

HM/HMD

Lifting Masts



HM



HMD



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 lifting mast. 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 lifting mast 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>
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	<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>
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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

The following safety instructions apply to all types of WIFO Lifting masts. No distinction is made with regard to the type of lifting vehicle used.

	<p><i>Operate the mast only from the driver's seat of the tractor. Ensure that there is adequate visibility of the work activities from this position.</i></p>
	<p><i>At all times make sure that everybody is out of range of the working range from the lifting mast and never stand under the box/pallet or lifting mast. Please be aware of falling products.</i></p>
	<p><i>Never transport people on/with the lifting mast.</i></p>



For lifting operations only use proper lifting pallets and boxes.

Place the forks as wide as possible in order to get the greatest possible stability of the load.

Load the pallet or box so that the load cannot fall off unexpectedly. Distribute the load as evenly as possible on both forks. Keep the center of gravity of the load as close to the fork carriage.


Transport objects with the load as low as possible to keep the tractor as stable as possible. Ensure that there is sufficient pressure on all 4 wheels of the tractor, also pay attention to the moving of the center of gravity when lifting, lowering and other activities and especially pay attention to the rough terrain and slopes when working. If desired, use counterweights and / or twin wheel. Or set the track width of the tractor wider.

Make sure that the operating lever for operating the cylinder (s) may not be confused with other control levers to prevent inadvertent tilting.


Make sure the hydraulic hoses and any power cables do not get jammed when operating the lifting mast. Make sure that when lifting or lowering the mast it doesn't hit the tractor.

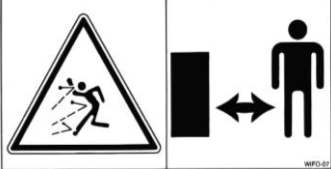
You can only turn off the tractor when the lifting mast is in the lowest position. Ensure that the combination cannot make any sudden movements, if the combination is not used. If the mast is removed and set aside, it should be supported by the support legs. Place the machine on a firm, flat surface.

1.2.2 Safety stickers and warning signs

	<p><i>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.</i></p>
	<p><i>Replace any loose, illegible or missing stickers.</i></p>

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

	<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>	<p>1</p>
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	<p><u>Danger:</u> <i>Always keep at a safe distance from the machine!</i></p>	<p>2</p>
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1.2.3 Placement of the safety stickers on the machine

