Sörensen
Slidelift

X1 TECHNOLOGY

Installation manual

X1UAM 1500
X1UAM 2000

Ausgabe 01/2004
20 906 254

Sörensen

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TÜV NORD CERT GmbH DIN EN ISO 9001 Freiwillige Zertifizierung

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Introduction

These assembly instructions content all informations necessary to assemble and adapt the sliding tail lift to vehicles. Should there be any doubts on the assembly on a certain type of vehicle, please contact us. We will provide the necessary information.

Should the tail lift be modified, or if it is necessary to deviate from these instructions, a written authorisation must be demanded from Sörensen Hydraulik GmbH.

Unauthorized modifications and deviations from these instructions can lead to early failure or disturbance of the device, and can jeopardize the safety of the operator.

The warranty of this tail lift is canceled if unauthorized modifications or deviations from the instructions are performed.

The vehicle manufacturer guidelines are to be followed at all times

Transport damages

The transport company is responsible for transport damages. The merchandise has to be inspected for damages right after unloading. If damages are seen, these have to be written on the bill of lading, for claiming purposes. The costs can only be settled between Sörensen Hydraulik GmbH and its forwarder.

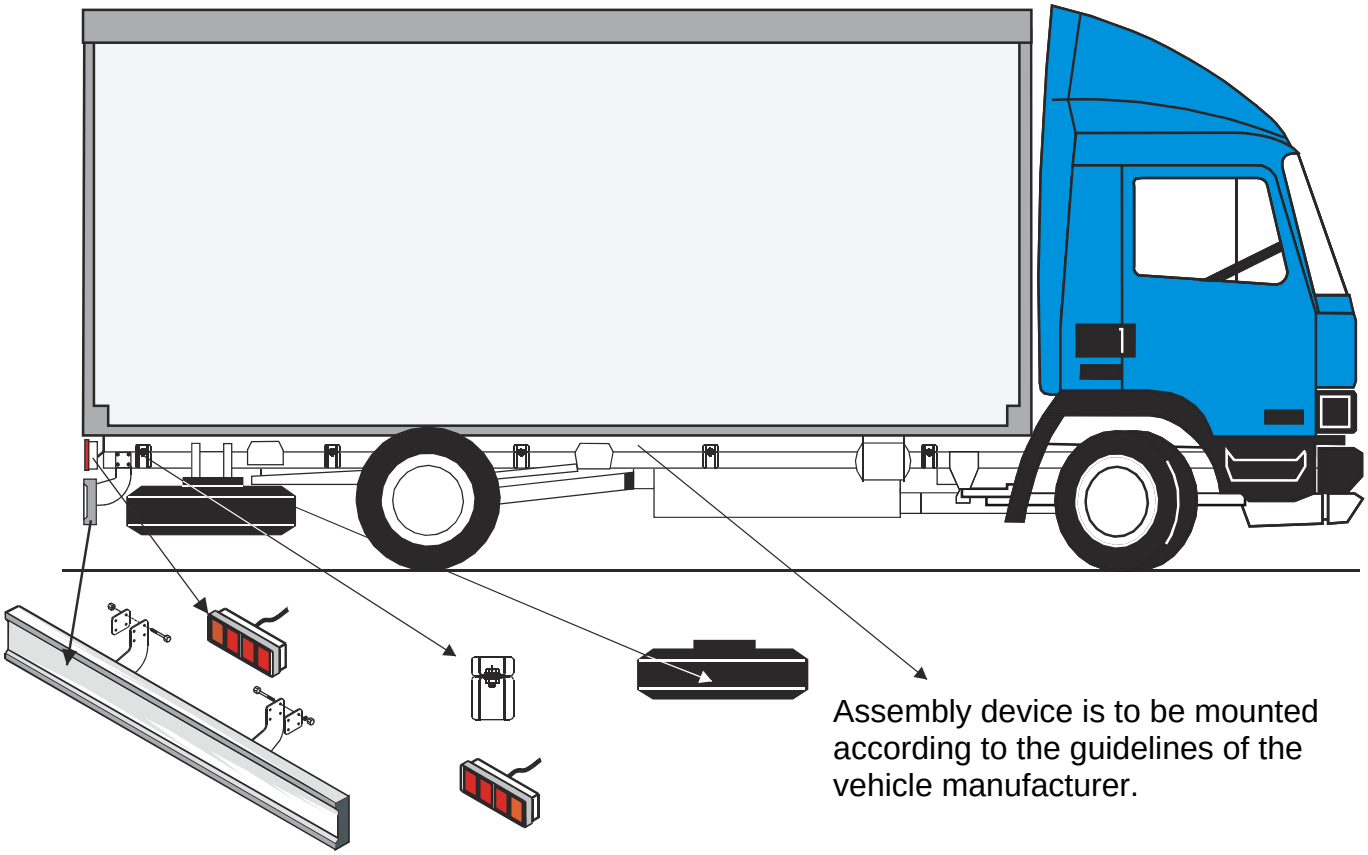
Precautions during assembly

Please disconnect the vehicle battery bevore any assembly operation. The vehicle has to be secured against any unwanted change of location. The connections of ABS and ESP must be disconnected before any welding operations. All hoses in the assembly area must be secured. Labour security regulations must be followed. Safety devices such as glasses, gloves and safety shoes must be provided and used. The safety devices of lifting equipement (cranes, forlifz trucks etc…) used for the assembly must be verified before any operation.

