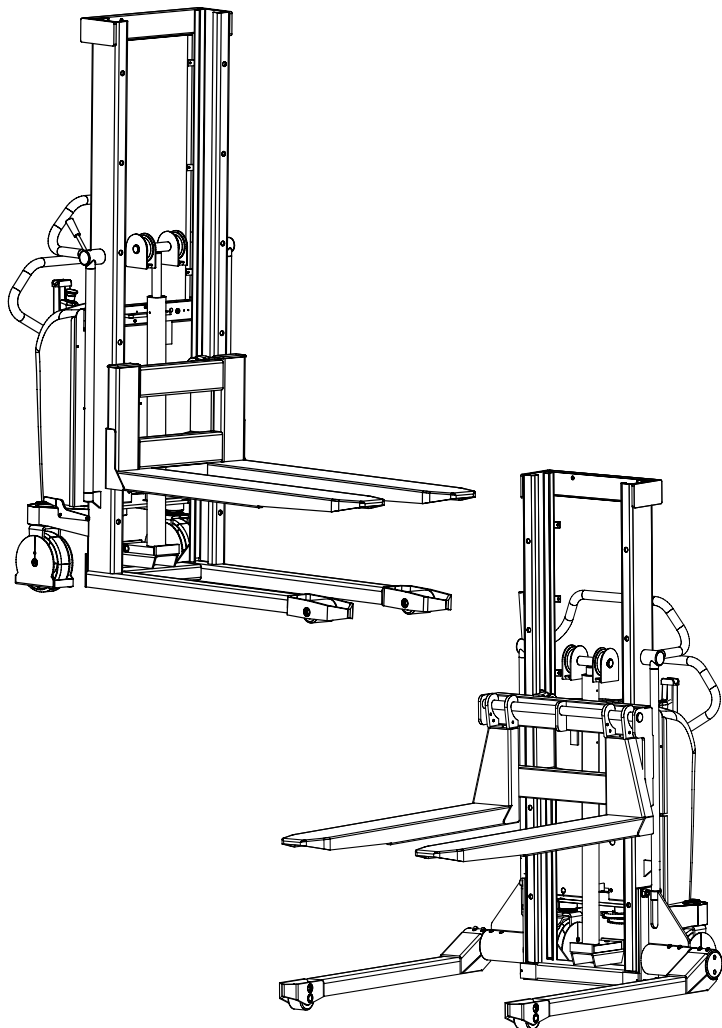


LOGIFLEX ELF / ELFS



EU DECLARATION CONFORMANCE

Manufacturer: **Logitrans A/S**
Hillerupvej 35
DK-6760 Ribe
Denmark

It is hereby declared that:

Machine: Productgroup: Logiflex

 Type: ELF/ELFS

 Year of manufacture/
 Serial No:

a) Has been manufactured in conformance with the stipulations of the:

- **COUNCIL DIRECTIVE no. 98/37/EC**
- **COUNCIL DIRECTIVE no. 89/336/ECC**

b) Has been manufactured in conformance with the stipulations
of the standard:

- **EN-1757-1**

Name: **Erling Pedersen**

Position: **Product manager**

Company: **Logitrans A/S**

Signature: 

Product type declaration of:

01.05.2002



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1.0 Before the first lift...

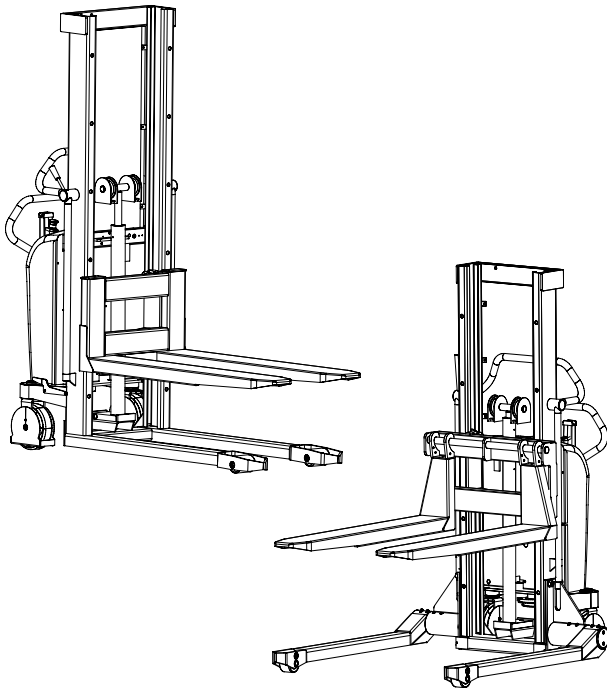
The LOGIFLEX is manufactured in accordance with safety directives.