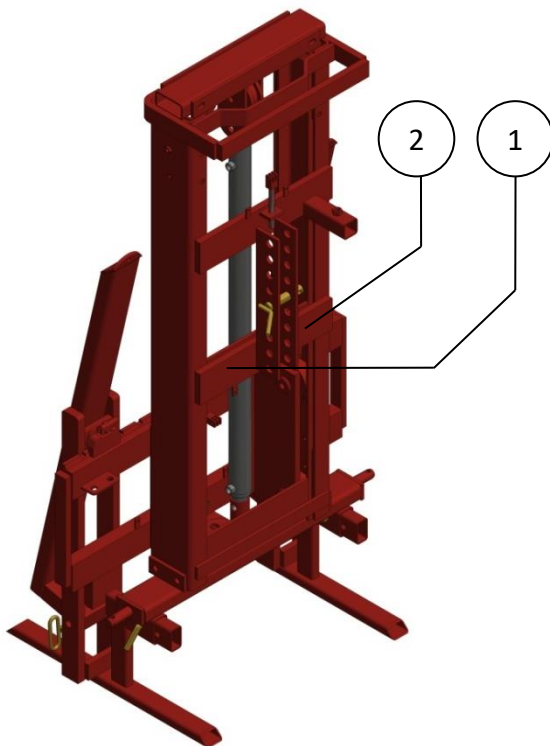


Figure 1.2.1-Location of safety stickers for HM

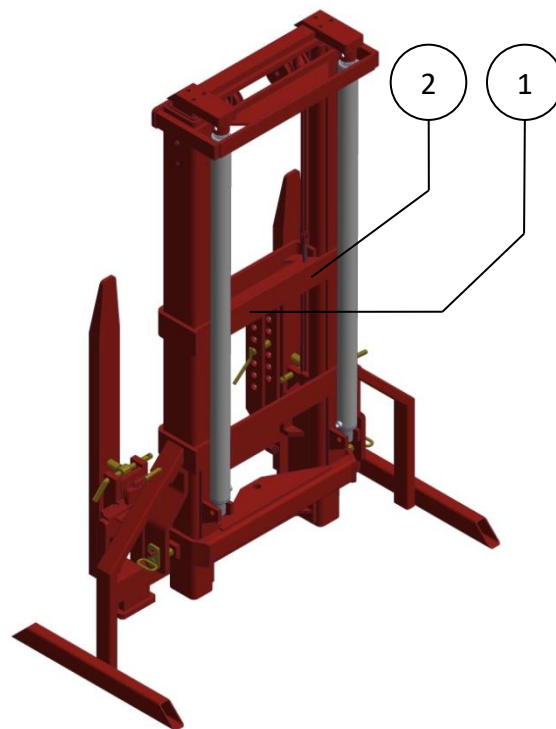


Figure 1.2.2-Location of safety stickers for HMD

1.3 Purpose of use

The WIFO HM/HMD lifting masts are only suitable for lifting boxes, pallets and bales (in combination with a WIFO bale clamp). The lifting masts are available for use on a tractor with a standard cat. II three-point hitch.



ATTENTION:

The lifting capacity of the tractor must exceed the total mass of the lifting mast, the box / pallet and its load. The tractor must be equipped with a double action hydraulic connection on the telescopic boom.

Do not use the HM/HMD lifting mast for carrying people under any circumstances!

1.4 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!

1.5 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	HM 200/1000	HM 240/1000	HM 280/1000
Lifting height	2000 mm	2400 mm	2800 mm
Lifting capacity	1000 kg	1000 kg	1000 kg
Clearance height	1800 mm	2000 mm	2200 mm
No. of cylinders	1	1	1
No. of chains	1	1	1
Weight	370 kg	385 kg	400 kg

Table 2.1.1-Types of WIFO lifting masts with a lifting capacity up to 1000 kg

Type	HM 200/1600	HM 240/1600	HM 280/1600
Lifting height	2000 mm	2400 mm	2800 mm
Lifting capacity	1600 kg	1600 kg	1600 kg
Clearance height	1800 mm	2000 mm	2200 mm
No. of cylinders	1	1	1
No. of chains	1	1	1
Weight	380 kg	395 kg	410 kg

Table 2.1.2- Types of WIFO lifting masts with a lifting capacity up to 1600 kg

Type	HMD 200/1600	HMD 240/1600	HMD 280/1600
Lifting height	2000 mm	2400 mm	2800 mm
Lifting capacity	1600 kg	1600 kg	1600 kg
Clearance height	1800 mm	2000 mm	2200 mm
No. of cylinders	2	2	2
No. of chains	1	1	1
Weight	400 kg	425 kg	450 kg

Table 2.1.3- Types of WIFO lifting masts with a lifting capacity up to 1600 kg

Type	HMD 240/2000	HMD 280/2000
H Lifting height	2400 mm	2800 mm
Lifting capacity	2000 kg	2000 kg
Clearance height	2000 mm	2200 mm
No. of cylinders	2	2
No. of chains	2	2
Weight	615 kg	635 kg

Table 2.1.4- Types of WIFO lifting masts with a lifting capacity up to 2000 kg

Type	HMD 240/2500	HMD 280/2500	HMD 340/2500	HMD 400/2500
Lifting height	2400 mm	2800 mm	3400 mm	4000 mm
Lifting capacity	2500 kg	2500 kg	2500 kg	2500 kg
Clearance height	2000 mm	2200 mm	2500 mm	2800 mm
No. of cylinders	2	2	2	2
No. of chains	2	2	2	2
Weight	625 kg	645 kg	680 kg	710 kg

Table 2.1.5- Types of WIFO lifting masts with a lifting capacity up to 2500 kg

The lifting capacity has been calculated at 18 mpa (180 Bar) working pressure.