Assembly instructions X1UAM

Vehicle preparation

Dismantle underride bumper and rear lights. Make sure that the area for positioning the lift brackets is clear, and remove all screws, rivets, spare wheel etc… Also remove hinges and locks if necessary.



Assembly device is to be mounted according to the guidelines of the vehicle manufacturer.

The vehicle cabin must be protected by any appropriate means.

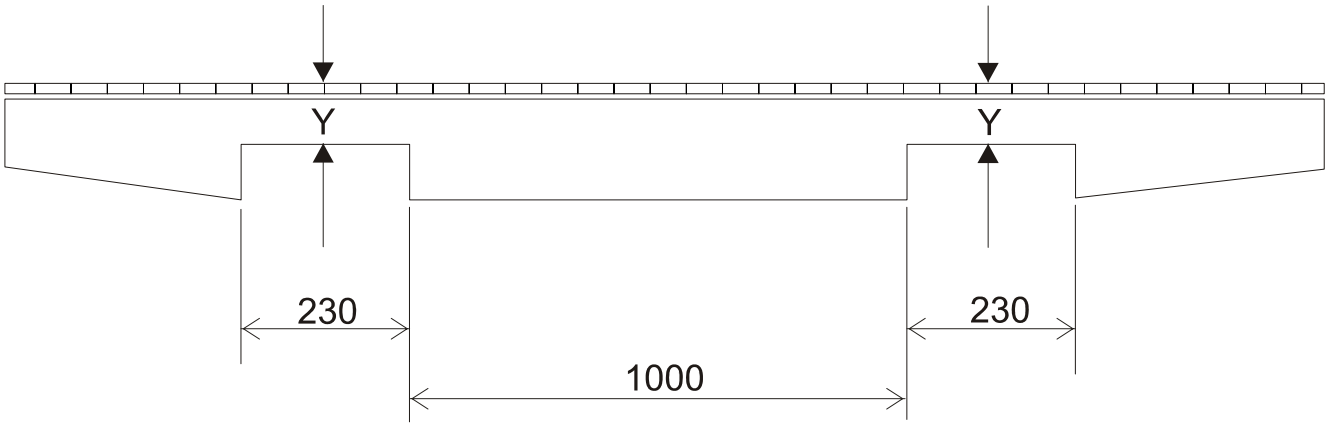
Mecanical support

Please verify with the vehicle manufacturer guidelines if the vehicle must be fitted with mechanical supports. Those delivered with the tail lift are provided with a separate assembly drawing. We do not take warranty for any damages resulting in supports delivered and assembled by a third company if those are not cleared by our technical services.

Cuttings in the rear vehicle frame

If the traverse of the rear frame should be higher than the Y measure according to the E measure, it is necessary to perform cutouts according to enclosed proposal.

Proposal for assembly of type X1UAM



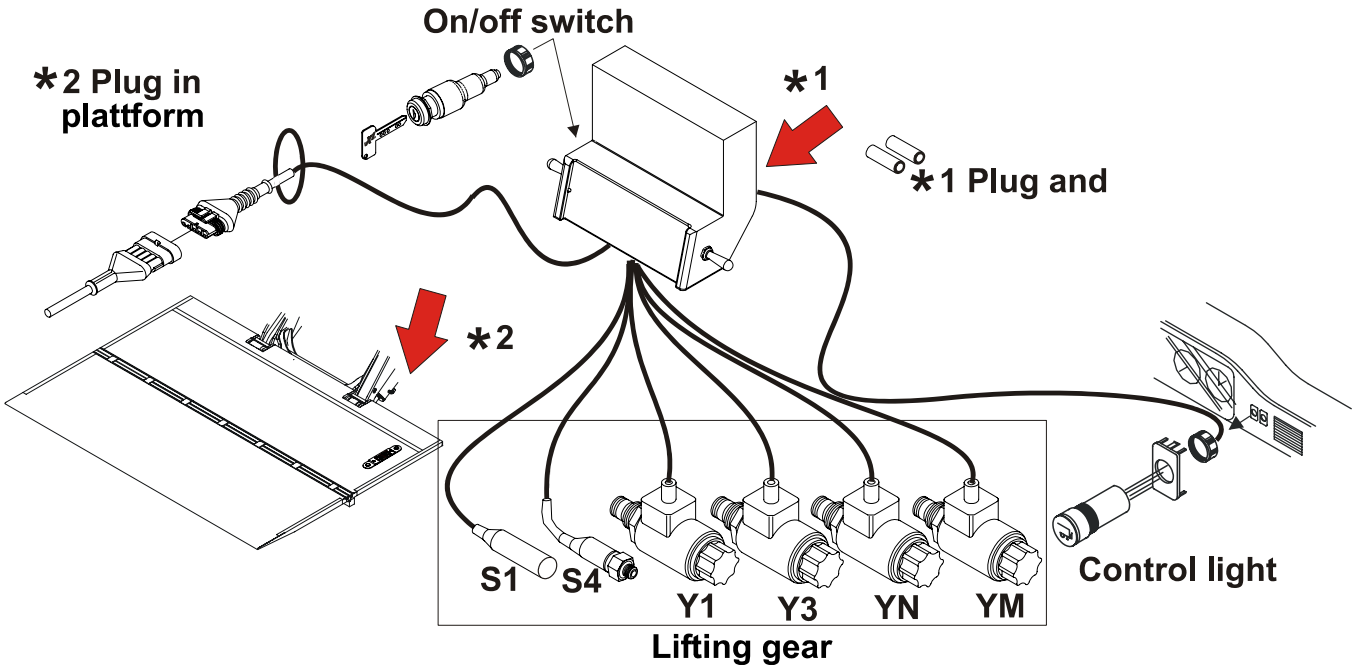
E	Y
660	220
600	203
550	188
500	175
450	162
400	150

Measure E please see on page 9 (E1)

Assembly of electrical devices

Caution !