Among the subjects dealt with in this **Instruction Manual** are:



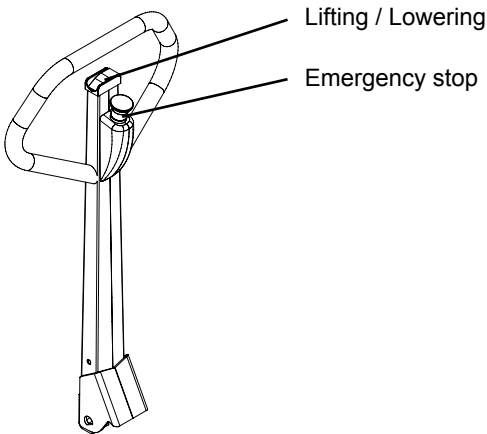
- Proper application
- Physical limitations of the product
- Risks with improper use

Therefore please read this Instruction Manual carefully!

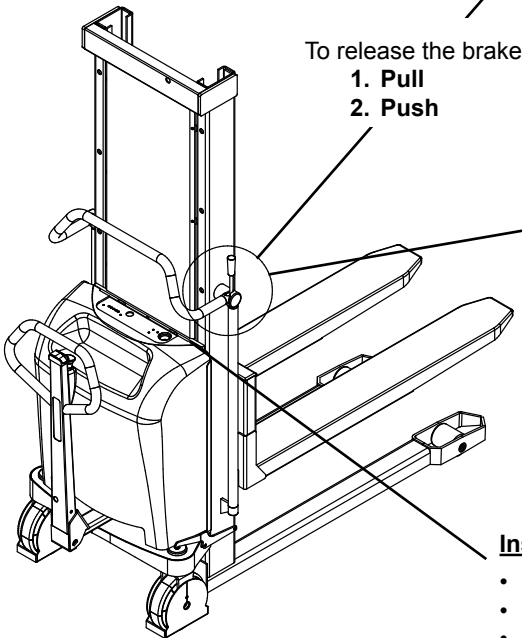
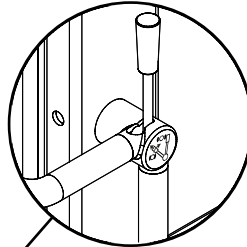




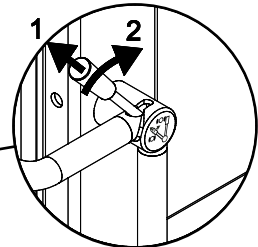
2.0 Functions and identifications



Released position



Braked position



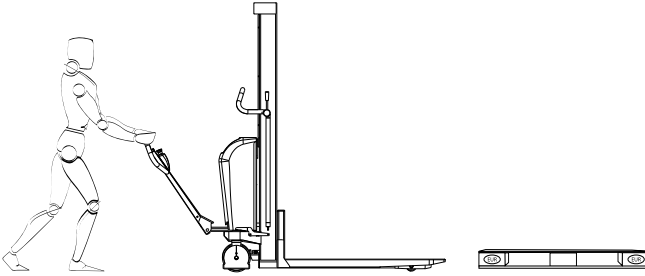
Instrument board:

- Battery indicator
- Type plate
- Charging plug (internal or external charger)
- Plug for extra equipment, 12V maximum 30 Amp



3.0 How to operate the Logiflex

3.1 Handling of pallets



For proper operation,
stand behind the handle.

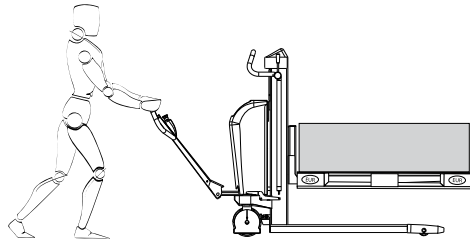
Push/pull - raise/lower

The forks will lift 190 mm
before the telescopic mast begins
to extend.

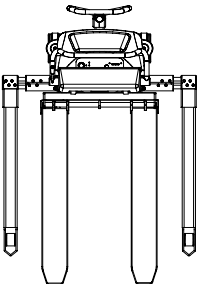
Applies to:

ELF 2050 - 3300

ELFS 2020 - 3270

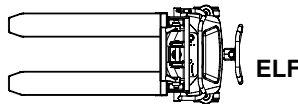
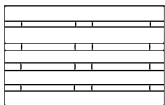


ELFS



When handling closed pallets...

- Use the straddle LOGIFLEX!





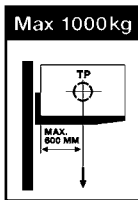
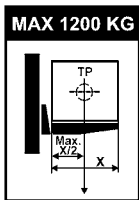
4.0 Optimum safety

4.1 Avoid overloads

The maximum load must not be exceeded. **Remember**, that the LOGIFLEX is designed for evenly distributed load, - goods on pallets etc. If the forks are point-loaded on one side, there is a risk of bending.

4.2 Avoid offset loads

The load must be evenly distributed. The maximum centre of gravity distance from the front of the fork mast (given on the truck) must not be exceeded. A greater distance reduces the level of safety and increases the risk of toppling. Goods on pallets, etc. must be properly secured, so that they cannot fall off during transport, when the truck is lifted, or when the truck must remain lifted for a time.

