DH - P20 350 kg - P21 450 kg




MONTAGE INSTRUCTIES

Fabrikant :

INSTRUCTIONS DE MONTAGE

Constructeur :

MOUNTING INSTRUCTIONS

Manufacturer :

MONTAGE ANLEITUNG

Hersteller :

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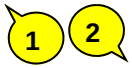
0) LIST OF ABBREVIATIONS

	Attention ! Or: Danger !
	Don't do!
	Consult the text which is referred to
	Applicable to HTL with **mechanical** tilt at ground level (DH-LM, LC, LMP,…)
	Applicable to HTL with **hydraulic** tilt at ground level (DH-LSU, LSP*, LV, LE,…)
	Tag indication something is "correct"
	Tag indication something is "incorrect"
	Study in detail
	Example, not for all models identical !!
	Drawing attention to a particular item in a drawing or illustration
	Numbered references between text & illustration, or between 2 illustrations
	To be executed symmetrically on both sides
	Bolt instructions
	Drill instructions
	Apply sufficient anti-corrosive protection (zinc-spray, Dinitrol, …)
	Grease thoroughly all articulation bearings and pins

1) GENERAL FITTING INSTRUCTIONS

Before the preparation of the vehicle chassis and installation of the Hydraulic Tail Lift (= named **HTL** hereafter), read and make sure you understand the underlying fitting instructions first, and progress step by step after that.

Before getting started, also take notice of the **safety instructions** for repair and maintenance, included in the user's manual issued with this HTL. In case of doubt, and before making any further progress, please consult your Dhollandia-agent.

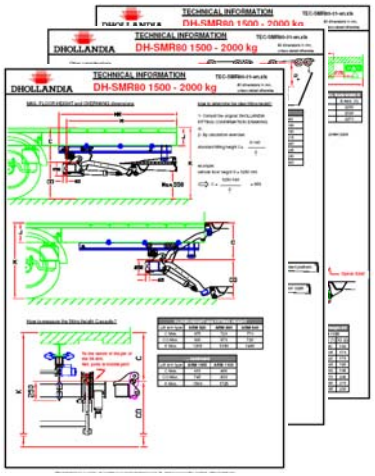
After installation, perform the put-into-service test following the check-list included in the user's manual, and fill-out the CE Fitting Declaration in the same document.
Check the following points before getting started:

- Check if the kit is complete, and if all parts needed to fit the HTL correctly have been delivered.
- Compare the voltage of the batteries of the vehicle with the voltage of the hydraulic power pack of the HTL.
- Compare the actual dimensions of the vehicle with the data given in the TECHNICAL SUMMARY of the HTL. The actual floor height K should not exceed the theoretical maximum lifting height of the HTL.

- Observe the FITTING AND BODY BUILDING INSTRUCTIONS of the manufacturer of the vehicle. Observe in particular the maximum allowed HTL capacity, the instructions on the use of hydraulic stabilising legs, the instructions for mounting and bolting to the vehicle chassis, and the manufacturer's guidelines for the electrical interfaces. [See Fig. 1.2]

- Check if the structure of vehicle chassis and body are strong enough to carry the proper weight of the platform with its nominal load, and to resist the bending movement induced by the platform and its load. Check the stability of the vehicle

1.1



1.2

and the weight on the vehicle axles in function of the real proper weight of the HTL, and the load which is expected to be handled. The weights indicated in the technical documentation and price list are theoretical, and may vary according to the specific execution of the HTL.

- Make sure that the body is accurately fitted to the vehicle chassis. Place the vehicle on a even flat ground. [See Fig. 1.1]
- Always remove the battery clips and ABS plugs during fitting.
- Finish the HTL in accordance with the road legislation of the country where the vehicle will be registered.
- Welding should be done by qualified personnel only, and only to the extent that such is not forbidden by the manufacturer of the vehicle.
- When connecting hydraulic parts, make sure that the connections are totally clean, and that the hydraulic circuit doesn't get contaminated.
- Do not overpressure any lift functions (lift / close) before full completion of the installation.
- During fitting and testing, make sure that the HTL and its moving parts don't interfere with, or cause damage to the vehicle suspension, braking system, oil pipes and wiring circuits.
- Any modifications to the mounting plates and fitting procedures are strictly forbidden. No deviation is allowed without prior written approval from DHOLLANDIA.