All operations of the tail lift must only be performed if the battery cables are correctly attached to it, and if there is enough tension available. Never use a battery charger or a starting device, as this can result in damage to the tail lift motor.



For assembling the control light, please use a free 16 mm hole in the dashboard, or drill a hole. Assemble the switch in the cabin, and connect it to the cable according to enclosed drawing. Lead the cable to the control unit and plug it in.

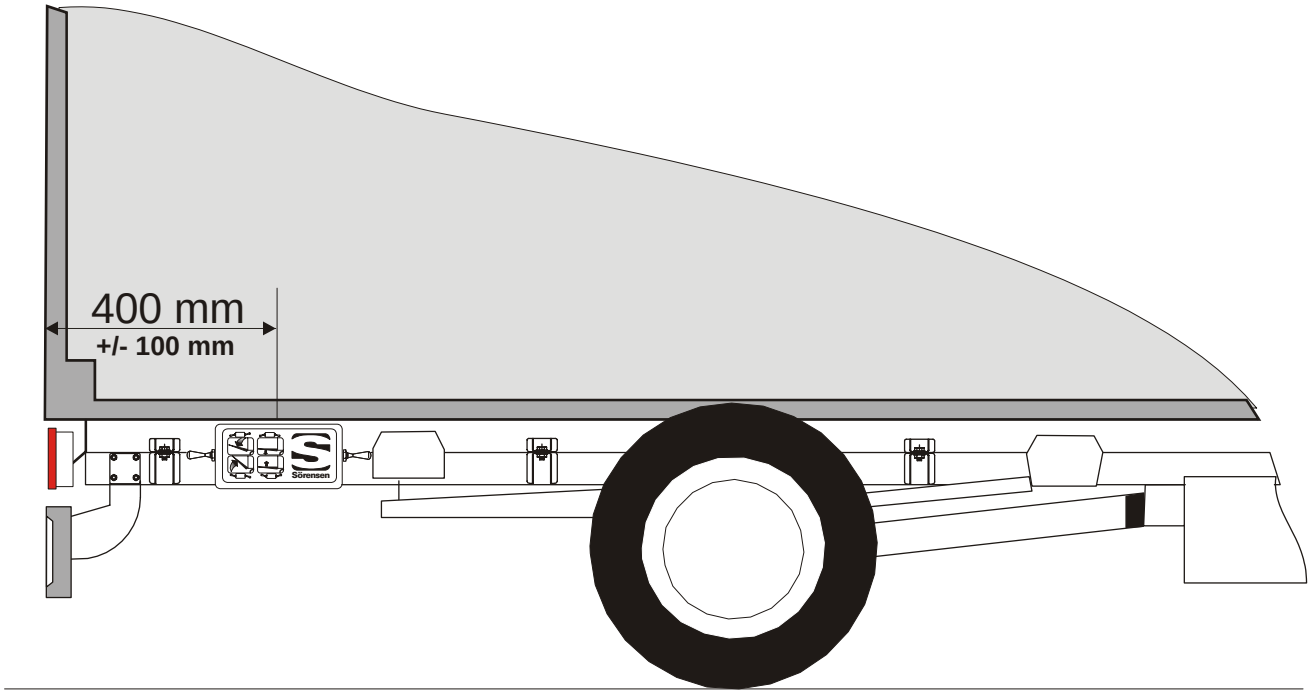
Foot control

The foot control is ready to use from the factory..

Please secure all cables with the delivered looms, to exclude pinching or scrubbing.

Assembly of control box

The control box is assembled and connected in the factory. It is positioned according to EN 1756-1