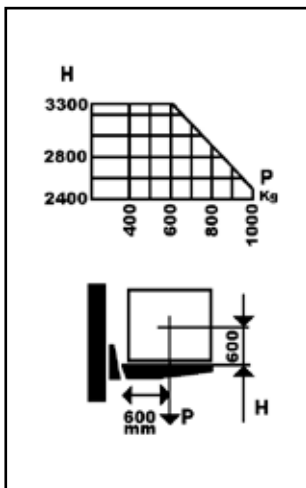


Marking

The mast lifting capacity and the corresponding centre of gravity distance are given by the pictogram on the side of the mast.

The lifting capacity of the mast is the same as the max. lifting capacity of the product.

Max. lifting capacity is set on the safety valve of the product.

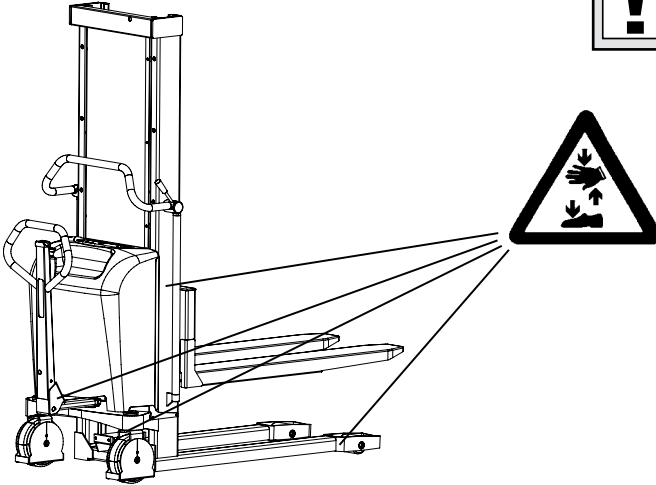


Specific to ELF 1001/3300 - with load limitation at significant lifting heights.

- The fork bracket loading is dependent on the lifting height and can be read on the load diagram.
- Load limitation at significant heights is incorporated to give *greater stability of the LOGIFLEX and operator safety.*

4.0 Optimum safety

 **ATTENTION**
Moving parts



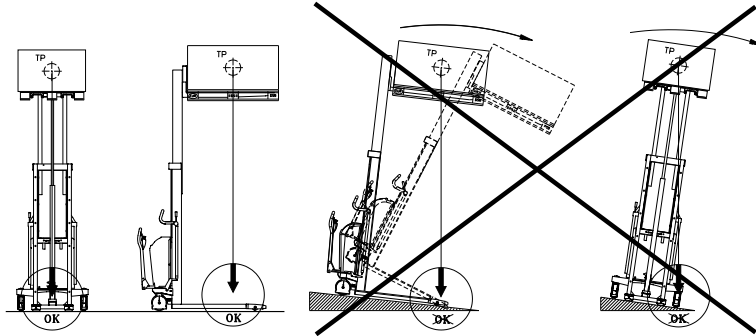
Safety regulations

- Never walk under a raised load!
- Before lowering the forks, make certain that no foreign elements can hinder the free lowering of the forks
- The LOGIFLEX is designed for use on an even and level floor
- During transport the forks shall be raised as little as possible
- Transport with raised forks should be made over the shortest possible distances and at low speed
- Check that the chains lift equally. They shall be equally tight when the forks are loaded
- Chains and chain bolts must not be damaged. Chains that have become permanently stretched (max. 2 % of original length) must be scrapped.



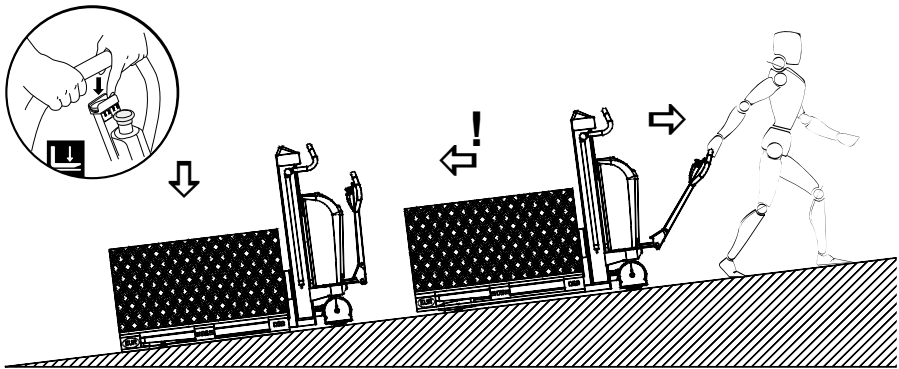
4.0 Optimum safety

4.3 Driving loaded



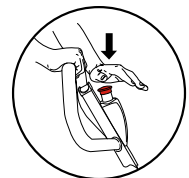
The LOGIFLEX is designed for use on even and level floor. During transport the forks shall be raised as little as possible. Transport with raised forks should be made over the shortest possible distances and at low speed.