The vehicle clearance height has been calculated with the drawbars 300 mm of the ground.

The weight of the lifting mast with sideshift is 27kg more.

Operation pressure hydraulics	Max. 18 Mpa (180 Bar)
Frame width	525 mm
Fork carriage width	1020 mm
Fork length	1100 mm
Frontal extension length	(Distance from center lower hitch pin to the front of the upright leg) 220 mm without sideshift/160 mm with sideshift
Attachment	The tractor must be equipped with a standard Category II three-point hitch

Table 2.1.6-General data HM/HMD lifting masts

Equipment:

- Folding and width adjustable forks
- Towbar (Maximum towing load 2000 kg horizontal, vertical 400 kg)
- FEM II fork carriage on all models >2000kg capacity.

Options:

- With/without Sideshift
- With/without hydraulic top bar/tilt Cylinder
- With/without double acting hydraulic connection on the fork carriage
- With/without valve block
- With/without FEM II fork carriage on models till 1600 kg

2.2 HM

2.2.1 Parts list

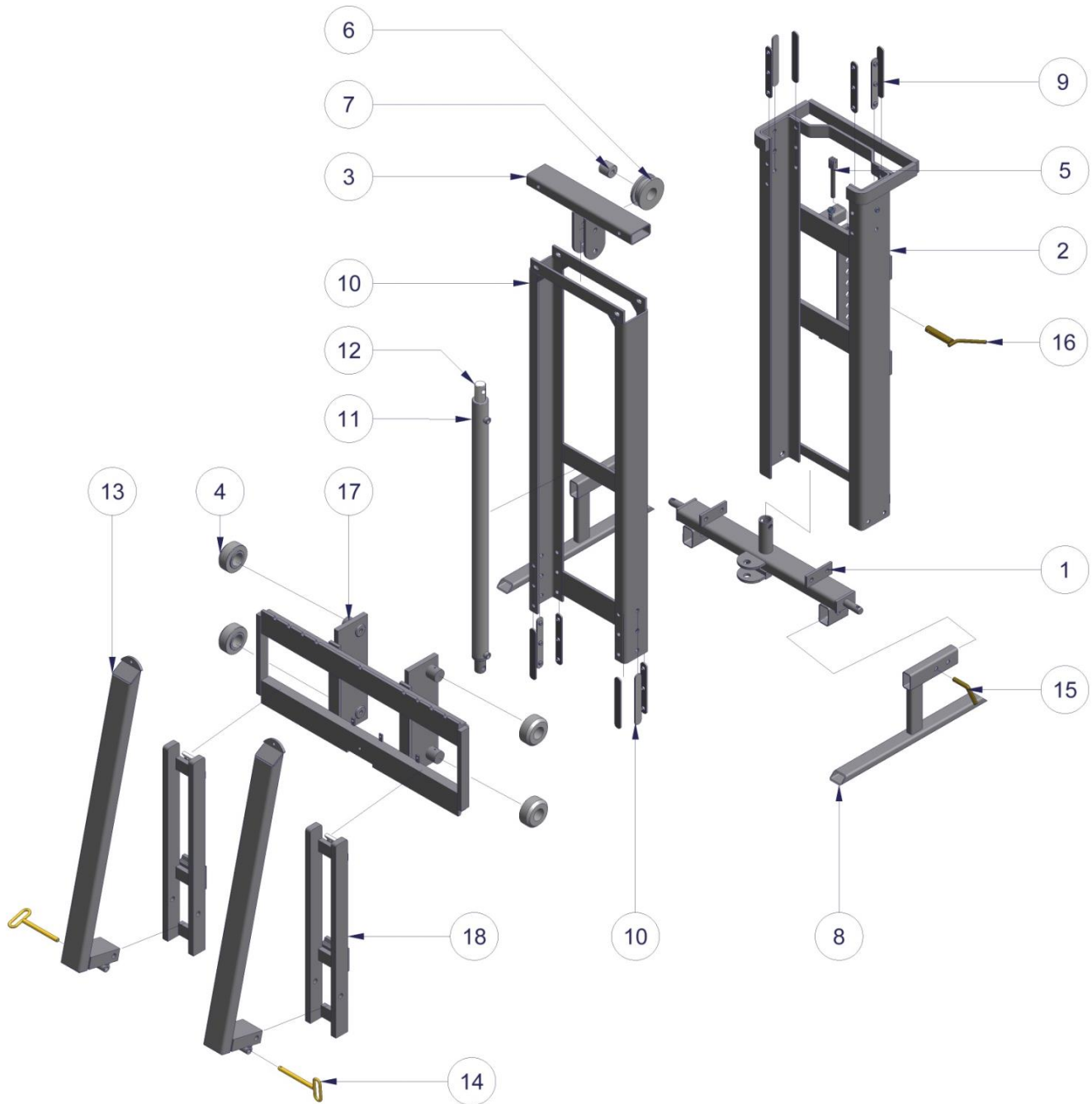


Figure 2.2.1- Exploded assembly drawing for the HM Lifting mast

Number	Description
1	Lower beam
2	Outer frame
3	Top beam
4	Trolley
5	Chain tightener
6	Chain roll
7	Chain roll tube
8	Support leg
9	Guiding plate
10	Inner frame
11	Cylinder tube
12	Plug bottom cylinder
13	Upright fork
14	Locking pin for the upright fork
15	Support leg pin
16	Top link pin cat. II
17	Fork carriage
18	Upright leg (1000-1600 kg)