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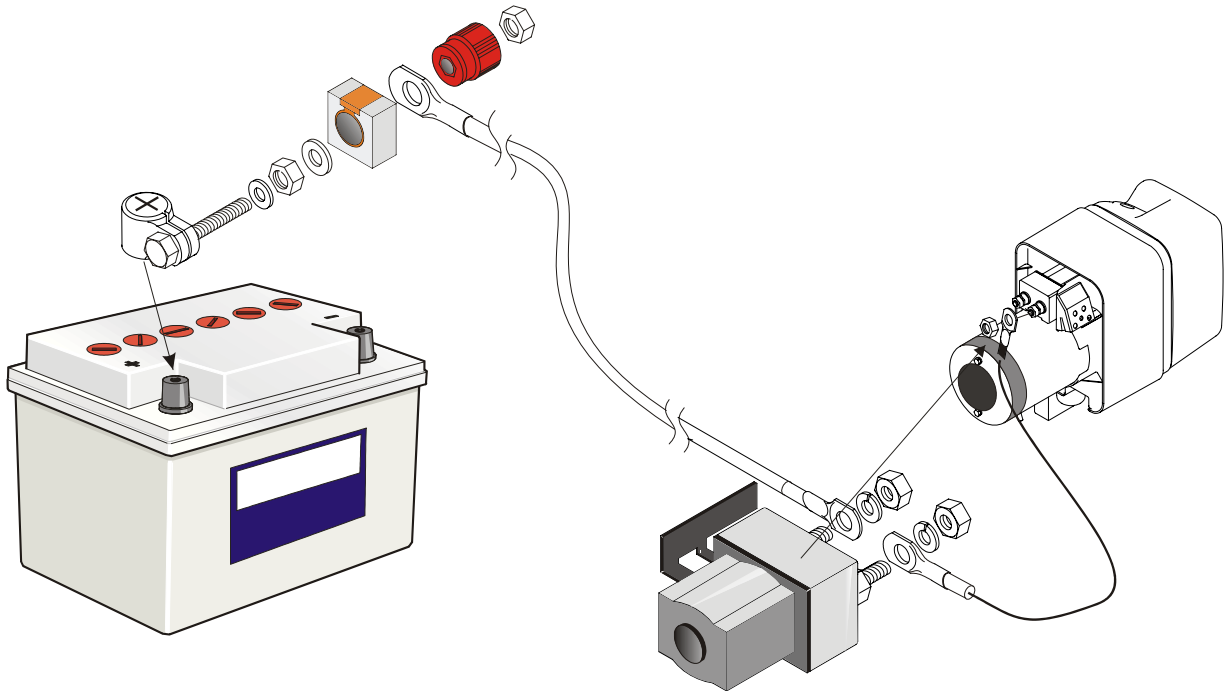
Power fuse
Version for 24 Volt devices



Assemble the fuse kit to the battery plus. Lead the plus cable from the battery to the power unit and connect it to the motor relay.

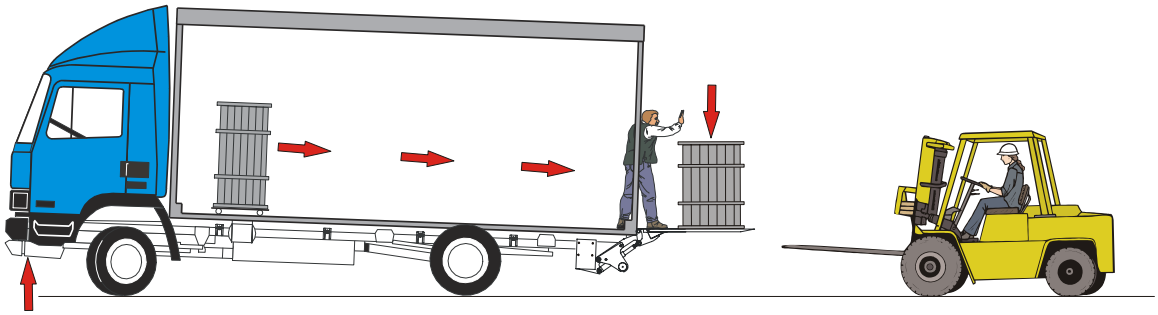
Lead the minus cable directly from the motor to the batterie minus, or if authorized by the vehicle manufacturer, affix it to a blank spot on the vehicle frame.

	24 Volt
Battery capacity	2 x 143 Ah

The guidelines of the vehicle manufacturer must be followed

Caution sticker “secure the load”

This sticker is not included in the delivery of the tail lift. You can purchase it at Sörensen Hydraulik GmbH under part number 20 904 940
This sticker is an information that there are situation during loading and unloading that may be a hazard, when the front truck axle is coming up. On the resulting ramp, the load may start to move an can be very hazardous to people.



Please appose the sticker on the free space above the controls of the control box. If this spot can not be visualised by the operator, please put the sticker on a place where the operator can see it at all times.

Caution ! Secure the load against moving
Or use mechanical supports

©Sörensen Hydraulik GmbH 20 904 940

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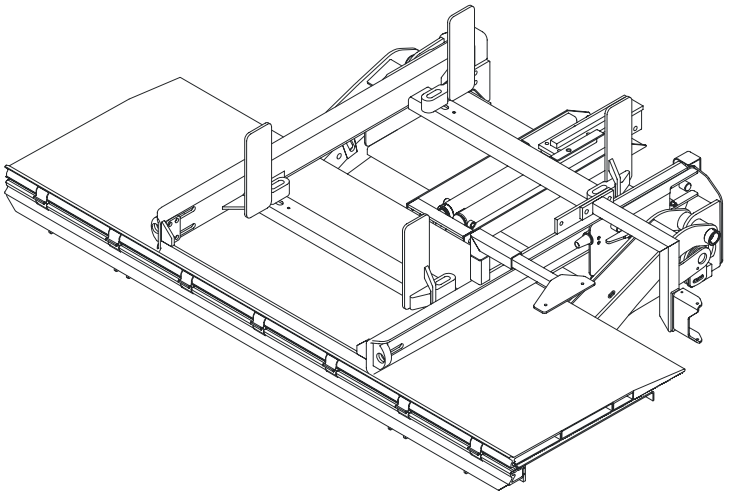
Assembly of the sliding tail lift



The sliding tail lift is completely pre-assembled, and the assembly is fast and easy. Position the tail lift under the vehicle with a forklift truck and lift it to the measure given by the assembly drawing. The maximum depth measure is to be taken from the measurement table below, or from the specific assembly drawing provided. The lift must be parallel to the rear vehicle frame.