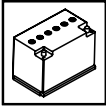
4.4 Emergency braking and Emergency stop



If it becomes necessary to use the load as a brake to prevent the LOGIFLEX from running away, activate the DOWN button quickly, until the load reaches the ground.

The product has an emergency stop. When activating the emergency stop, the main current supply is switched off. The movement of the forks stops immediately when activating the emergency stop.





5.0 There must be a current supply...

5.1 Battery specifications

The manufacturer offers 3 different battery types recommended for the electric LOGIFLEX:

	Semi-trak 986034	Semi-trak 986036	Tubular cell 986014
Voltage	12V	12V	12V
Capacity	60Ah/5h	105Ah/5h	100Ah/5h
Recommended for	Normal use		Severe daily use
Life in cycles at 80% discharge	Approx. 300 - See note 1		Approx. 1200 - See note 2
MAINTENANCE Liquid inspection	The liquid level has to be within the minimum and maximum level of the battery, otherwise distilled or demineralized water is to be added. - See note 3.		
MAINTENANCE Poles	Verdigris to be removed from poles regularly. Poles to be greased after cleaning.		
Charge condition to be measured with	Acidometre, voltmètre or battery condition tester		
Charging frequency	When needed, max once per day. - See note 1		At 80% discharged, max once per day. - See note 2
Charging voltage measured across poles during charging	15,2V		
Battery dimensions LxWxH	278x175x190	513x189x223	514x175x232
Battery weight	20 kg	40 kg	41 kg

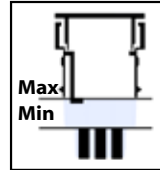
5.0 There must be a current supply...

Note 1: Battery life: 300 cycles at 80% = approx. 600 cycles at 50%.

Note 2: Battery life: 1200 cycles at 80%.
Longest battery life obtained, when the battery is charged on being 80% discharged. 1 charge = 1 cycle.

Note 3: Please note: Only fill up to the maximum liquid level on a charged battery, otherwise the liquid will overflow. See the battery instructions or contact your dealer in case of doubts.

Dry-charged batteries must be filled with battery acid 37.5% H₂SO₄ specific gravity 1.28, before they are used for the first time.



Filling in acid solution on the battery

- The battery acid is corrosive. If it should touch skin or eyes, wash with water and contact a doctor. Filling in acid into the battery should be performed in a ventilated room.



The charging of tubular cell and semi-trak batteries gives off gases that can be explosive:

- Use of naked flames near the batteries should be avoided.
- Charging should therefore be performed in a ventilated room.
- The battery cover has to be open to ensure a good ventilation of the battery.



At temperatures around the freezing point, battery capacity is reduced by 30%.

If the acid density of the battery is 1,10 and the temperature 0° C, the battery will freeze and the capacity will be 0%.

5.0 There must be a current supply...

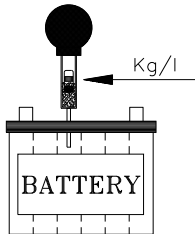
5.2 Checking the battery

- The battery is fully charged when the battery voltage and the acid density are not changed between two measurements made with an interval of two hours.
- Check at least once a week at the end of the charging that the battery has a correct acid density (1,26-1,28 kg/l at 20°C).

Note: Regular discharges to an acid density below 1,13 kg/l shorten the battery life, and the acid density must never be less than 1,10 kg/l.

Method A

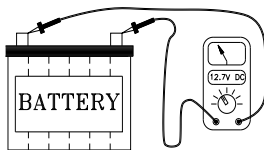
Check the acid density in the six battery cells with an acidometer.
Check each cell - max. difference between each cell 0.04 kg/l.



Density:	
1,28 kg/l	Fully charged
1,18 kg/l	50% discharged
1,13 kg/l	80% discharged

Method B

To measure the voltage, use a digital voltmeter (DC) on the battery poles. The truck must not have been in use for the previous 30 minutes.



Voltage:	
Ca. 12,70 V	Fully charged
Ca. 12,10 V	50% discharged
Ca. 11,88 V	70% discharged
Ca. 11,80 V	80% discharged

5.0 There must be a current supply...

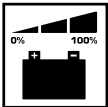
5.3 Battery charging



If instructions accompany the battery, these are to be followed.

- Charging must be performed with a charger, suitable for the battery type and correctly set with the charging voltage for the battery type, see point 5.1. For connection and operation, see instructions accompanying the charger.
- **NOTE!** Maintenance-free batteries require a charger, which is intended for maintenance-free batteries.
- Charging simultaneously with truck operation is not recommended.
- Longest battery life is achieved when charging when battery is:
80 % discharged (semi-trak and tubular cell)
70 % discharged (maintenance-free)
- Charging of the batteries: Max. once per day
- Semi-trak and tubular cell batteries are to be filled with distilled water after max. 14 cycles. 1 charging = 1 cycle.

