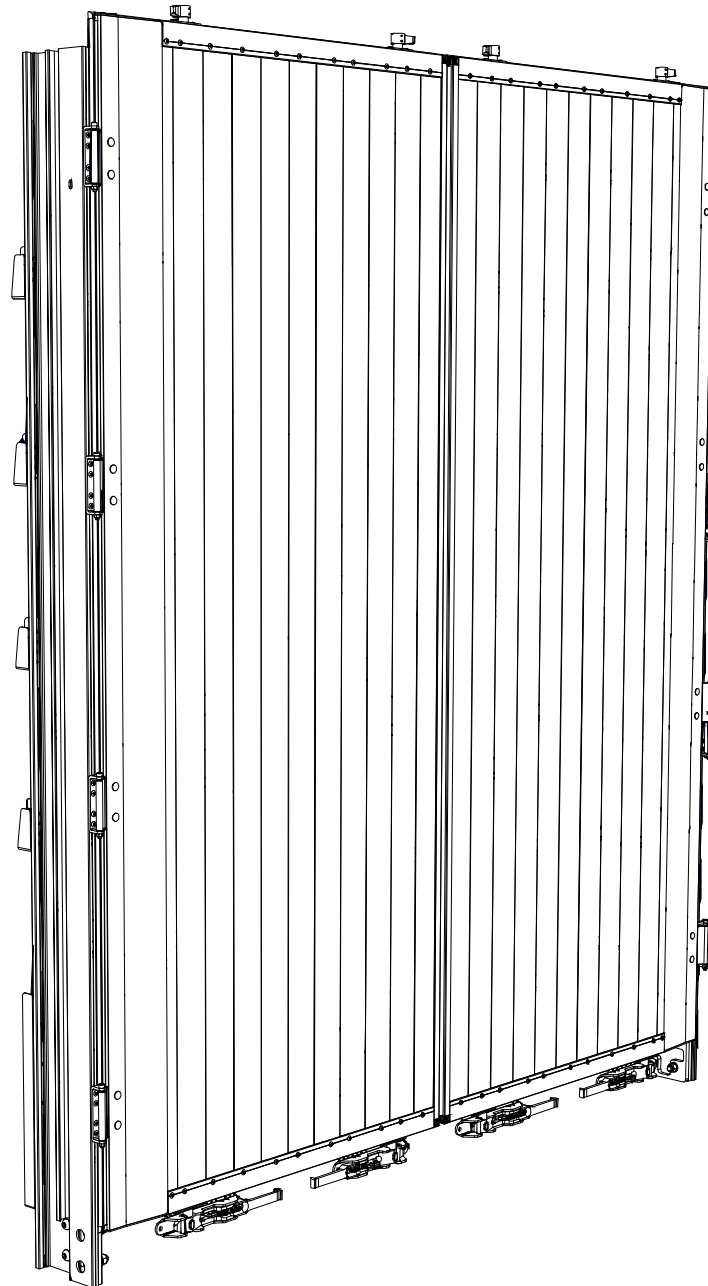


Mounting instruction rear portal and double wing portal



Translation of the original mounting instruction

Contents

1 General	04
2 Safety.....	06
3 Drop side stop assembly (only for PR version).....	06
4 Mounting of spacer plate and slider for rear door III or DFL	07
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6 Fixing of counter bearing of locking upside	10
7 Mounting of sliders and top parts for standard and lift system.....	11
8 Mounting of central hydraulics.....	12
9 Hydraulic aggregate with hand pump.....	16
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11 Circuit diagram	18
12 Mounting of liftmaster and compact hydraulics rear door III or DFL	19
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14 Ventilation and air exhaust of compact hydraulics	22
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GENERAL REMARKS

Introduction to Mounting Instruction

Alteration service: Yes

Staff: According to curriculum for apprenticeship as a body and vehicle mechanic and a body and vehicle construction mechanic.

This Mounting Instruction is part of the delivery and an important help for successful mounting. Therefore, it must be available to the mechanic during the mounting works.

Furthermore, the assembly guidelines of the applicable vehicle producers must be obeyed.

Copyright:

The copyright for this mounting instruction is reserved by TSE Trailer System Engineering GmbH & Co. KG

If you need any further information, do not hesitate to contact us:

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Instruction and training support

As an employer, you are obliged to inform and instruct your personnel about existing legal and accident prevention regulations.

The personnel must have understood these instructions, and it must be safeguarded that the instructions are obeyed.

Only in this way you will reach safety and danger awareness of your personnel at work.

Example for training topics

1. About safety

- Accident prevention regulations
- General legislation
- General safety hints
- Measures in emergency cases
- Personal protective equipment

2. Maintenance and repair regulations

- Correct use of cleaning agents and lubricants
- Special experience of the mechanic in maintenance, repair, cleaning and upkeep of the product

Hints

Attention:

The surfaces of the TSE modules must not be contaminated with caustic cleaning fluids. Cleaning fluids with the appropriate labeling are aggressive and can cause damage to all component surfaces. These should expressly not be used for gentle cleaning.

Nummer	Symbol
GHS05	corrosivity



ATTENTION!

Texts with this symbol will warn you against possible mistakes in mounting and, therefore, against potential material damages.



HINT!

Texts with this symbol will give you tips or additional information.



TIGHTENING TORQUE!

Texts with this symbol will give you necessary tightening torques.



You need holes!

Texts with this symbol indicate the setting of holes.

Safety

General

Although our products are in accordance with the state of the art, they may pose a risk if:

- they are mounted by unskilled personnel
- they are maintained improperly

Safety hints

This safety instruction informs you about the products of TSE Trailer System Engineering GmbH & Co. KG. It contains information about maintenance and repair of the parts and their components. The service instruction has only been written for skilled personnel of qualified and authorized specialized companies in motor vehicle crafts. The service instruction is not applicable for other target groups.

We want to support specialized companies with the present mounting instruction during the mounting works with our products.

TSE Trailer System Engineering GmbH & Co. KG accepts no liability for the installation of inapplicable or unreleased parts in their products.

Defects due to wrong handling, aggressive cleaning agents, use of force or subsequent changes of the delivered product or single components of it, as well as non-observance of the safety hints and consequential damages caused thereby, are not covered by our warranty.