Drill 4 holes (16 mm) through each bracket and through the vehicle frame. Then secure the lift with the 16 nuts and bolts (M16 10.9 DIN 931) provided. Also secure the vertical bolts tightly

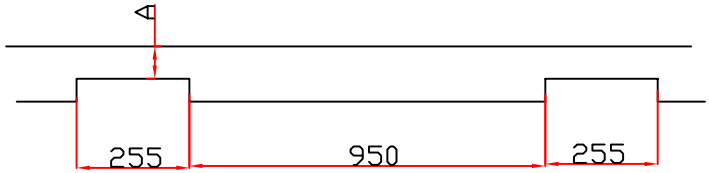
⚠ *Caution !*

Please check if a spezial drawing was provided by Sörensen hydraulik GmBh. If yes, the assembly must be performed accrding to that drawing. Please check with the relevant services (purchasing, sales or manufacturing) in your company.

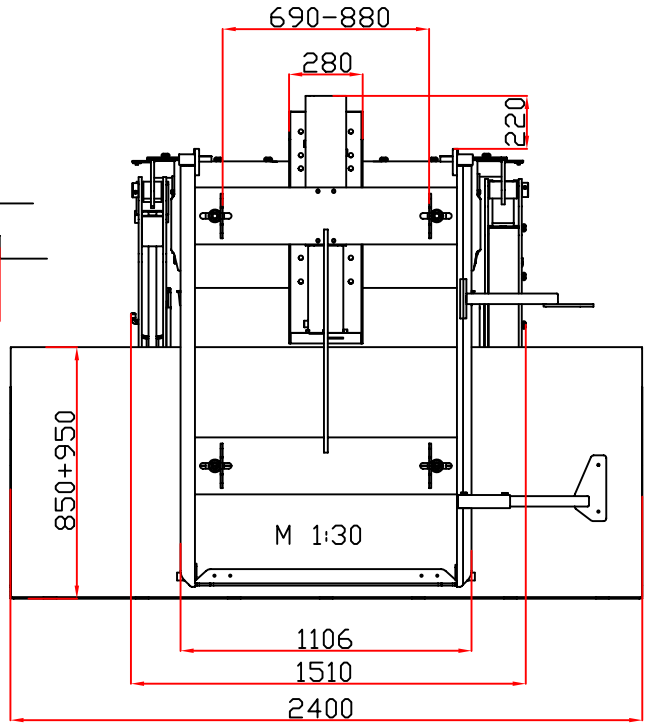
If there is not enough space available, it is necessary for Sörensen hydraulk GmbH to verify the measurements. Should it appear that the assembly is not possible under the described circumstances, a special drawing stating the assembly will be provided.

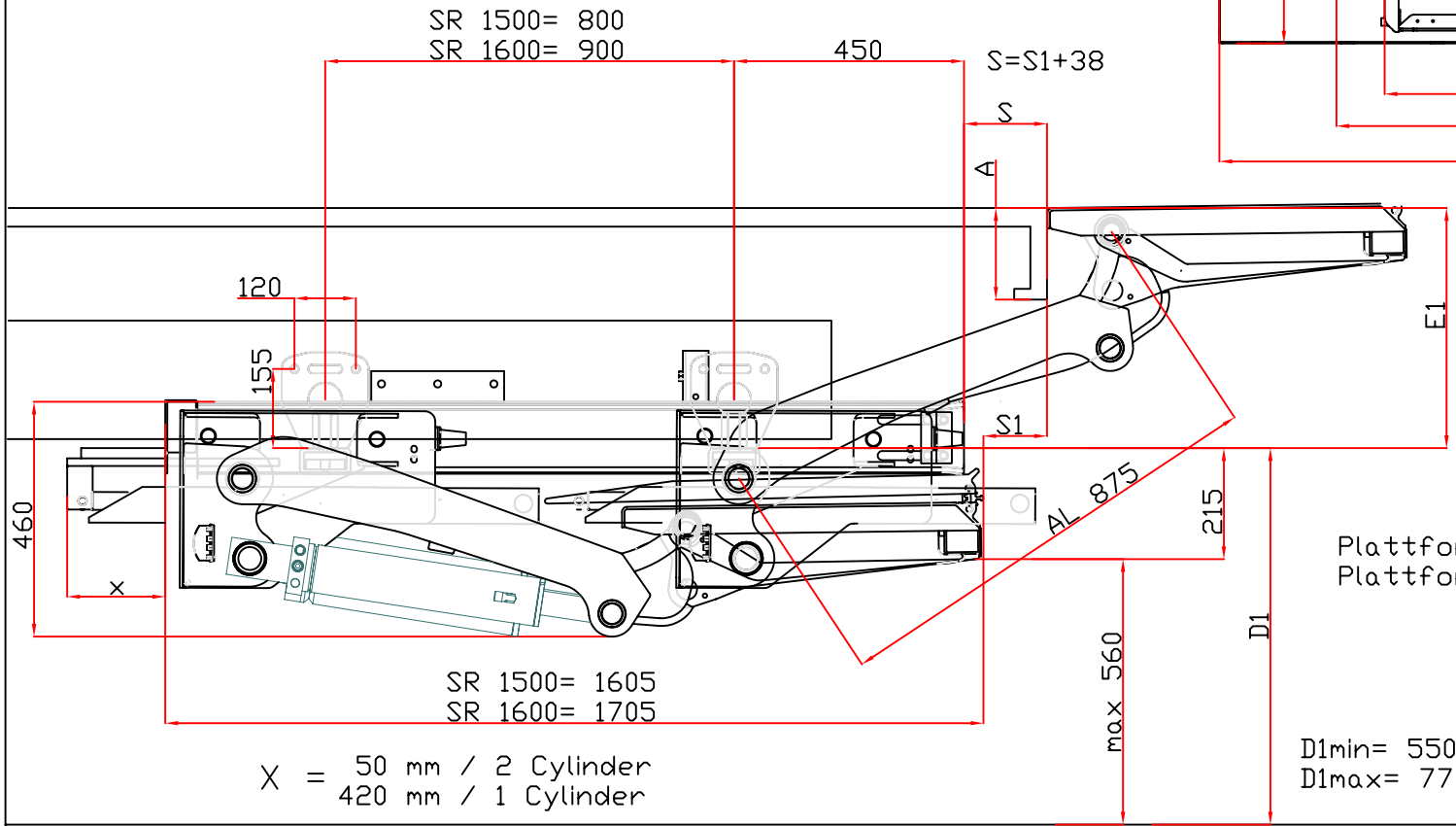
This drawing is only valid for the shown type of tail lift, or if stated for the tail lift serial number. As changes affecting the assembly situation can not be excluded, please state always the drawing number on your orders. In case of an order we will verify if corrections are necessary and inform you if it's the case