1.1

- These fitting instructions aim to clarify and teach the work method required to fit DHOLLANDIA HTL successfully. On numerous occasions, reference will be made to the TECHNICAL SUMMARY of the various lift types. These TECHNICAL SUMMARIES contain quantified details for each individual lift type. Some illustrations in these fitting instructions therefore mention that they are an example, which means that they don't apply to each and every lift model covered by this handbook.

- The various steps of these fitting instructions are characterised by a LETTER reference in the left column of each page. This to help those fitting companies that wish to split-up the work between the different skills or specialties within the labour force.

G = General guide lines

E = Electrical work

M = Mechanical work / steel plating work

F = Finish & anti-corrosive protection

S = Test and put into Service

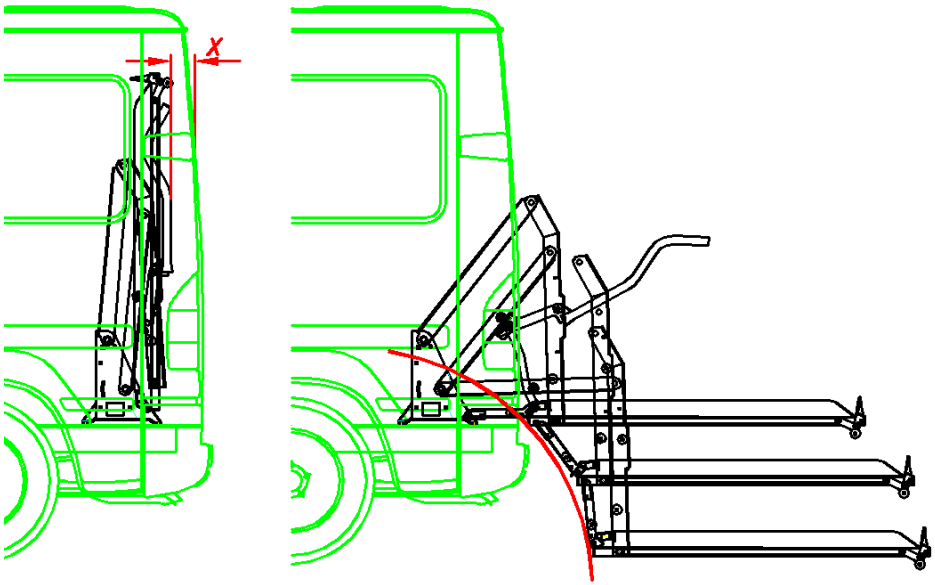
G M

2) PREPARATION WORK & POSITIONING

- Due to the wide range of applications for the DH-P20 / P21, detailed fitting information is not available for all vehicle types imaginable.
- Prior to fitting the HTL, and starting to drill holes etc... test if the HTL can do all movements fluently without interfering with the vehicle body or components (rear cross member of loading floor, bumper bar,...). [See Fig. 2.1]
- Remove all objects (spare wheel carrier, parts of the exhaust pipe, access step in the rear vehicle bumper) that could hinder the mounting, or that are not compatible with the HTL. For permanently removed parts, consult with the vehicle manufacturer for replacement solutions (e.g. Exhaust pipe modifications, more suitable types of bumper profiles,...).
- Observe a clearance of min. 10mm between rearmost point of the HTL (= lift arms or safety gates) and the closest point of the vehicle doors. [See X in Fig. 2.1, see Fig. 2.2]
- Depending on how deep the HTL is fitted inside the vehicle [see X in Fig. 2.3], the lower lift arm might hit the loading floor, and the maximum lift range might be reduced. Test prior to continuing.

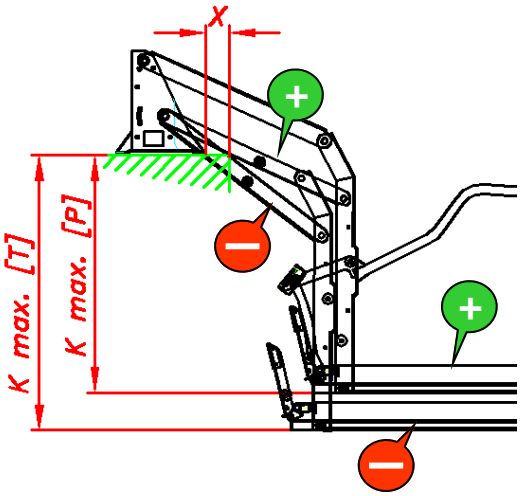
K max. [T]	Max. floor height in **T**heory
K max. [P]	Max. floor height in **P**ractice