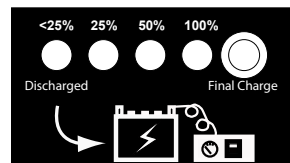
5.4 Battery indicator



The battery indicator shows the battery charge in %. The most accurate reading can be obtained when the battery has not been used for 5-10 minutes.

Red: Battery capacity less than 25 %:
Do not use the battery, otherwise it might become damaged.

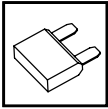
Green: Battery capacity: 50 %-100 %:
The battery is ready for use and need not be charged.
Battery capacity: 25 %:
The battery can still be used; charging is recommended.



Yellow: Charging lamp: Is alight during the last.

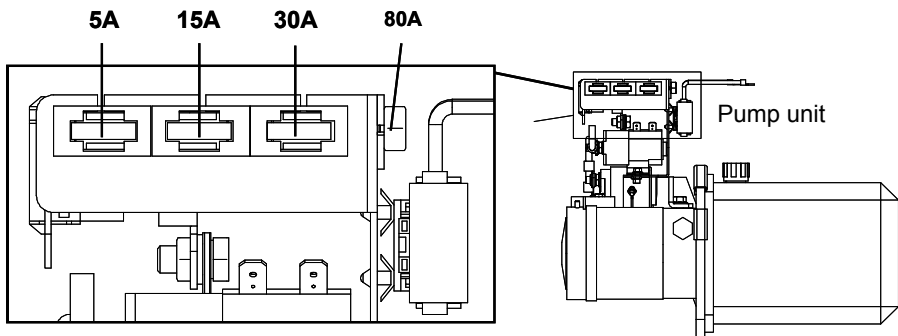
5.0 There must be a current supply...

5.5 Fuses - replacement



There are four fuses in the electrical circuit.

- 80 Amp fuse in the main supply from battery
- 5 Amp fuse in the control current circuit
- 15 Amp fuse (plug for extra equipment on the instrument board)
- 30 Amp fuse for built-in charger



Attention! Why do the fuses melt?



Do not insert a larger fuse; The fuse acts as a protector for the pump motor.

5.6 Wiring connections

Many operational disturbances are caused by bad connections in the electrical circuit. Make sure that the connections are in order.

Check connections regularly for damage at insulating caps or bad connections at plugs, etc.

Verdigris must be removed from cable plugs. Keep all screw/nut connections tight.



6.0 Long live the Logiflex

Regular inspection and the replacement of worn or defective parts in good time will prolong the life of the LOGIFLEX.

“Prevention is better than repair”, therefore ensure:

- Correct usage
- Regular cleaning
- Periodic safety and service inspection

6.1 Lubrication and hydraulic oil



Under normal operation conditions the LOGIFLEX requires no lubrication. All ball bearings are sealed and lubricated for life, and moving parts have self-lubricating bearings or are treated with grease.

The hydraulic system is filled with hydraulic oil of viscosity class ISO VG 15. An additive is added to the oil:

- Wynn's Hydraulic Systems Concentrate.

The concentrate reduces friction and wear and protects against corrosion.

Pre-mixed hydraulic oil with additive is available from the dealer. The oil is suitable for use in the temperature range -10 to +50° C. A thinner oil is recommended for temperatures lower than -10° C (if necessary, contact your dealer).

6.2 Oil change

Draining the oil:

1. Bring the unloaded forks down to the lowest position.
2. Most of the oil can be drained by loosening the hydraulic hose union and briefly activating the hydraulic pump with the switch.
3. The remaining oil can be drained from the oil tank by taking off the twelve clips on the pump and removing the tank.

Oil filling:

4. Fill oil through the filling hole on the tank.

5. Oil quantity:

ELF 920 & ELFS 890	Approx 1,5	Liter
ELF 1200 - ELF 1600 & ELFS 1170 - ELFS 1570	Approx 3,0	Liter
ELF 1910 - ELF 2850 & ELFS 1880 - ELFS 2820	Approx 4,0	Liter
ELF 3300 & ELFS 3270	Approx 4,5	Liter

6. Refit the filling cap and bleed the system (6.3).

6.0 Long live the Logiflex

6.3 The hydraulic pump

The hydraulic pump has a S3 “periodic intermittent duty” of 10 %. This means that the pump in total is allowed to operate 1 minute for a period of 10 minutes. If the pump operates more than 10%, the motor will be damaged due to superheating.

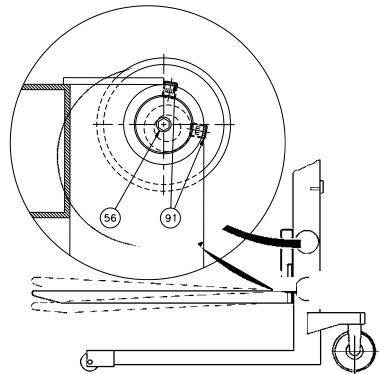
Bleeding the hydraulic system

With a load of 50-100 kg, the forks must be raised and lowered to top and bottom position 2-3 times.