Table 2.2.1-Parts list for the HM lifting mast

2.3 HMD

2.3.1 Parts List

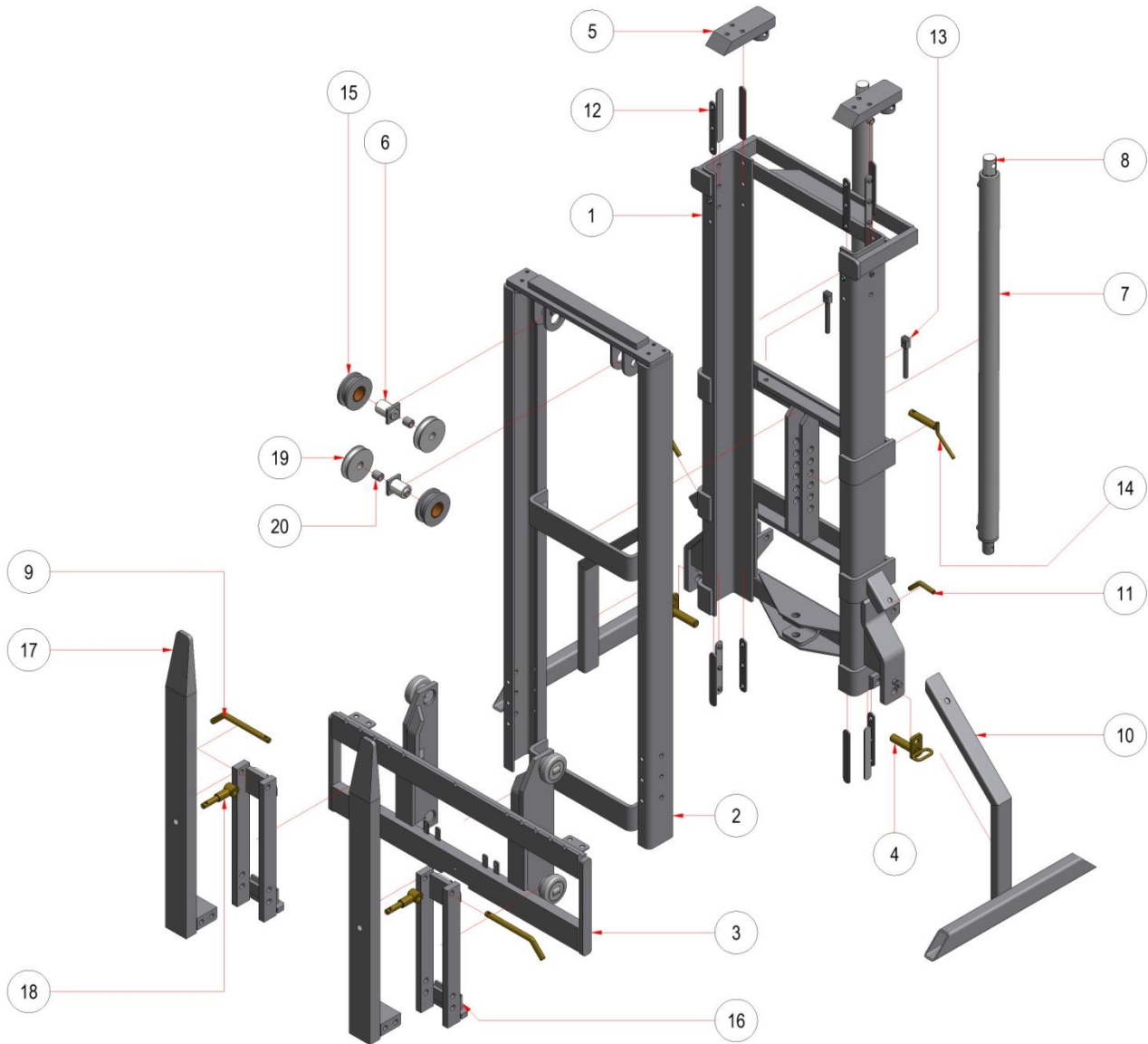


Figure 2.3.1-Exploded assembly drawing for the HMD lifting mast

Number	description
1	Outer frame
2	Inner frame
3	Fork carriage
4	Drawbar pen
5	Cylinder mounting plate
6	Chain rolling as
7	Cylinder tube
8	Piston-rod DW 60-50-1400
9	Locking pin with handle
10	Support leg
11	Pen support leg
12	Guiding plate
13	Chain tightener
14	Top link pin cat. II
15	Steel chain roll
16	Upright leg
17	Upright fork
18	Locking pin fork
19	Hydraulic hose roll
20	Bush for hose roll

Table 2.3.1-Parts list for the HMD lifting mast

2.3.2 Commissioning of a HM/HMD lifting mast

1. Make sure that the drawbars of the three-point hitch of the tractor are at the same height. Connect the lifting mast to the category II three-point hitch of the tractor. Use proper spring clips. Adjust the topline in such a way that the forks of the fork-lift mast are in a horizontal position. (See using a tilt cylinder / hydraulic top link "accessories") The lateral movement of the mast in the linkage should be minimal. This is set with the stabilizers of the linkage.