2.1 EX.



2.2 EX.

2.3 EX.



G M

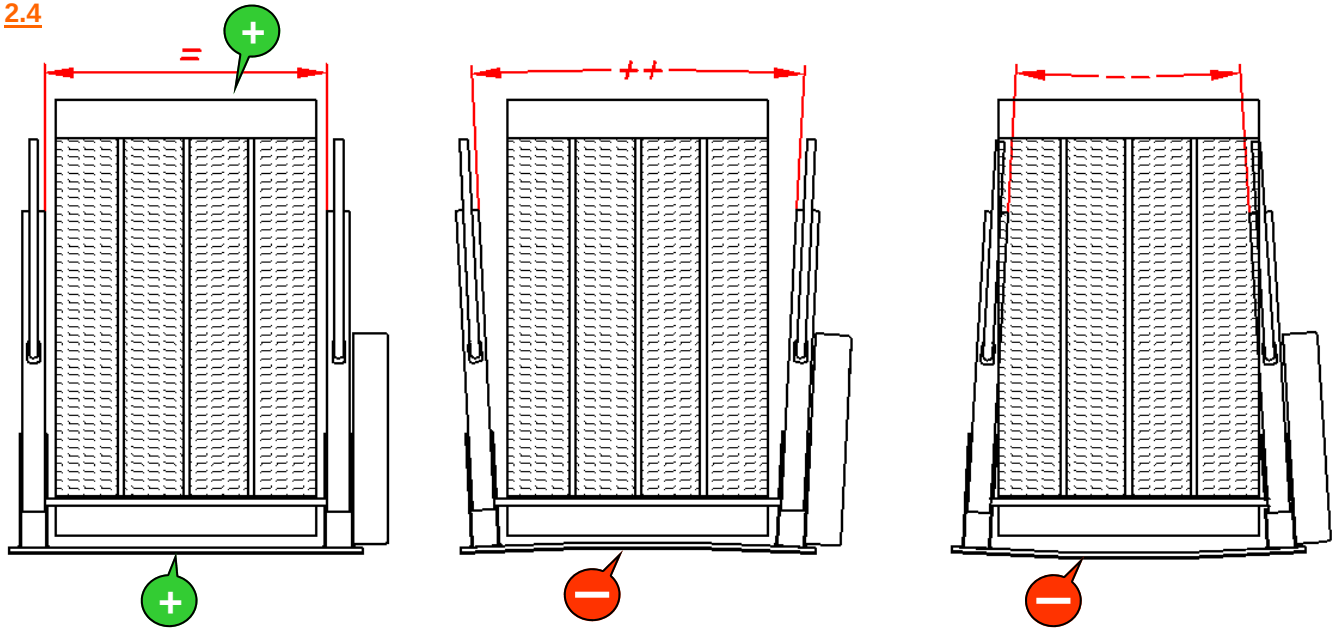
- Ensure that the HTL is mounted on a straight and rigid surface. Failure to comply will twist the floor plate of the frame when tightening the mounting bolts, and force the lift arms out of line. [See Fig. 2.4].

- After determining the initial position of the HTL, and prior to proceeding to fitting, drilling holes etc...,

1. consult the FITTING AND BODY BUILDING INSTRUCTIONS of the vehicle manufacturer , and follow their instructions on chassis drills [see Fig. 2.5];
2. check if the drill pattern of the floor plate of the HTL frame can be reproduced on the under side of the vehicle floor (potential problems: chassis beams, spare wheel carrier, fuel or other tanks, fluid or braking lines, etc...).

- Adjust the position of the HTL if needed. The frame must be mounted with 3 bolts / corner (x4). [See Fig. 3.1].

2.4



2.5

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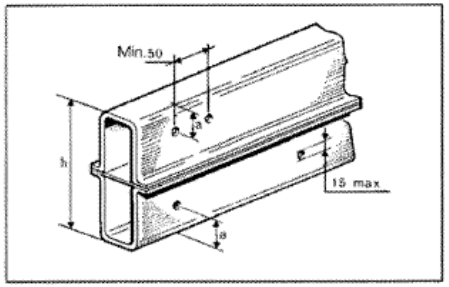
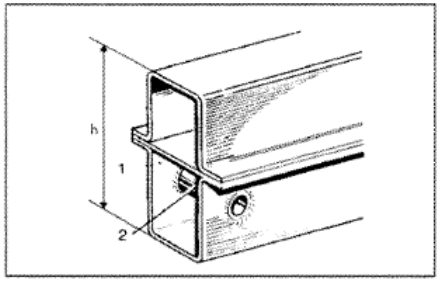
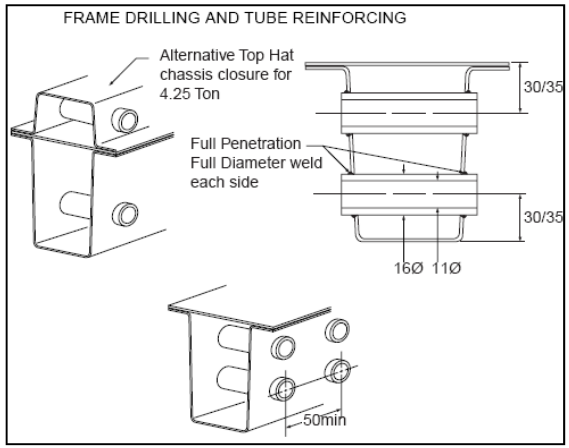