6.4 Fork adjustment

Two of the rollers on the fork bracket are mounted on eccentric pins, so that they can be adjusted. The adjustable rollers are at the top.

1. Loosen screw (pos. 91) (key width 5 mm).
2. Eccentric pins (pos. 56) (key width 8 mm) can now be turned to give the necessary fork adjustment.
3. Adjustment must be made on both sides to ensure uniform loading of the rollers.



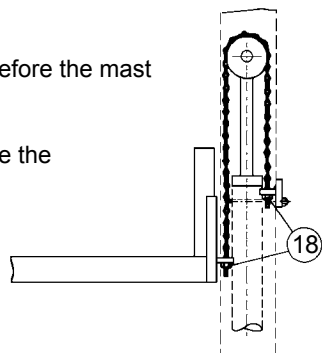
6.5 Adjustment of lifting chain

The chains shall be adjusted so that

- they lift equally
- they are equally tight
- The lifting movement has to stop in the cylinder, before the mast rolls touch the top stop.

After adjusting, please check:

- a: Fork bracket: the forks have to be placed above the wheels (adjustment, please see 6.3)
- b: Adjustable carriage: the forks are to be kept clear of the floor (adjustment, please see 6.3).

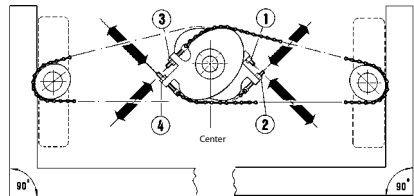


The nuts (pos. 18) are to be adjusted (nut M12, key width 19 mm).

6.0 Long live the Logiflex

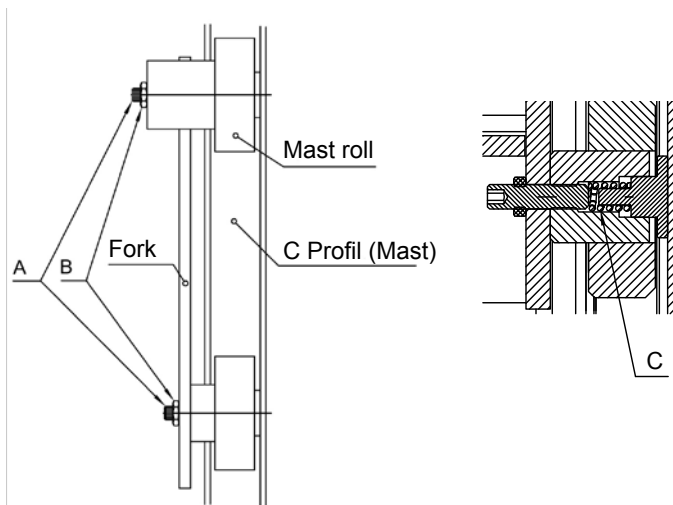
6.6 Adjustment of steering wheel chains

- Set the handle in its middle position
- Adjust the nuts (1, 2, 3 and 4) and bring the wheels into parallel.



6.7 Adjustment of side play (In the mast rolls of the right side of the fork bracket)

1. Screw (A) is loosened counter-clockwise, until resistance disappears.
2. Turn the screw clockwise, until resistance appears. The follo wing 1.5 to 2.5 turns of the screw will be a tightening of the spring (C).
3. When a larger resistance appears, make 0.25 turn counter-clockwise, and the counter nut (B) will be tightened.
4. Pump the forks to its top position, and when lowering it has to slide to the bottom. If this is not the case, loosen screw A, make c. 0.5 turn counter-clockwise and repeat point 4.



6.0 Long live the Logiflex

6.8 Cleaning



When cleaning the LOGIFLEX, do not direct the jet onto bearings and seals. Otherwise the grease will be washed out and the life of the equipment shortened.

Cleaning of the plastic screen (polycarbonate)

The screen is to be washed with slightly warm water added a neutral cleaning material, and afterwards washed with clean water. Use a soft sponge, a woollen cloth or a wash leather.

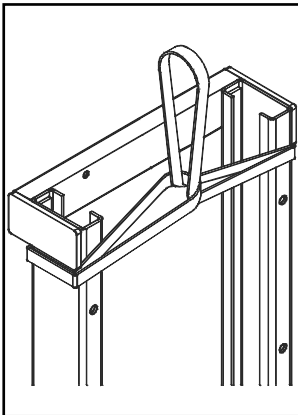


Never use sharp objects or solvent cleaners when cleaning.

6.9 Lifting procedure



When lifting the product, please use the fixing point in the top profile or a lifting line.



PLEASE NOTE:
Products with top cover are only allowed to be lifted with lifting strap.



7.0 Good service after purchase

7.1 Ordering spare parts

The correct spare parts are obtainable from your dealer.