E1	S1min	S1max	A max
400	82	170	160
450	54	141	180
500	20	69	190
550	0	70	205
600	0	20	220
660	0	0	250



The clearnce of the tow bar to the lift and total authorized vehicle length are to be ensured by the assembly company

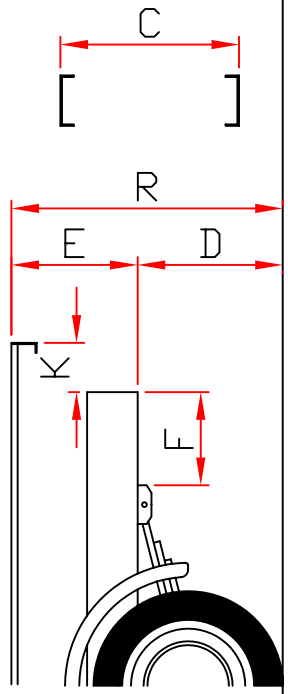




X = 50 mm / 2 Cylinder
420 mm / 1 Cylinder

Plattform 1500 = SR 1500
Plattform 1700 = SR 1600

D1min= 550 loaded
D1max= 770 unloaded



Your measurements

	Unloaded	Loaded
D=		
E=		X
R=		
K=	X	X
F=	X	X
C=	X	X

1:15

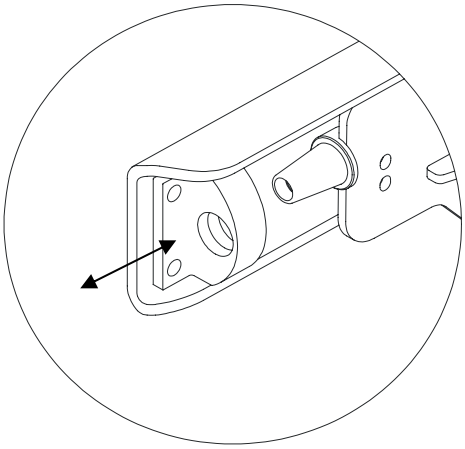
Lift type: X1UAM 1500/2000; Armlength 875 Nr. ; all clients; vehicle type: Truck; Drawing date : 02.02.04 Sylvia Canis

Sörensen Hydraulik GmbH, Osterrade 3, 21031 Hamburg 80, Tel.:040/739 60 60, Fax.:739 60 666

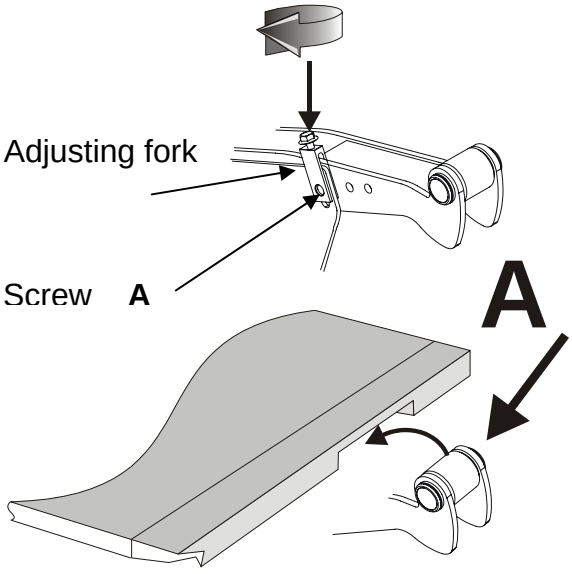
Genehmigt
Jens Herman Jensen

Adjusting of lifting height.