G M

3) FIXATION OF THE FRAME TO THE VEHICLE FLOOR OR CHASSIS

- Due to the wide range of existing fitting methods (fixation through the chassis, to the vehicle floor, to rails in the vehicle floor, etc...) only broad guidelines can be given within the scope of this fitting manual.

- The chosen fitting method shall be
  1. sufficiently strong to handle the rated nominal capacity;
  2. and provide an adequate spread of the induced forces over the whole mounting interface, to guarantee that no permanent deformation is caused to the vehicle chassis or loading floor during the lifting / lowering operations.
  3. Following EN 1756-2:2004, a safety factor of 2.1 must be taken into account.

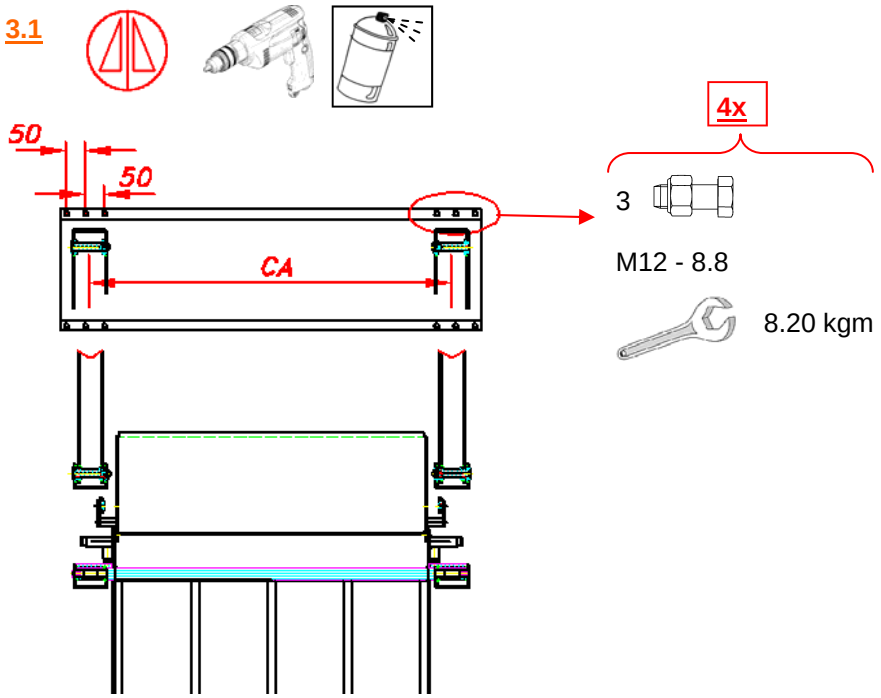
- The front line of bolts [see 1 on Fig. 3.2] is crucial and fully solicited when loading / unloading. The rear line of bolts [see 2 in Fig. 3.2] is less important, and mainly used to fix all sides of the HTL frame and absorb the forces incurred by the motion of the vehicle during driving.

- The fixation of the HTL is an important step. Its performance can be greatly affected by improper mounting and/or fastening.

- The frame must be mounted with 3 bolts / corner (x4). [See Fig. 3.1].

- Proceed with due diligence. Improper fastening sequence or torquing of bolts may cause the floor plate of the HTL to twist or buckle, and cause the platform to open / close unevenly. [See Fig. 2.4].