Only use unchanged original parts and accessories supplied by the manufacturer.

We do not accept any warranty for the correctness, completeness or currency of the given information. The contents and information of this mounting instruction are neither a warranty or warranted characteristics within the meaning of German legislation, respectively the German Civil Code (Bürgerliches Gesetzbuch (BGB)), nor can they be interpreted as such.

No claims can be derived from provision of information, recommendation or consulting. Liability for damages is generally excluded as far as we are not responsible in the sense of intent or gross negligence, or as far as this does not contradict mandatory legal provisions.

Texts and graphics are subject to our rights of use; copy rights or right of distribution in any form require our agreement.

Mentioned brand names, even if they are not marked as such in every case, are still subject to the regulations of the trade mark law. If any disputes of legal nature occur from applying information found in this mounting instruction, they shall solely be subject to the regulations of German law.

The Amtsgericht Stuttgart (Local Court in Stuttgart) is deemed to be agreed on as place of jurisdiction. If some clauses of this declaration about limitation of liability do not or no longer comply with the applicable legal provisions, the validity of the other clauses shall remain unaffected thereof. Read the information in this mounting instruction carefully. Especially, obey the hints for your own safety.

All technical information, descriptions and pictures shall be valid from the day of their printing - respectively the day of any supplements hereto - on.

We reserve the right to make changes due to steady further development.

No claims can be derived from applications and explanations of this publication.

Safety hints for the technician:

Unauthorized people are not allowed to enter the vehicle and the area around it.

Your working area should be in good order.

Only works which you are commissioned and acquainted with have to be executed.

Increased caution is advisable in dangerous areas.

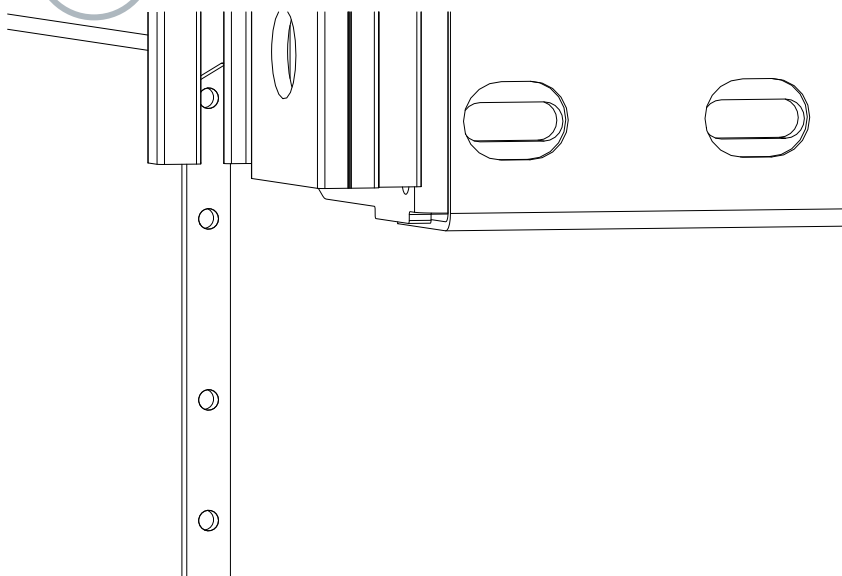
Obey the producer's information and safety hints for the applicable product when you deal with operation materials (oils, grease etc.).

Only applicable lifting devices may be used.

Mounting drop side stop

1

Insert screw plate

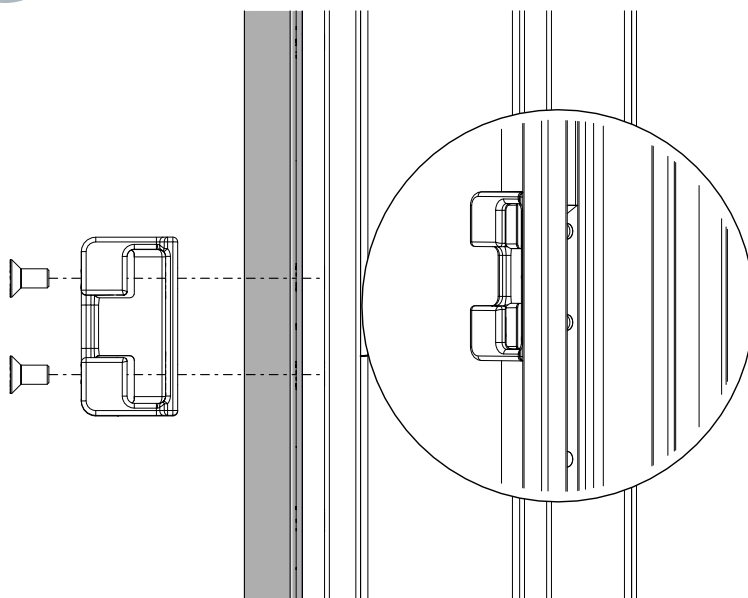


Attention:

The threaded plate must be inserted before the tailgate stop can be mounted!

2

Determine the position of the drop side stops and screw on the counterholder



Countersunk screw with hexagon socket M8x16

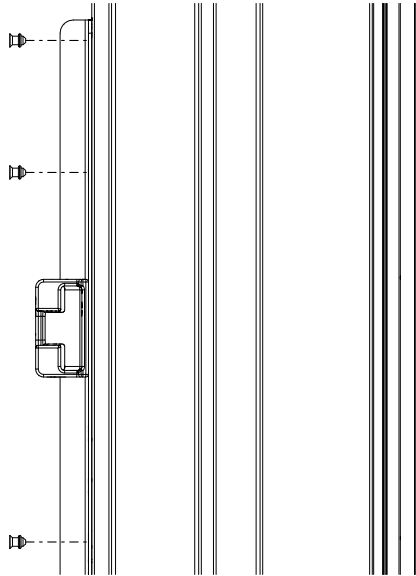


Torque 36 Nm

Countersunk screws, counterholder and drop side stop are part of the accessories package.