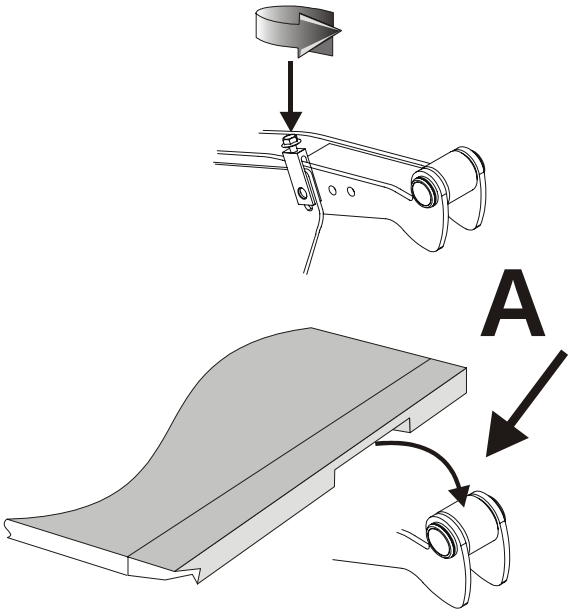
After the lift assembly, please slide it out completely, lift it to the vehicle floor and drive it to the rear traverse in this position. Then position the locks on each side and tighten the screws.



Adjusting the plattform horizontally



When turning the screw to the right, the lifting arm goes closer to the rear frame.



When turning the screw to the left, the lifting arm goes away from the rear frame.

First operation of the sliding lift

Check if the lift is ready to be operated. Check if all moving parts can move freely (no rubbing or pinching on hoses or cables). Check hydraulic system for leaks

Suggestions for hydraulic oil

HLPD 22 (ISO-VG 22) "deterging", to emulsify free water (avoids freezing in winter) and to improve oil film thickness.

Sörensen Hydraulik oil Part. Nr.60 700 283
Sörensen Biological-oil Part. Nr.20 858 811

Aral	Vitam DE 22	Shell	Hydrol DO 2
BP	Energol H LPD 22	Panolin	HLP SYNTH (Bio-Öl)
BP	Biohyd 32 (Bio-Öl)	DEA	Actis HLPD22
DEA	Econa E 22 (Bio-Öl)	Mobil Oil	H-LPD 22
Esso	Hydraulik Oil H-LPD 22	Fuchs	Rhenolin MR 5

Painting the lifting gear

The lifting gear is delivered from the factory treated with black epoxy powder. If another colour is wished, this has to be done by the bodybuilding company. (please note that the powder must be abraded prior to painting). Please note that the black piston rods must be covered before painting. Remove all rests of paint and tape before operating the cylinders, otherwise you will damage the seals, which is also a warrabnty exclusion.

Operating sticker

Stick the operating label to the control box

Type label

The type label with load diagramm has to be affixed permanently on the lift.

Note in the test book

In the test book, the part „check before first operation“ must be filled out and signed by a skilled person

Check of operating speeds

Vertical speed

The vertical speed (lifting and lowering) must not exceed 15 cm/second. If lifting and lowering are too fast, please compare the batterie voltage and amperage with the values of the power unit. These values must be identical.
If lifting and lowering are too slow, please check the valves for dirt.

Please call our after sales department in both cases

Tilting speed
The angle speed while tilting must not exceed 4°/second. The plattform tilting must be limited to 10°

Load test

Static test
Drive the plattform horizontally between the vehicle floor and the ground. Put a test gauge up to 125% of the nominal lift capacity on the platform, at the distance given by the load diagram. The distance is marked permanently on the plattform. Within 15 minutes, the lift must not lower more than 15 mm or tilt more than 2°

The assembler must check the lift for any deformation after this test.

Dynamical test
The functions lifting, lowering, tilt up and tilt down must be tested with a nominal load placed at nominal load distance. If necessary, the pressure valve must be adjusted so that the load can be lifted securely. CAUTION : The pressure valve is adjusted in the factory, a correction is generally not necessary. If it has to be done anyway, please note the following :
The pressure valve can only be adjusted if a manometer for reading the pressure is provided.
The maximum allowed pressure is engraved on the type label.
After the statical and dynamical tests, please check the hydrauli system for leaks.

Test against overloading
This test is made to ensure that the device can not lift a load greater than 125% of the nominal capacity of the taillift

Test of security devices
Drive all functions to their end, until the security devices are sollicitated.

Load test

Static test

Drive the platform horizontally between the vehicle floor and the ground. Put a test gauge up to 125% of the nominal lift capacity on the platform, at the distance given by the load diagram. The distance is marked permanently on the platform. Within 15 minutes, the lift must not lower more than 15 mm or tilt more than 2°

The assembler must check the lift for any deformation after this test.

Dynamical test

The functions lifting, lowering, tilt up and tilt down must be tested with a nominal load placed at nominal load distance. If necessary, the pressure valve must be adjusted so that the load can be lifted securely. CAUTION: The pressure valve is adjusted in the factory, a correction is generally not necessary. If it has to be done anyway, please note the following:
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Test against overloading

This test is made to ensure that the device can not lift a load greater than 125% of the nominal capacity of the taillift

Test of security devices

Drive all functions to their end, until the security devices are sollicitated.