3.1



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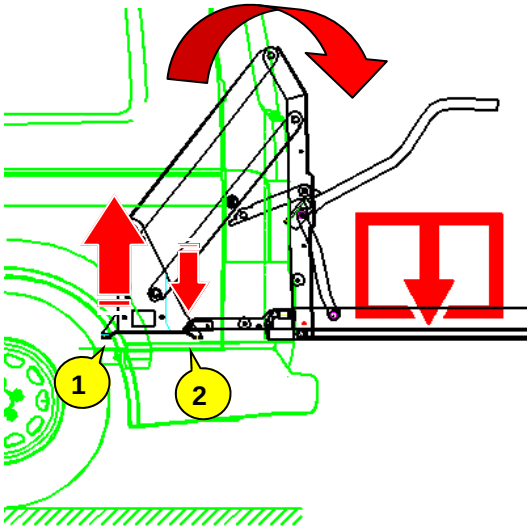


G M

- Examples for mounting are given on opposite side. Counter plates of min.60x60x5mm should be used [see 1 in Fig. 3.3], to be validated during weight testing in function of the intrinsic strength of the vehicle floor and chassis. Apply larger counter plates if the risk of permanent deformation of vehicle floor or chassis exists.

- If this method cannot be used, fabricated mounting plates can bolted horizontally through the chassis beams according to the FITTING AND BODY BUILDING INSTRUCTIONS of the vehicle manufacturer. [See 2 in Fig. 3.3]

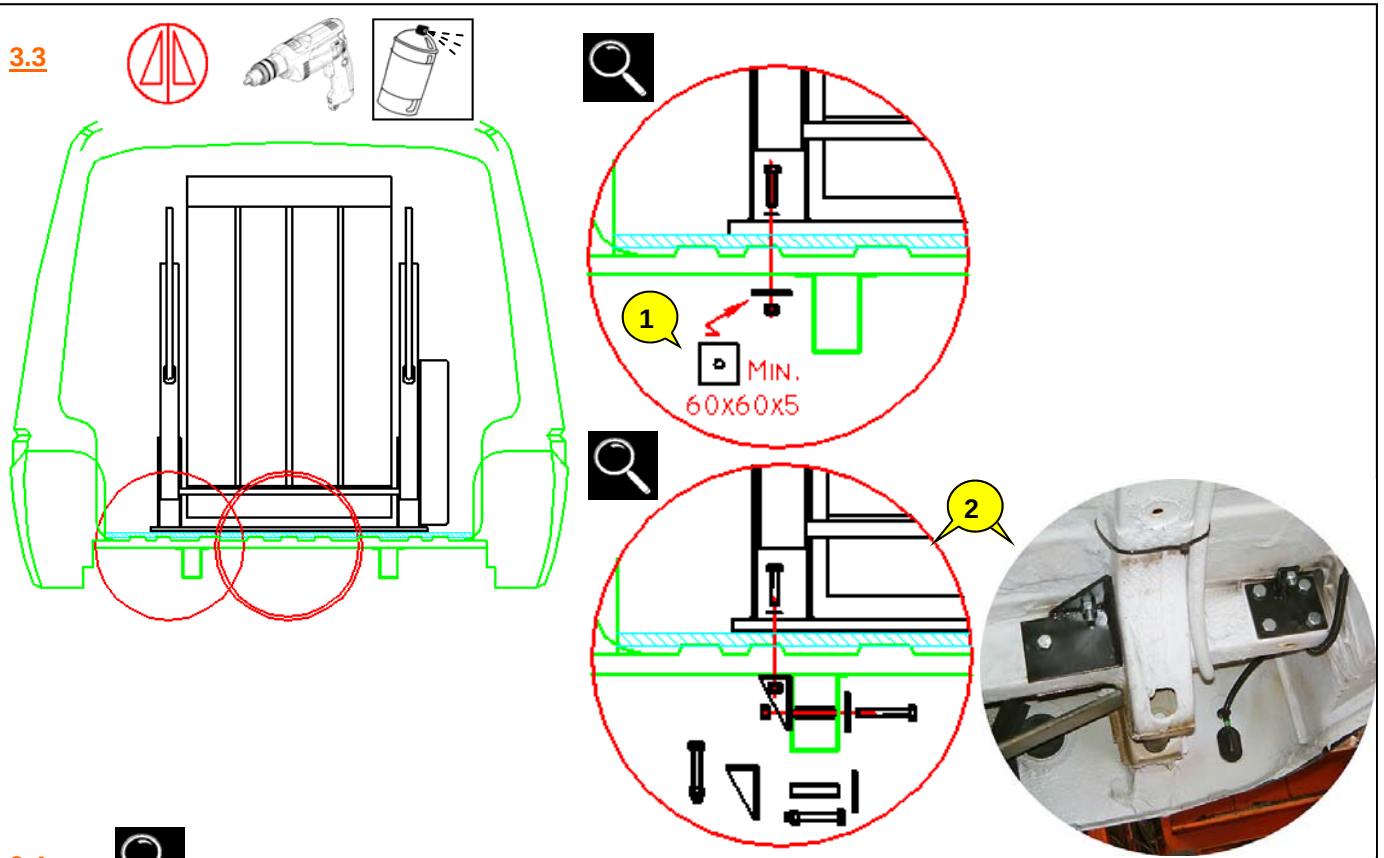
- If one of the corner bolts cannot be used, or if the vehicle floor proves to be too weak to keep the floor plate straight, additional bolts M12 - 8.8 can be mounted in the middle of the floor plate, [See Fig. 3.4]. Preferably, use chamfered bolts.