3

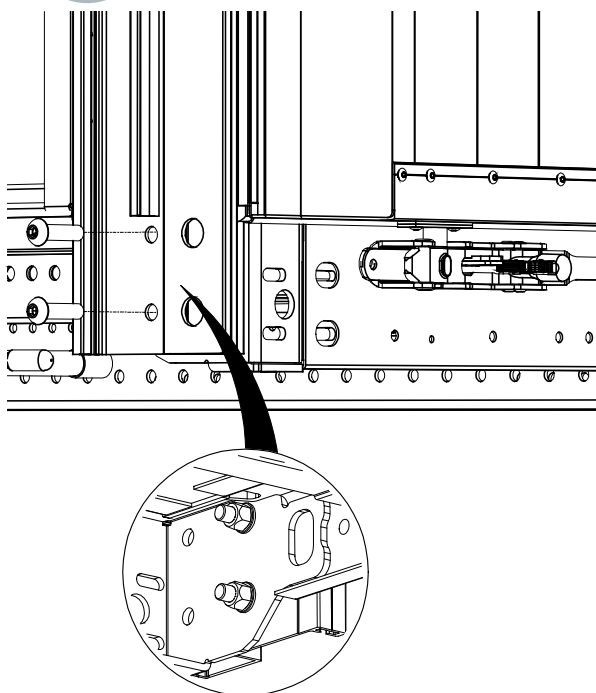
Rivet the drop side stop

**BS-Rivet**
KB4.8-6.8mm**Drop side stop and rivets**
are enclosed loose.

Mounting stanchion and sliding rear portal III or double wing portal

1

Screw the stanchion



Fillister head screw with internal hex M16x60



Washer without chamfer



Hexagon nut with all-metal clamping part M16x60

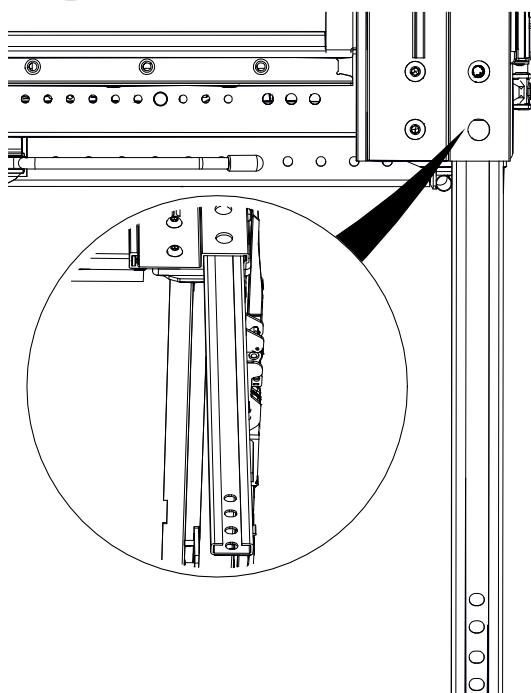


Tightening torque 302 Nm

Screws, washers and nuts have to be taken from mounting kit
TSE no.: 1115917

2

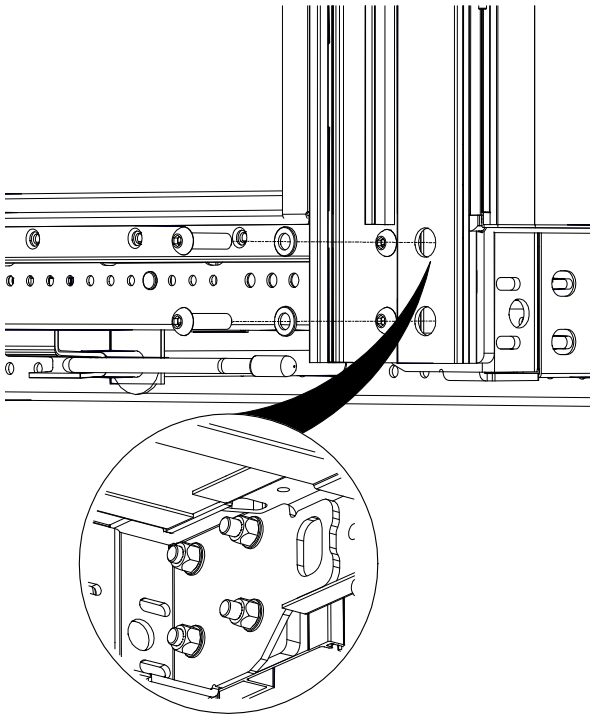
Insert slider



Take slider from mounting kit
TSE no.: 1115917

3

Screw the slider



Fillister head screw with
internal hex M16x60



Washer without chamfer



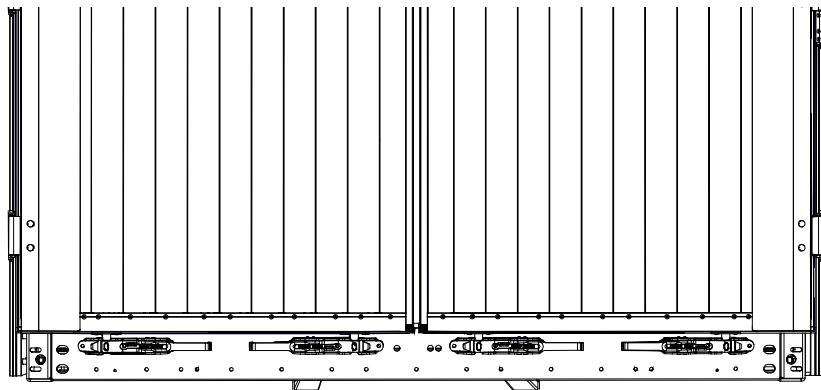
Hexagon nut with
all-metal clamping part
M16x60



Tightening torque 302 Nm

Screws, washers and
nuts have to be taken from
mounting kit
TSE no.: 1115917

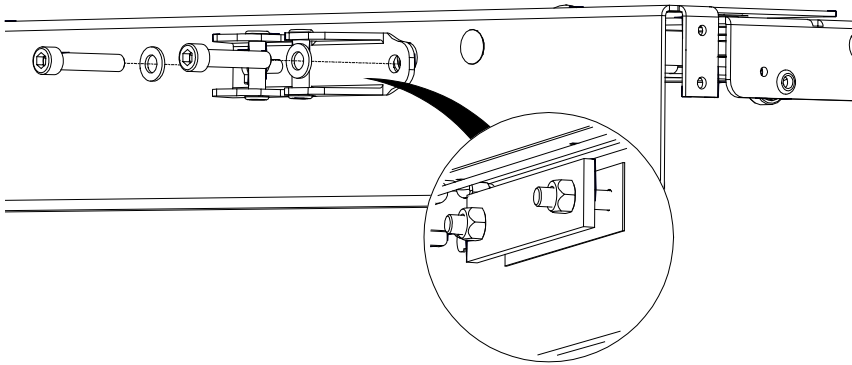
Fixing of hand levers

1**Do not fix hand lever**

The hand levers will only be fixed when setting the doors.