Torque values for all delivered and mounted screws and bolts on Sörensen taillifts

Dimensions **8.8**	**Torque in Nm**
M4	2.7
M6	9.5
M8	23
M10	46
M12	80
M14	130
M16	195
M20	385
10.9	
M10	70
M12	115
M14	180
M16	275
M20	542
Bracket screws	
M14	215
M16	310

Screws DIN 3852	**Torque in Nm**
G1/4“	40
G3/8“	95
G1/2“	130
Cap Nuts	
M16 x 1.5	60
M18 x 1.5	60
Tank caps	
G1/8“	15
G1/4“	33
G3/8”	70

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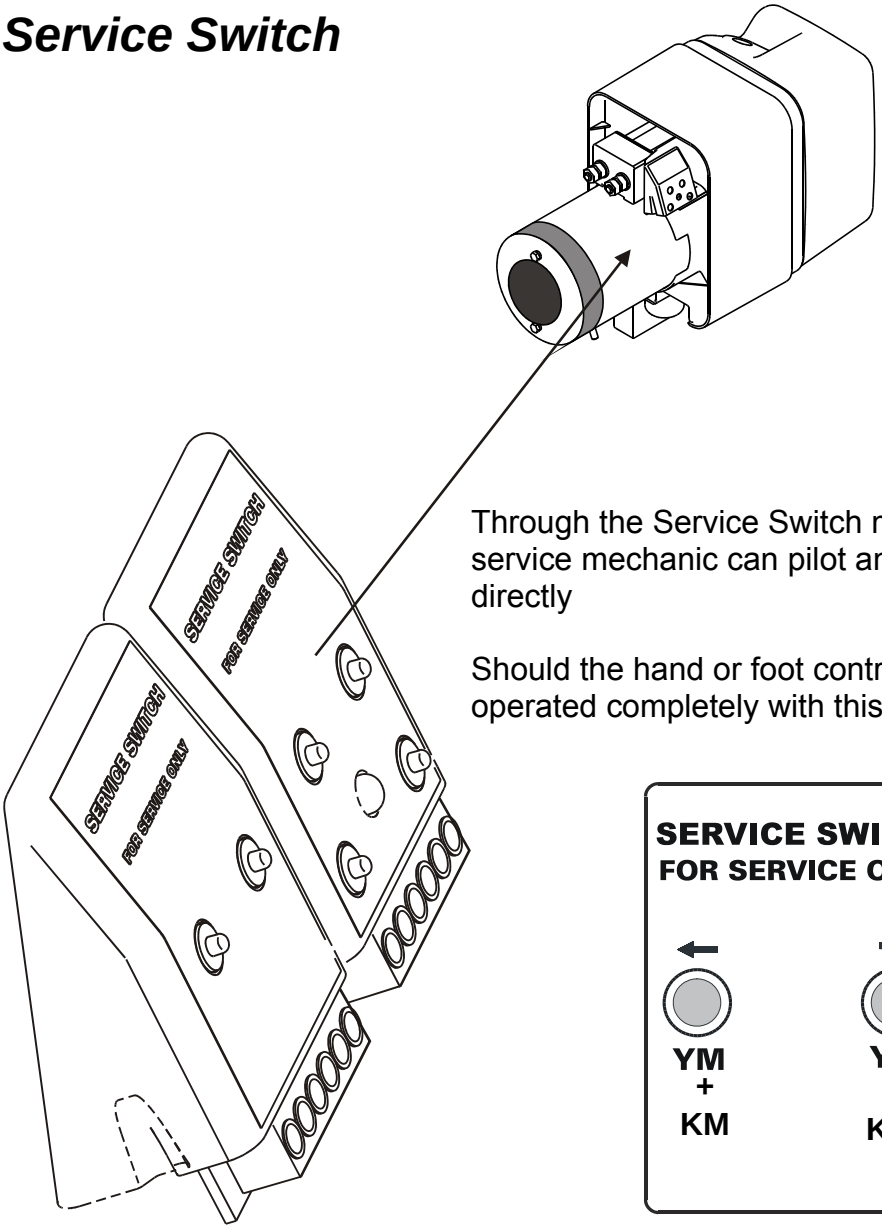
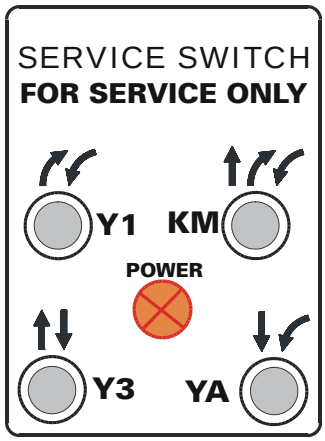
Service Switch



Through the Service Switch mounted in the power unit, the service mechanic can pilot and test all the lift functions directly

Should the hand or foot control not work, the taillift can be operated completely with this device (emergency operation)



Function	YA	Y1	Y3	KM	YM	YN
Power is green		●				
Lift			●	●		
Lower	●		●			
Open /tilt down	●	●		●		
Close / tilt up		●		●		
Slide out					●	
Slide in						●

→

Please respect the sequence, KM always last