2. In case of a fork lift mast with a lifting height of 2 meters or more, it is a requirement by law to provide the tractor-linkage with a blocking device in order to prevent tipping over of the fork lift mast.
3. Connect the hydraulic hoses. 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.
4. Subsequently check that the hydraulic hoses can move freely and check that the system is not leaking oil.
5. Remove the support legs.

De WIFO lifting mast is now ready to be used.

2.4 Accessories

2.4.1 Sideshift

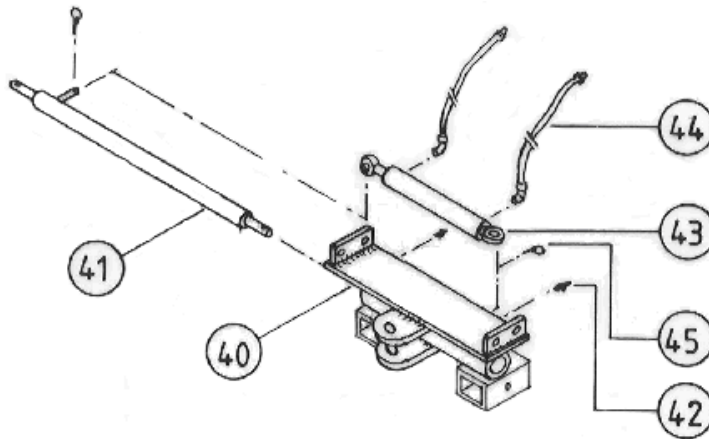


Figure 2.4.1-Exploded assembly drawing for the sideshift

Purpose of use:

The lifting mast can be equipped with a sideshift to move the load from side to side. The tractor must be equipped with an extra double action hydraulic installation or operation must be done via an extra valve block. See also chapter 2.4.3.