Information can be taken from the instructions about the door crack settings.

Fixing of the counter bearing of locking upside

1
Mounting the counter bearing of locking


Cylinder screw M10x50



Washer A10.5



Sealing



Clamping plate complete



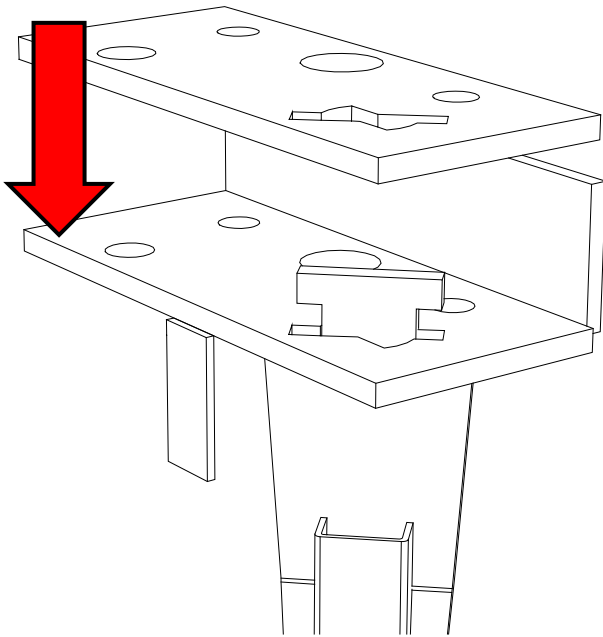
Tightening torque 48 Nm

Screws, washers,
sealings and clamping plates
have to be taken from
mounting kit
TSE no. 1115917.

Mounting of sliders and top parts upside for standard and lift system

1

Mounting the slider, top part and console



Console left/right
TSE no.: 1117778

Top part backside left
Liftmaster
TSE no.: 1112747

Top part backside right
Liftmaster
TSE no.: 1112749

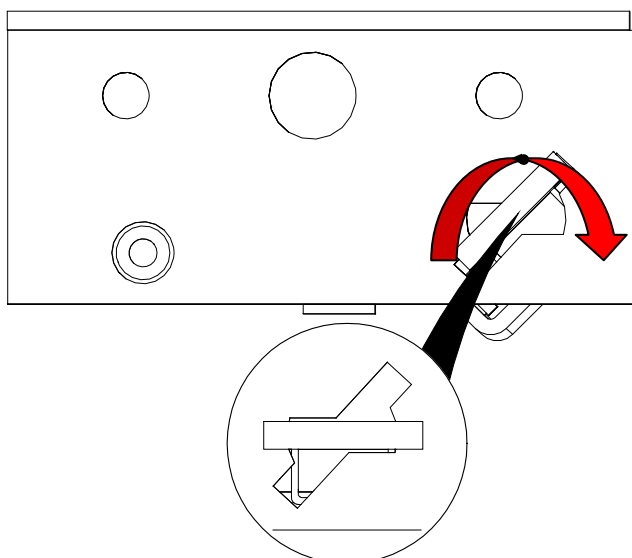
Top part backside left
TSE no.: 1112683

Top part backside right
TSE no.: 1112684

Sliders backside
left/right
TSE no.: 1153596

2

Turn the slider in the direction of the arrow.



Mounting of central hydraulics

1

Overview material



Hoses, connectors and Hydraulic cylinders have to be taken from **assembly kits Hörbiger pump**
TSE no.: 1359459 and hydro-pneumatic pump
TSE no.: 1359541.

Top parts and sliders are parts of the respective assembly kit for the roof connection.

2

Dismantling of protective cap



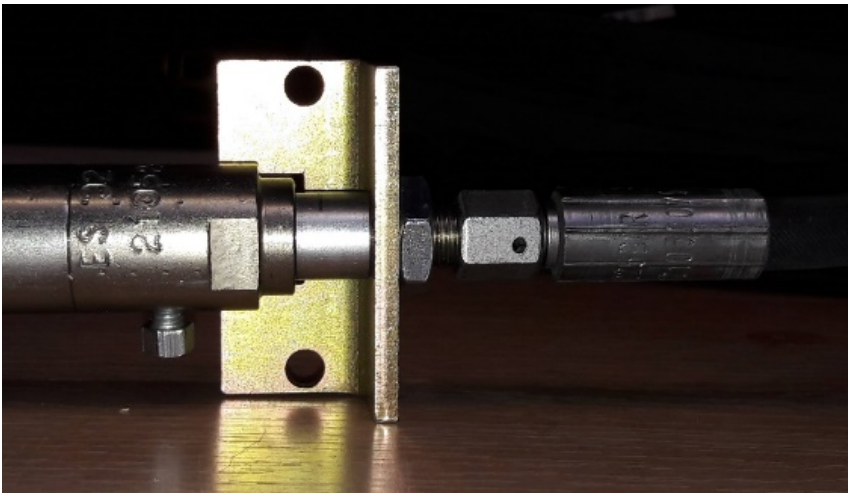
Remove the protective cap and then loosen the nut.