When ordering, please state:

- Serial number of the product
- Type and width/length of the product
- Spare part no. Please find spare part no. on **www. logitrans.com**.

7.2 Warranty/Compensation

Spare parts delivered during the warranty period will be invoiced. A credit note will be sent immediately after we have received and tested the defective parts and found that the warranty conditions have been met.

7.3 Service and repair

You should be able to make adjustments and perform minor repairs on the spot. However, major repairs should be left to the dealer who has well-trained personnel and the necessary special tools. The manufacturer has an exchange system for pumps/cylinders. These are renovated and delivered with warranty.

7.4 Warranty

The warranty covers material and assembly defects which, subject to inspection by us or our representative, are deemed to be faults or deficiencies that prevent normal use of the parts concerned. Such affected parts shall be sent to your Logitrans dealer carriage paid within the warranty period in force at the time in question, together with a copy of the documentation for the service performed (B284 - see the back page). The warranty does not cover normal wear and adjustments. The warranty period is based on singleshift working.

The warranty shall no longer apply if

- the product has been used incorrectly,
- the product is used in environments for which it was not designed,
- the product has been overloaded,
- replacements of parts have been made incorrectly or original parts have not been used and consequential damages have arisen,
- if the product is changed or accessories, not being approved by Logitrans, are used.
- it can not be proved that a qualified technician has performed the service check according to the requirements stated in the instruction manual (see the back page).

7.5 Liability exemption

The manufacturer accepts no responsibility for personal injury or material damage arising from deficiencies, defects or improper usage. The manufacturer accepts no responsibility for lost earnings, operating losses, lost time, lost profits or similar indirect losses incurred by the purchaser or a third party.



8.0 Fault location key

When the LOGIFLEX is used every day, adjustments and the replacement of worn parts might be necessary.

If a fault appears during daily operation of the LOGIFLEX, first check:

- Oil supply
- Electricity supply
- Condition of leads and fuses

If faults cannot be traced to these sources, contact your dealer, but...



**Before asking the dealer for assistance...
...try the fault location key!**

Symptoms and observations

- A** Pump does not run when the UP button is pressed _____
- B** Truck does not lift when the UP button is pressed _____
- C** Truck does not lift to max. height _____
- D** Forks fall after being raised _____
- E** Forks do not fall when DOWN button is pressed _____
- F** Forks cannot be lowered fully _____
- G** Truck unable to lift the max. load _____
- H** Truck lifts slowly _____
- I** Forks do not lift horizontally _____
- J** Steering wheel does not drive evenly _____

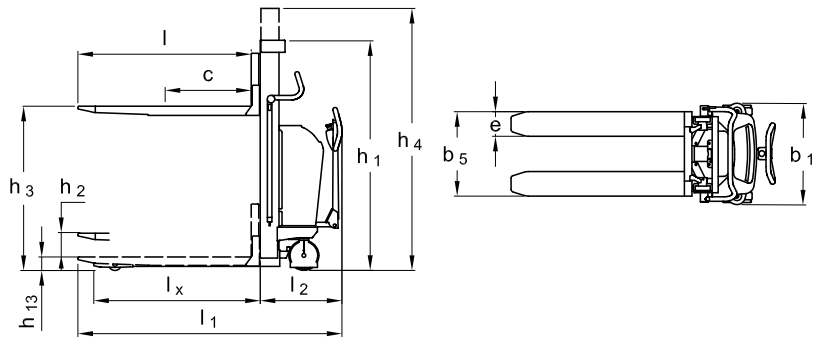
Cause

Mending

	Oil deficiency	See point 6.1/6.2
	Battery discharged	See point 5.3
	Fuse blown 5Amp or 80Amp	See point 5.5
	Cables defective	See point 5.6
	Max. load exceeded	See point 4.1
	Air in hydraulic system	See point 6.3
	Pressure relief valve incorrectly adjusted	Contact the dealer
	Leakage in hydraulic system Visible oil leakage	Contact the dealer
	Fork bracket needs adjustment	See point 6.4/6.5/6.7
	Solenoid or check valve defectiv	Contact the dealer
	Defective valves in pump	Contact the dealer
	Steering wheel out of adjustment	See point 6.5
	Defective solenoid valve	Contact the dealer
	<p>If the problem cannot be solved by using the fault location key...</p> <p>...please contact your dealer!</p>	
A	● ● ●	
B	● ● ● ● ●	
C	●	
D		● ●
E	● ● ●	●
F		●
G		●
H	●	●
I		●
J		●