Commissioning:

Tilt the fork lift mast and place the lift with the moving frame onto a level and firm surface in such a way that the lower beam is within easy reach. Use suitable lifting equipment (minimum lifting capacity 500kg). Loosen the cylinder bolt(s) and provide sufficient support for the cylinder. Loosen the bolts and remove the lower beam. Fasten the ground plate for the sideshift (no. 40) with the bolts. Take care that the sideshift cylinder ends up at the tractor side of the fork lift mast. Fasten the lifting cylinder(s) again with the cylinder bolts and tighten them securely.

Place the lifting mast back on the tractor. Connect the hydraulic hoses. It is imperative here that the shortcuts are clean so that no dirt enters the hydraulic system of the machine.

Manual:

Use the sideshift to keep the load as much as possible in the centre of the tractor. Take care that the hydraulic hoses cannot become entangled. Take care that the operating handles for shifting sideways cannot become mutually entangled with other operating handles in order to prevent unintentional operating.

2.4.2 Hydraulic connections on the cart

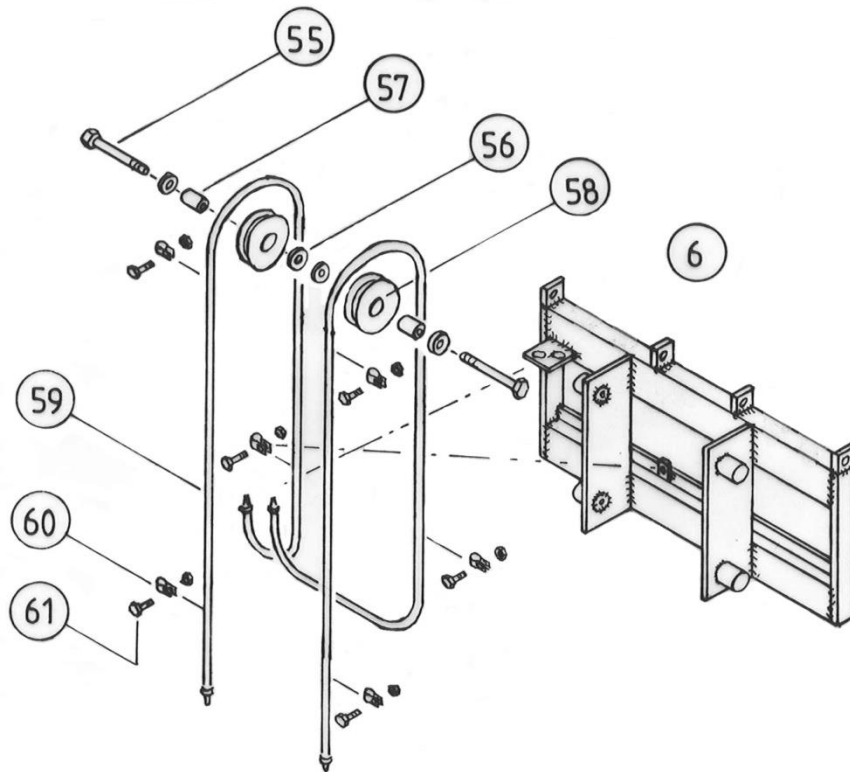


Figure 2.4.2-Exploded assembly drawing for hydraulic connection on the cart

Purpose of use:

The fork lift mast can be equipped with a hydraulic connection to the fork carriage to allow the connection of ancillary hydraulic cylinders or hydraulic motors to the fork carriage. The tractor must be equipped with an extra double action hydraulic installation or operation must be done via an extra valve block. See also chapter 2.4.3.