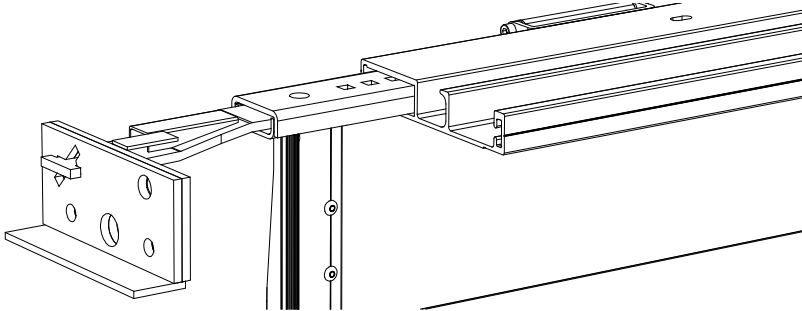
Nut and sleeve have to be taken out after that.

Open-end wrench size
 22 and 14

3**Mounting of cylinder admission**

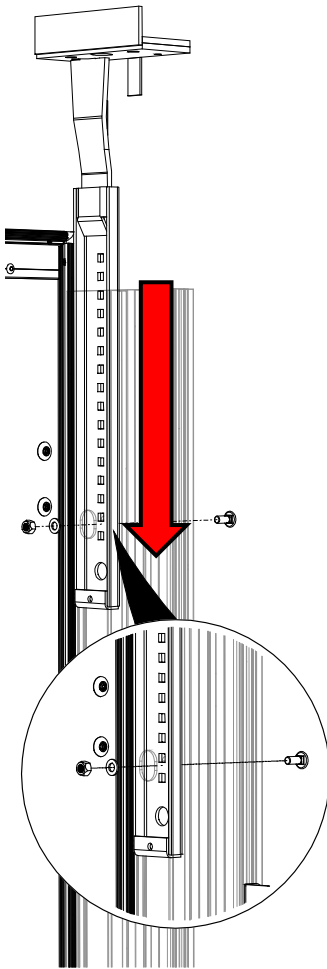
Open-end wrench size
19 and 14

**4****Mounting of lift cylinder**

5**Insert top part (standard or central hydraulics)****6****Rivet cylinder admission
(central hydraulics)**

7

Drill out the fixing hole



Carriage bolt M10x25



Washer A10.5



Hexagon nut M 10

Push the carriage bolt from the outside of the vehicle through the stanchion and the slider.

Then fix with nut and washer.

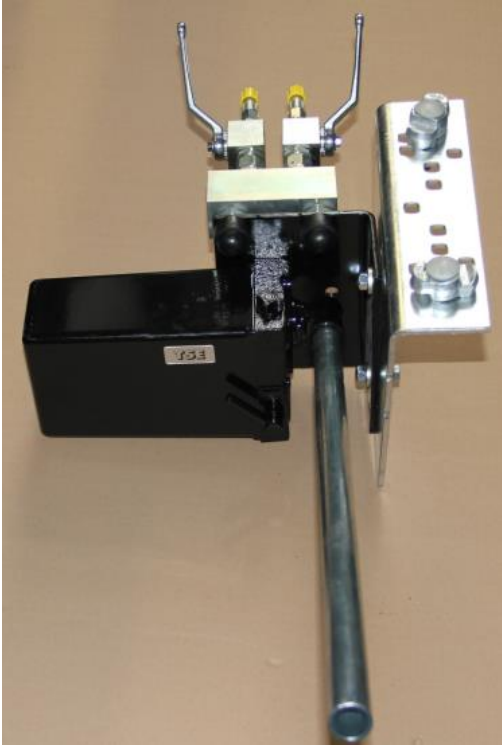


The drilling is only needed for roofs with hydraulics.



Tightening torque 48 Nm

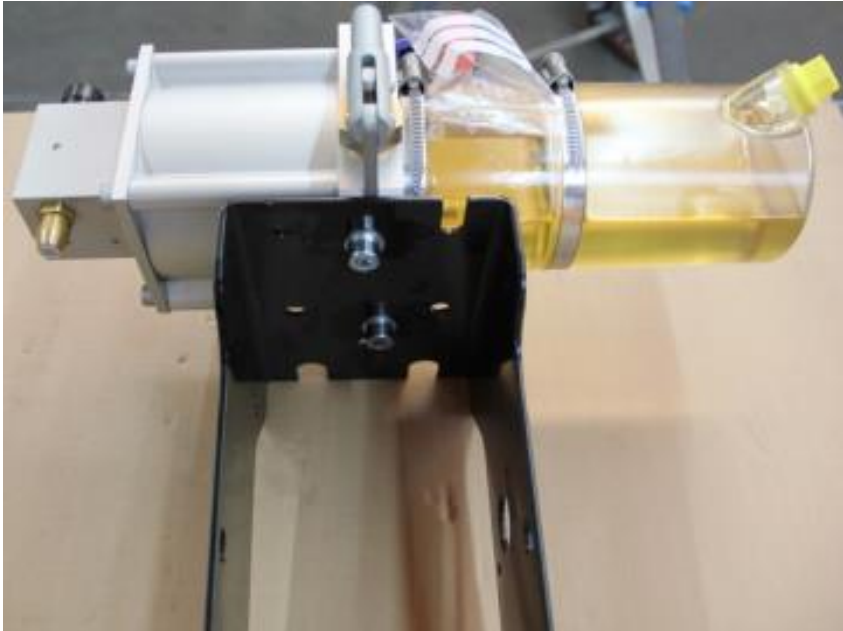
Mounting of hydraulic aggregate with hand pump

1**Mount the console**

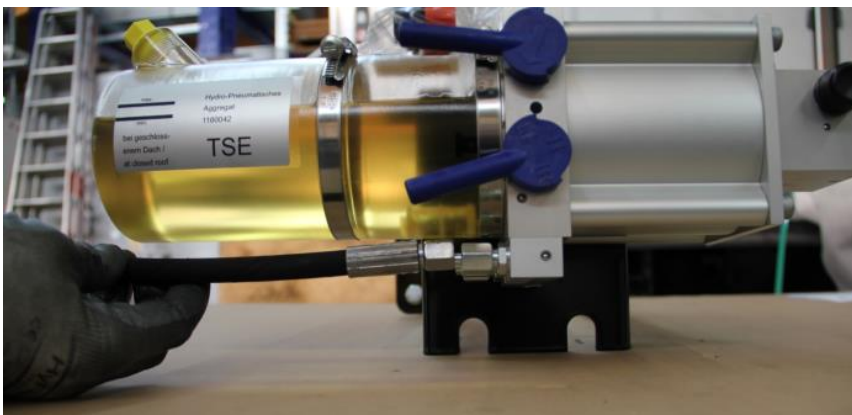
Mounting depends on the vehicle.