Remarks:

- The torque fastenings of all bolts should be checked after completion of the compulsory static and dynamic weight tests at the end of the fitting process, and retightened if required.

- Ensure that all freshly made chassis perforations are properly deburred, and that all metal work (cutting, drilling, welding, grinding,...) is properly treated with an anti-corrosive protection (e.g. Zinc-spray or Dinitrol). Allow to dry. Consult the FITTING AND BODY BUILDING INSTRUCTIONS of the vehicle manufacturer to take into account their instructions.

3.3



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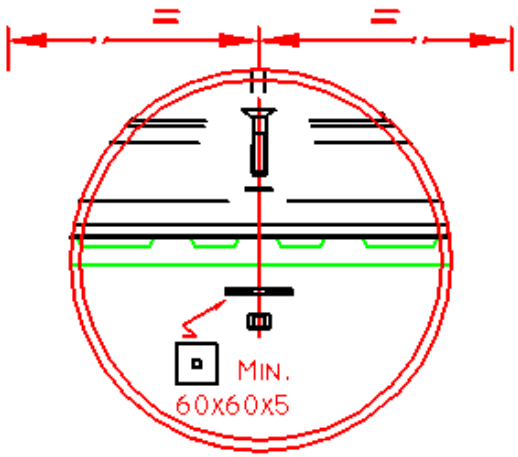


E

4) ELECTRICAL INSTALLATION OF THE HTL

§4.1– Mounting of the control box

- The HTL is pre-equipped with a wander lead, directly in the power pack, or via a plug connection. [See Fig. 4.1]
- The electrical installation is limited to mounting the 25 mm² battery and earth cable, and the main fuse of the power circuit.

§4.2– Connecting the power pack of theHTL to the vehicle batteries

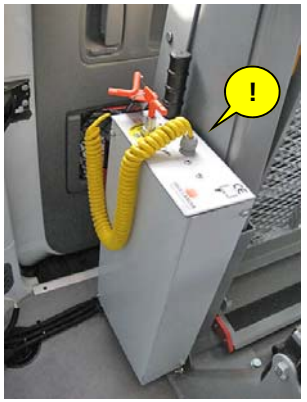
- Remove the side lid of the power pack

- Refer to the handbook of the vehicle manufacturer, and check :
  1. if an (-) earth link to the vehicle chassis / body is allowed;
  2. or if an insulated earth return to the vehicle batteries is required.

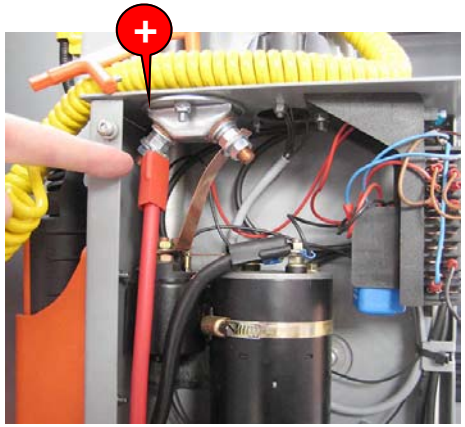
- Prepare a battery (+) cable (min. section 25mm²) to run from the incoming main pole on the starter solenoid [see Fig. 4.2] to the main fuse near the vehicle batteries.
- Prepare a (-) earth cable (min. section 25mm²) to run from the earth pole on the electric motor [see Fig. 4.3] to :
  1. the negative pole of the vehicle batteries (insulated earth return), or;
  2. To the vehicle chassis / body (if direct earth link is allowed by vehicle manufacturer) [See Fig. 4.4]

	(+) battery cable (min. 25mm²)
	(-) earth cable (min. 25mm²)