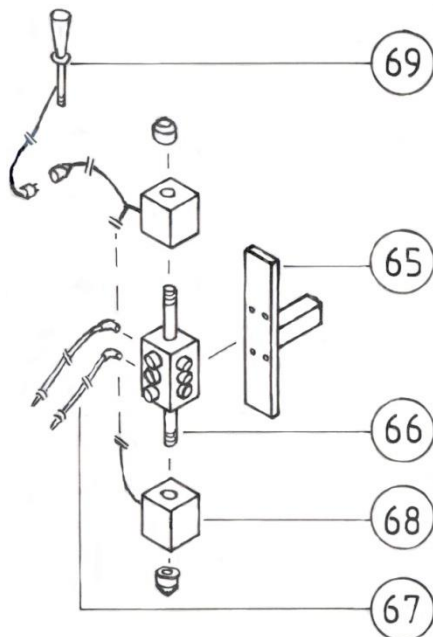
Commissioning:

Make sure the mast and the fork carriage is in the lowest position. Loosen the chain (s) by slightly turning the nuts on the chain tightener. Remove the bolt(s) in the hose roll and replace this (these) by M16x120 bolt(s) which fasten the hose roll and the bushes for the hose roll at the same time. Tighten securely. Place the hoses on the roll. Mount the hydraulic connectors to the mounting plate on the fork carriage. Secure the hoses to the forak carriage with hose clamps. Don't tighten the hoses too tight. Connect the hoses to a double acting hydraulic connection. It is imperative here that the shortcuts are clean so that no dirt enters the hydraulic system of the machine.

Manual:

Take care that the hydraulic hoses cannot become entangled. Take care that the operating handles cannot become mutually entangled with other operating handles in order to prevent unintentional operating.

2.4.3 Valve block



P1/P2: On-/Of drain
 T/O: Lifting cylinder
 C1/C2: Tilting cylinder
 C3/C4: Sideshift/hydr. connection

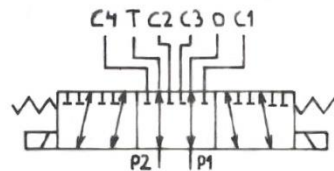


Figure 2.4.3-Exploded assembly drawing of the Valve block

Purpose of use:

The lifting mast can be equipped with an additional valve block so that the additional hydraulic function can be centrally controlled and only two hydraulic connections have to be connected or disconnected in attaching or taking off the fork lift mast. Connect lever (No. 69) on a double working valve of the tractor.

Commissioning:

Place the valve support (No. 65) in the tube provided on the outer frame. Connect the hydraulic hoses for the various functions to the valves in pairs. Tighten the connections and swivels securely. Connect the inlet and outlet hoses of valve block. Connect the inlet and outlet hoses of the valve block, taking care to use the left hose (as seen in the driving direction) of the valve block as the pressure duct. It is imperative here that the shortcuts are clean so that no dirt enters the hydraulic system of the machine.

When using an electro-hydraulic valve the switch should be mounted in such a position that the tractor driver can access it easily from its operating position and make sure that the handle can't be confused with any other controls to prevent unintentional operating.

Take care of the correct voltage of the tractor. The coil (no. 68) is only suitable for 12 volt. Connect a 2-wire cable according to the diagram, consider adding an indicator light, fuse and / or socket on the circuit. Note: if the valve block is placed in the tractor all hydraulic hoses factory performed are one meter longer than specified in the parts list.

Manual:

Take care that the hydraulic hoses cannot become entangled. Take care that the operating handles cannot become mutually entangled with other operating handles in order to prevent unintentional operating.