2**Mount the hoses**

Mounting of hydro-pneumatic pump

1**Mount the console**

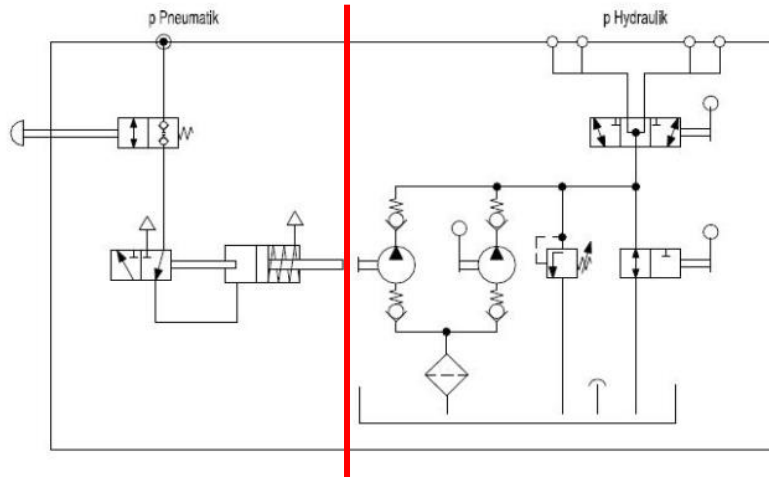
Mounting depends on the vehicle.

2**Mount the hoses**

Circuit diagram

1

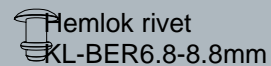
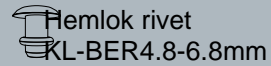
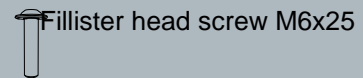
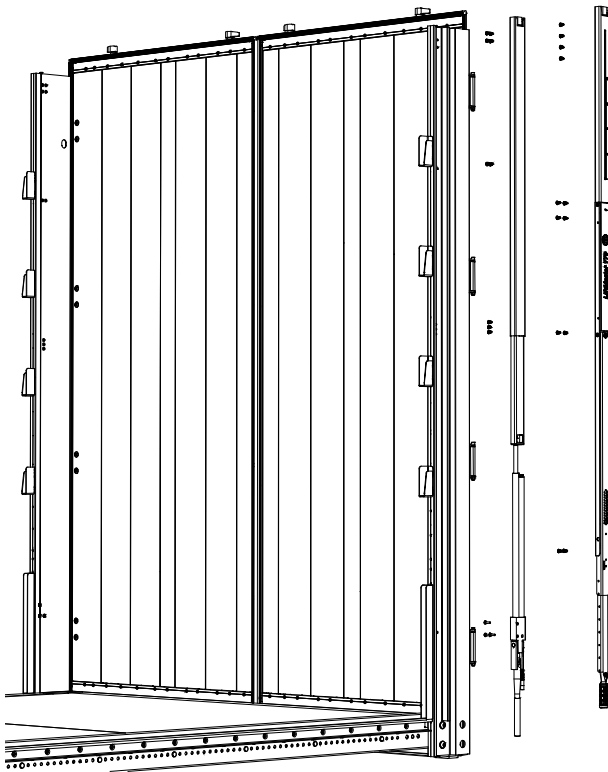
Pneumatics and hydraulics



Mounting of liftmaster and compact hydraulics for rear door III and double wing door

1

Mounting of liftmaster or compact hydraulics



Liftmaster and Hemlok rivet KL-BER6.8-8.8mm have to be taken from lift system TSE no.: 1119463.

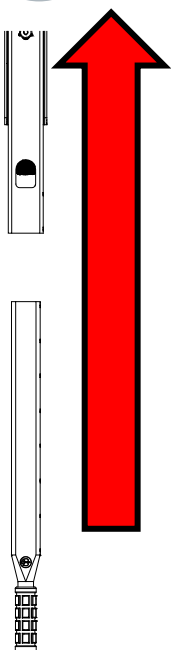
Compact hydraulics, fillister head screw and Hemlok rivet KL-BER4.8-6.8 have to be taken from **lift system** TSE no.: 1250648.



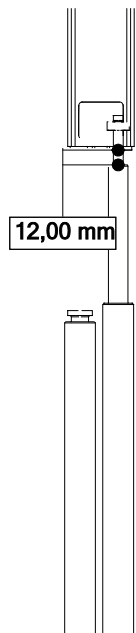
Tightening torque 15 Nm

2

Mounting of liftmaster hand lever



Concerning the liftmaster, the hand lever has to be adjusted by the customer to the required length, depending on the lateral clear height, and then has to be pushed inside in direction of the arrow, and be fixed.

3
**Mounting of hydraulic stanchion lifter
compact hydraulics**

Two ear hose clamp

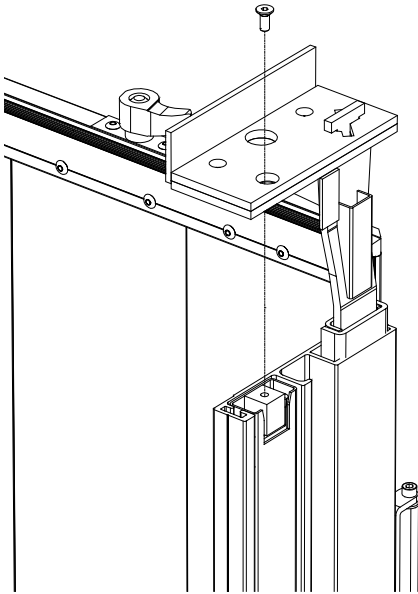
The two ear hose clamp has to be taken from lift system
TSE no.: 1250648.