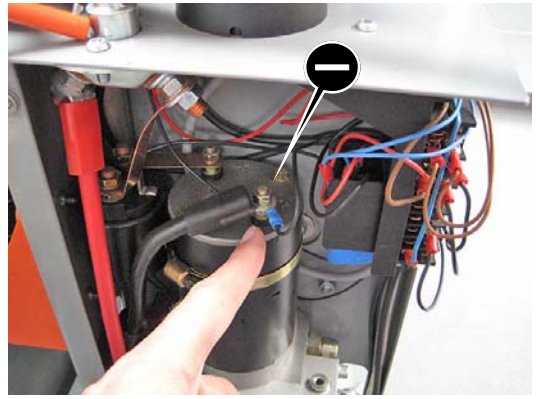
4.1



4.2



4.3



4.4

E

- Use insulating protection rubbers for both ends of the (+) battery and (-) earth cables [See Fig. 4.5]
- Protect the (+) battery and (-) earth cables over their full length by means of flexible corrugated tubes, suitable for automotive purposes.

- If the wiring comes close to the exhaust system, the vehicle catalyser, the particle filter,... or other hot components, CLASS 2 tubing (sustaining 100°C continuously and 125°C peak temperature) is required.

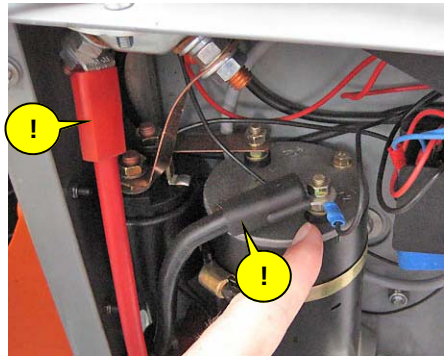
- Seek adequate routing for the (+) battery cable and (-) earth cable to their connection point.
  1. By drilling holes through the vehicle floor, and passing via the chassis, or;
  2. By passing on the inside, and using the cavities in the vehicle body to get join the vehicle battery.

- Ensure that the cables cannot be damaged, squeezed, heated or melted by any of the fixed or moving parts of the vehicle.

- Ensure also that the wiring doesn't interfere with, or isn't connected to the suspension, the breaking systems, oil pipes and wiring circuits of the vehicle. Ensure adequate fixation by means of cable ties every 10 cm. [Examples: See Fig. 4.6]

- If holes are drilled in the chassis or vehicle body to use riveted or bolted wire clips, refer to the FITTING AND BODY BUILDING INSTRUCTIONS of the vehicle manufacturer for their drill instructions, and apply sufficient anti-corrosion protection (zinc-spray, Dinitrol,...).

4.5



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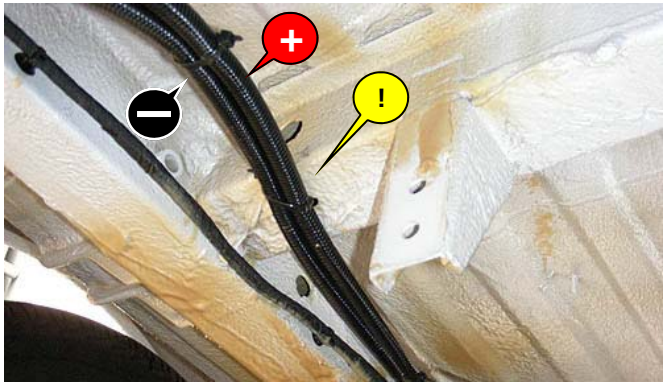