2.4.4 Tilting cylinder/hydraulic top link

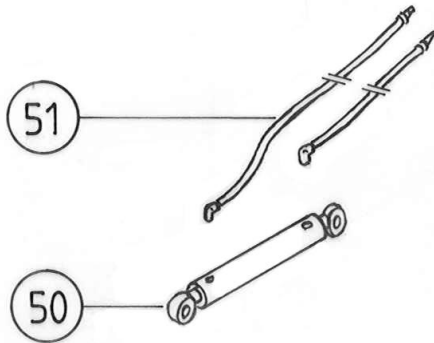


Figure 2.4.4-Exploded assembly drawing of the tilting/lifting cylinder

Use of purpose:

The fork lift mast can be equipped with a tilting cylinder/hydraulic top link to facilitate leveling of the forks. The tractor must be equipped with an extra double action hydraulic installation or operation must be done via an extra valve block. See also chapter 2.4.3.

Commissioning:

Attach the tilting cylinder/hydraulic top link by means of the top pin and the securing clip 9x11. Connect the hydraulic hoses. It is imperative here that the shortcuts are clean so that no dirt enters the hydraulic system of the machine.

Manual:


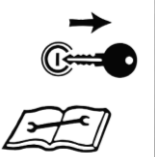
Keep the load near the tractor during transportation, with the aid of the tilting cylinder/hydraulic top link. When loading and unloading the forks keep them as flat as possible using the tilt cylinder/hydraulic top link. Take care that while operating the fork lift mast the fork lift mast cannot touch the tractor. Take care that the hydraulic hoses cannot become entangled. Take care that the operating handles for controlling the tilt cylinder/hydraulic top link cannot become mutually entangled with other operating handles in order to prevent unintentional operating.

2.5 Spare parts

Type	Attachments	Part Number
HMD	Chain L1460 for HM(D)-200	409022
	Chain L1580 for HM(D)-240	409023
	Chain L1770 for HM(D)-280	409024
	Chain L2070 for HM(D)-340	409025
	Chain L2350 for HM(D)-400	409026
	Chain L1460 for HM(D)-200	409022
	Chain L1580 for HM(D)-240	409023
	Chain L1770 for HM(D)-280	409024
	Chain L2070 for HM(D)-340	409025
	Locking pin upright fork $\varnothing 16$ -L175	409157
	Support leg pin $\varnothing 16$ -L70	529088
	Baffle 220x30x5 current model	409009
	Plastic chain roll $\varnothing 125 \times 50$ -L45-PA/GB	4090143
	Hoses $\varnothing 125 \times 30$ -L30	409016
	Hose bush $\varnothing 30 \times 17$ -L32	409017
HMD	Roll carriage $\varnothing 110 \times 50$ -L47,5 rand 2,5-H2025	409013
HM	Roll carriage $\varnothing 110 \times 50$ -L50 rand 5.0-H1016	4090131
HM/HMD	Carriage roll bearings $\varnothing 118$ -L31 (from 2011)	4090132

Table 2.5.1-Spare parts WIFO HM/HMD lifting masts

3. Faults and maintenance

 	<p><i>NB:</i> <i>Please read the instructions from the manual prior to any maintenance to the machine!</i> <i>Turn off the engine and remove the key from the ignition for the time maintenance on the machine is carried out!</i></p>
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Make sure the lifting mast is in the lowest position. Avoid unintentional operation of the mast by shutting down the tractor engine and remove the contact keys during maintenance. Additional measures may be taken by disconnecting the hydraulic hoses

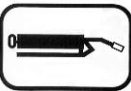
3.1 Preventive maintenance and lubrication


After the first 8 working hours:


- Check the hydraulic hoses and the connections.

After every 40 hours working hours:

- Prevent rust on the chain by lubricating it regularly with oil. If the chain is badly soiled, remove it and clean it in diesel oil. If there is any visible wear on the chain, replace it immediately. Working with it brings life-threatening risks with it.

	<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 grease based on lithium.</i></p>
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	<p><i>Regularly check the hydraulic section 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>

	<p><i>Always use original WIFO parts for replacement in order to comply with the warranty terms and conditions.</i></p>
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3.2 Troubleshooting



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

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 /Herwith 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 Änderung, 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, January 2019



Wytze Anema
(Director)