Concerning the compact hydraulics, the regulation of the lateral aperture height is carried out by means of the balancing slider. The protection against falling out (two ear hose clamp) must be mounted.

Mounting of top parts with sliders upside (liftmaster and compact hydraulics rear door III and DFL)

1

Mount top part with console and slider to
pivot bearing



Pivot bearing



Countersunk screw M8x20

Pivot bearing and
countersunk screw have to be
taken from the lift systems
TSE no.: 1119463 and
TSE no.: 1250648.

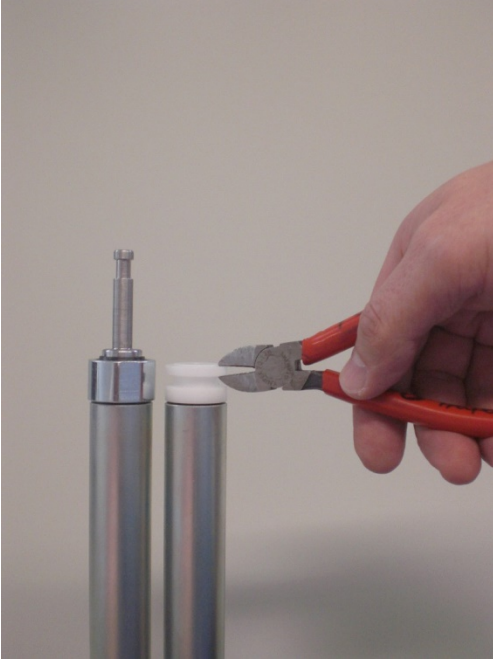


Tightening torque 36 Nm

Ventilation and air exhaust of compact hydraulics

1

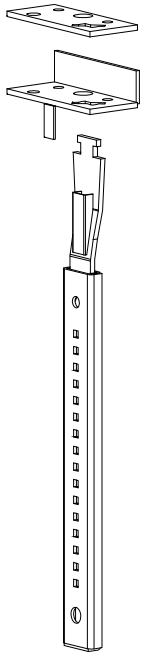
After mounting of the compact hydraulics



After mounting the compact hydraulics, the tank cap must be cut open for ventilation and air exhaust.

Annexes

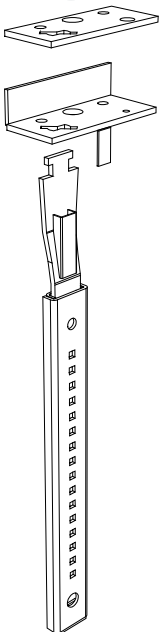
Complete overview of top parts / consoles / sliders

1
CS and UK top, 37s stanchion


Console TT, CS, backside
left/right
TSE no.: 1117778

Top part lift systems backside
left
TSE no.: 1112683

Slider backside left/right
TSE no.: 1153596

2
CS and UK top, 37s stanchion


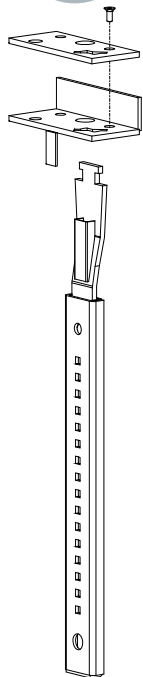
Console TT, CS,
backside left/right
TSE no.: 1117778

Top part lift systems backside right
TSE no.: 1112684

Slider backside left/right
TSE no.: 1153596

3

CS and UK top, 37s stanchion



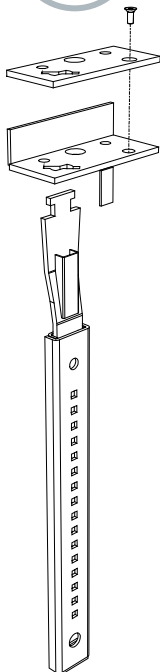
Console TT, CS,
backside left/right
TSE no.: 1117778

Top part lift systems with
pivot bearing
backside left
TSE no.: 1112747

Slider backside left/right
TSE no.: 1153596

4

CS and UK top, 37s stanchion



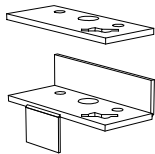
Console TT, CS,
backside left/right
TSE no.: 1117778

Top part lift systems with
pivot bearing
backside right
TSE no.: 1112749

Slider backside left/right
TSE no.: 1153596

5

CS and UK top, 50s stanchion



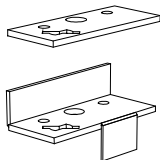
Console backside
left/right 50s stanchion
TSE no.: 402-52.251

Top part backside left
50s stanchion
TSE no.: 402-52.250

Slider backside left/right
50s stanchion
TSE no.: 402-52.110

6

CS and UK top, 50s stanchion



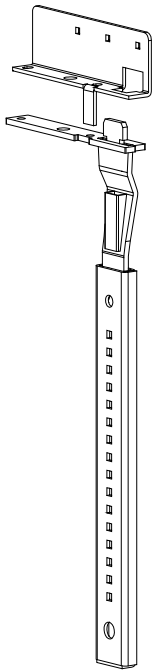
Console backside
left/right 50s stanchion
TSE no.: 402-52.251