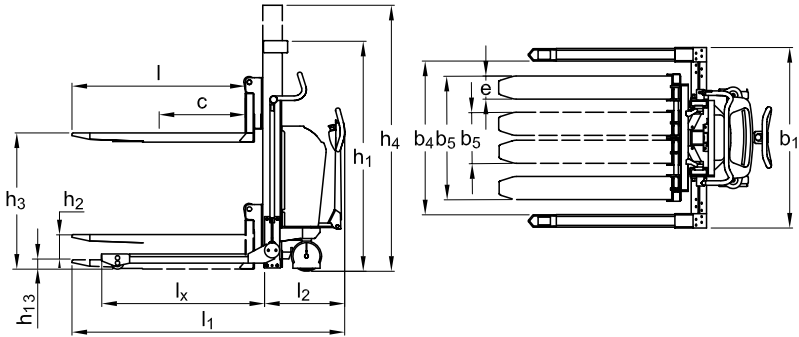
9.0 Technical data



Product (measured in mm)	ELF	ELF	ELF	ELF	ELF	ELF	ELF	ELF	ELF	
Capacity in kg	1000/1200	1000/1200	1000/1200	1000/1200	1000	1000	1000	1000	1000*	
Lifting height	h ₃	920	1200	1400	1600	1910	2050	2450	2850	
Fork length	l	600**, 800**, 1150, 1520***								
Overall height	h ₁	1330	1530	1730	1930	2240	1530	1730	1930	
Overall width	b ₁	680							932	
Fork span	b ₅	480****, 560, 680			560, 680					
Length without forks	l ₂	590								
Overall length with 1150 forks	l ₁	1800					1810			
Overall height	h ₄	Without telescopic mast					2490	2890	3290	3740
Lowered height	h ₁₃	85	90							
Load centre	c	l/2								
Fork width	e	163								
Run-in length	l _x	1100 with 1150 mm forks								
Gangway (pallet: 1200 x 800)	A _{st}	2250*****			2290*****					
Free lift	h ₂						190			
Turning angle of the wheels		180°								
Pump motor		1,1 kW 12 V								
Lifting speed		With/without load: 0,05/0,07 m/s								
Lowering speed with/without load		0,12 m/s / 0,07 m/s					0,12 m/s / 0,08 m/s			
Weight in kg (without battery): Capacity 1000/1200 kg		222	241	247	251	259	302	309	322	371

- * Load reduction at large lifting height.
- ** Maximum lifting height 1600 mm with 600 mm forks, maximum lifting height 2450 mm with 800 mm forks.
- *** Reduced capacity 750 kg. Not available for 1200 kg models.
- **** Only for 1000 kg models.
- ***** Tests show that 1700 mm are enough.

9.0 Technical data



Product (measured in mm)	ELFS	ELFS	ELFS	ELFS	ELFS	ELFS	ELFS	ELFS	ELFS	
Capacity in kg	1000/1200	1000/1200	1000/1200	1000/1200	1000	1000	1000	1000	1000	
Lifting height with wrap-over forks	h_3	870	1170	1370	1570	1880	2020	2420	2820	
Fork length	l	600*, 800*, 1067, 1150, 1520**								
Overall height	h_1	1330	1530	1730	1930	2240	1530	1730	1930	
Overall width	b_1	166 + b_4								
Fork span min./max.	b_5	Wrap-over: 350/800***, chisel and bar: 230/680***								
Length without forks	l_2	590								
Overall length with 1150 forks	l_1	1855				1865				
Overall height	h_4	Without telescopic mast					2490	2890	3290	3740
Lowered height, forks	h_{13}	Chisel: 45, bar: 65, wrap-over: 65								
Load centre	c	$l/2$								
Width between legs:	b_4	850 - 942, 942 - 1124, 1124 - 1306, 1240-1422****								
Cap. 1000 kg		850 - 942, 942 - 1124								
Cap. 1200 kg										
Fork width	e	Bar: 100, chisel: 100, wrap-over: 163								
Run-in length	l_x	1080 with 1150 and 1067 forks								
Gangway	A_{St}	2290 (pallet: 1200 x 800)*****								
Free lift	h_2							190		
Turning angle of wheels		180°								
Pump motor		1,1 kW 12 V								
Lifting speed		With/without load: 0,05/0,07 m/s								
Lowering speed with/without load		0,12 m/s / 0,07 m/s					0,12 m/s / 0,08 m/s			
Weight in kg without battery: Cap. 1000/1200 kg		282	301	307	311	319	362	369	378	427

* Maximum lifting height 1570 mm with 600 mm forks, maximum lifting height 2420 with 800 mm forks.

** Reduced capacity 750 kg. Not available for 1200 kg models.

*** 1200 kg models are only available with chisel forks.

**** Width between straddle legs of more than 1306 mm: Max. capacity 800 kg. Fork length of 1520 mm is not recommended.

***** Tests show that 1700 mm is enough - depends on width between straddle legs.

Periodic service check

Service check is required once each year.

The service check is to be performed on the basis of form no. B280 and proved on form no. B284. Forms and instructions for the service check are available at your dealer.

Periodic safety inspection

Safety inspection should be performed by the dealer or other qualified persons at least once each year, unless local regulations state otherwise.

The safety inspection to be performed on the basis of form no. B278 and proved on form no. B284. Forms and instructions for the safety inspection are available at your dealer.

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