: **Managing Director**

A handwritten signature in black ink, appearing to be 'Wytze Anema', written over a horizontal line.

Location: **Ferwert**

Date: **01-01-2025**