Top part backside right
50s stanchion
TSE no.: 402-52.260

Slider backside left/right
50s stanchion
TSE no.: 402-52.110

7

MEGA top, 37s stanchion

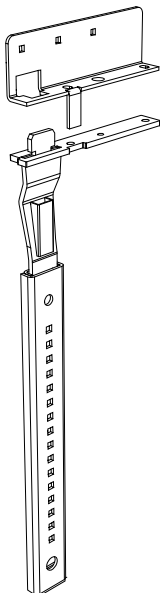


Top part lift systems
backside left
TSE no.: 1112754

Slider Mega
35/37s stanchion backside
left
TSE no.: 1112760

8

MEGA top, 37s stanchion

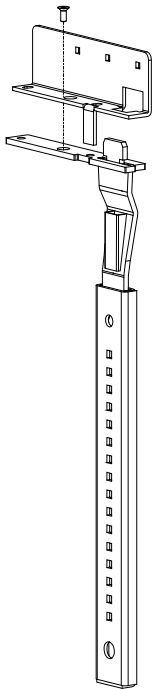


Top part lift systems
backside right
TSE no.: 1112755

Slider Mega
35/37s stanchion backside
right
TSE no.: 1112763

9

MEGA top, 37s stanchion

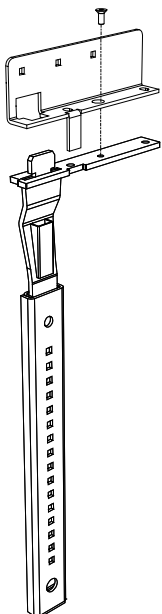


Top part lift systems
backside left
TSE no.: 1112754

Slider Mega
lift system backside left
TSE no.: 1112764

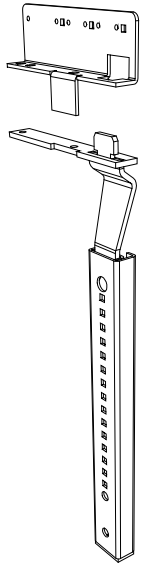
10

MEGA top, 37s stanchion



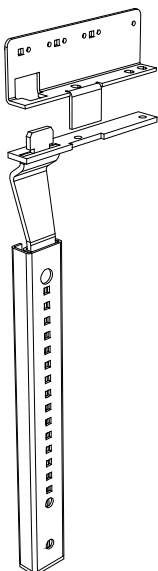
Top part lift systems
backside right
TSE no.: 1112755

Slider Mega
lift systems backside right
TSE no.: 1112765

11
MEGA top, 50s stanchion


Top part backside left
50s stanchion
TSE no.: 405-51.150

Slider Mega backside left
50s stanchion
TSE no.: 400-52.332

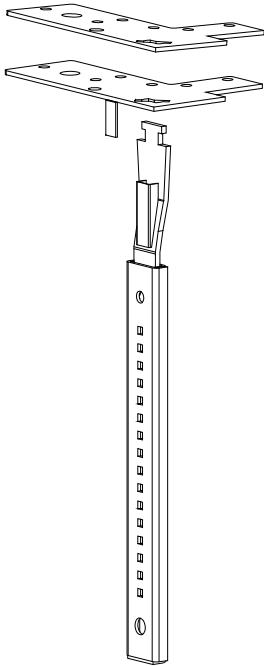
12
MEGA top, 50s stanchion


Top part backside right
50s stanchion
TSE no.: 405-51.160

Slider Mega backside right
50s stanchion
TSE no.: 400-52.342

13

FLAT top, 37s stanchion



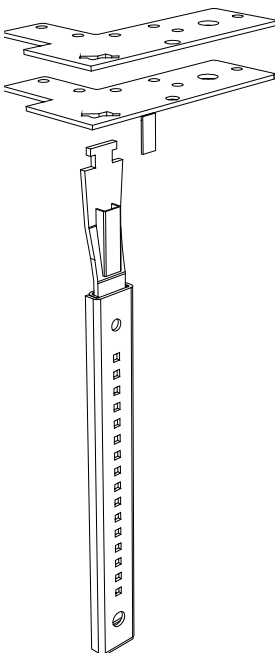
Console TT2, FLAT
Intermediate plate
backside left/right
TSE no.: 1283654

Top part FLAT backside left
TSE no.: 1283689

Slider backside left/right
TSE no.: 1153596

14

FLAT top, 37s stanchion



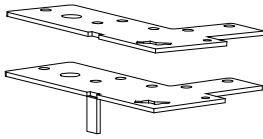
Console TT2, FLAT
Intermediate plate
backside left/right
TSE no.: 1283654

Top part FLAT backside right
TSE no.: 1283690

Slider backside left/right
TSE no.: 1153596

15

FLAT top, 50s stanchion



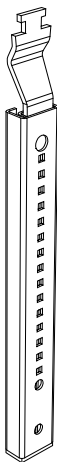
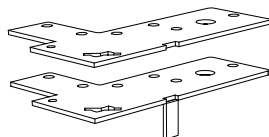
Console TT2, FLAT
Intermediate plate backside
left/right 50s stanchion
TSE no.: 1283595

Top part FLAT backside left
50s stanchion
TSE no.: 1283600

Slider backside left/right
50s stanchion
TSE no.: 402-52.110

16

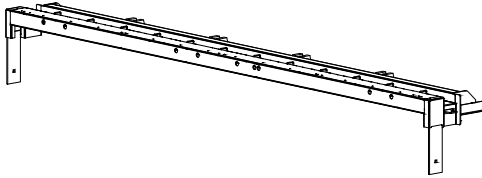
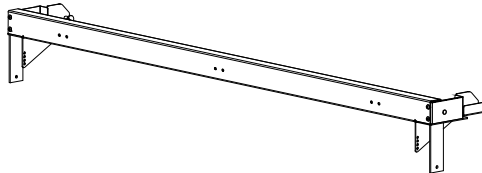
FLAT top, 50s stanchion



Console TT2, FLAT
Intermediate plate backside
left/right 50s stanchion
TSE no.: 1283595

Top part FLAT backside right
50s stanchion
TSE no.: 1283602

Slider backside left/right
50s stanchion
TSE no.: 402-52.110

17**Hamburg roof, rear door**QB backside complete
TSE no.: 320-51.131**18****Hamburg roof, upper flap**KIT2 Hamburg upper flap
crossbeam complete
TSE no.: 1302252

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Revision status

Revision status	Kind of change	Date	Name
00	New creation of mounting instruction	23 July 2018	Dingler / Maier
01	Spacer place was removed	19 September 2018	Dingler / Maier
02	The safety hints have been supplemented	15 May 2019	Maier
03	On page 12, the mounting step no. 4 has been amended with an information text.	05 June 2019	Laib / Maier
04	New chapter was added	16 December 2019	Laib / Maier
05	Corrected tightening torques	29 September 2020	Boll
06	Page 4 changed	23.11.2020	Boll

Erstellt	Geprüft und Freigegeben
Datum:	Datum: 29.09.2020
Name/Abt.	Name/Abt. U.Boll
Unterschrift	
Dokument: FB45120A	