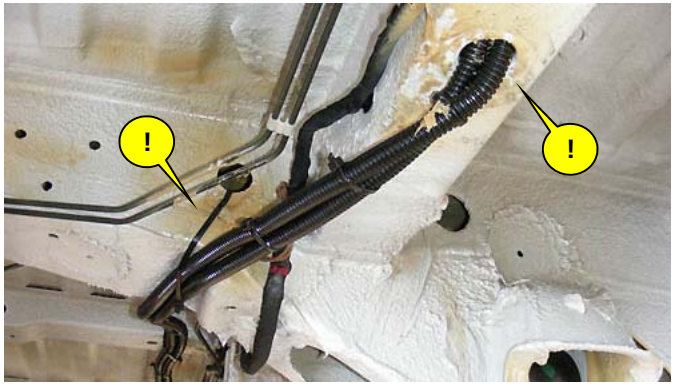

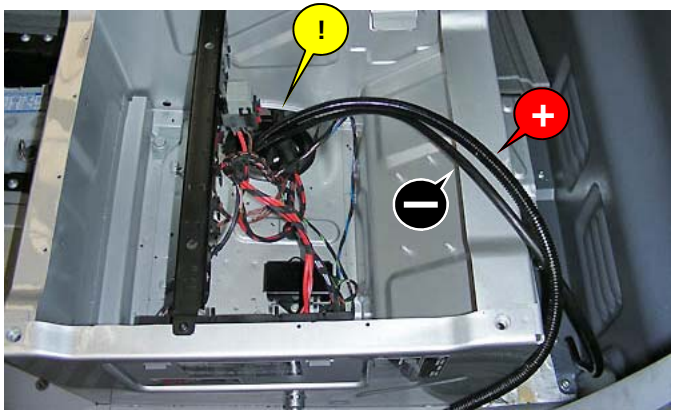

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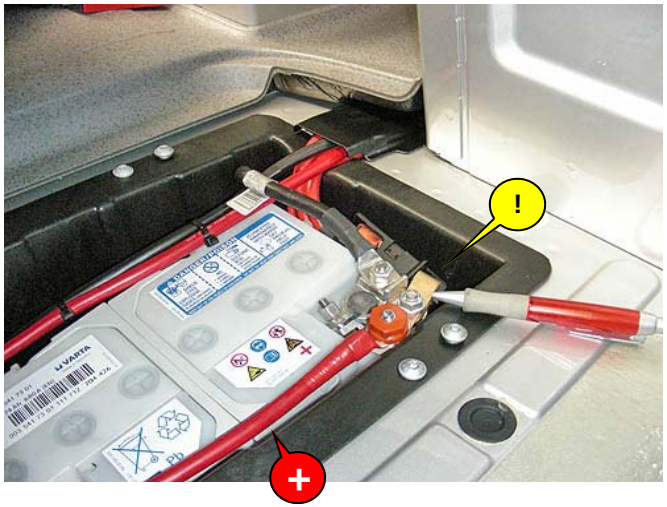
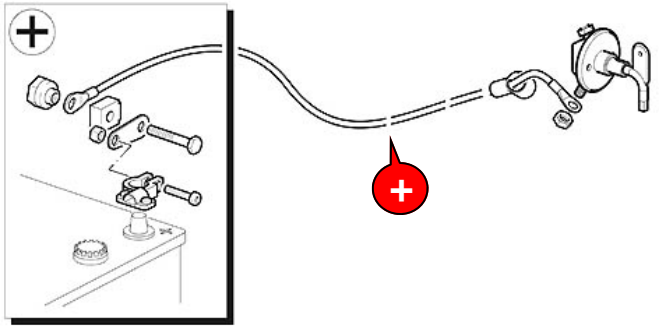
- At the other end of the PLUS circuit, mount the 250A HTL main fuse to the (+) positive pole of the vehicle battery, and connect the incoming (+) battery cable. [See Fig. 4.7]

- In case of insulated EARTH return circuit, connect the incoming (-) earth cable to the (-) negative pole of the vehicle batteries. [See Fig. 4.8].

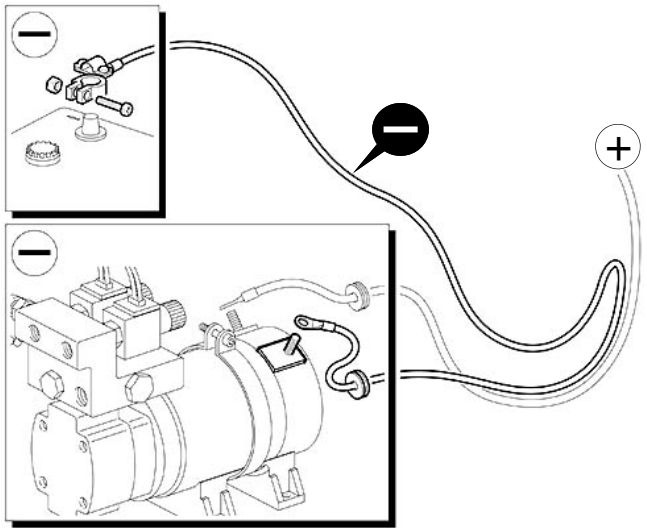
- Fasten all bolted connections of the PLUS and EARTH circuits and the main fuse firmly. Poor or loose fitting can lead to bad contacts and overheating of the electrical connections, and to premature failure.
- Apply a thick layer of anti-corrosive grease or Vaseline to the (+) and (-) battery connections.

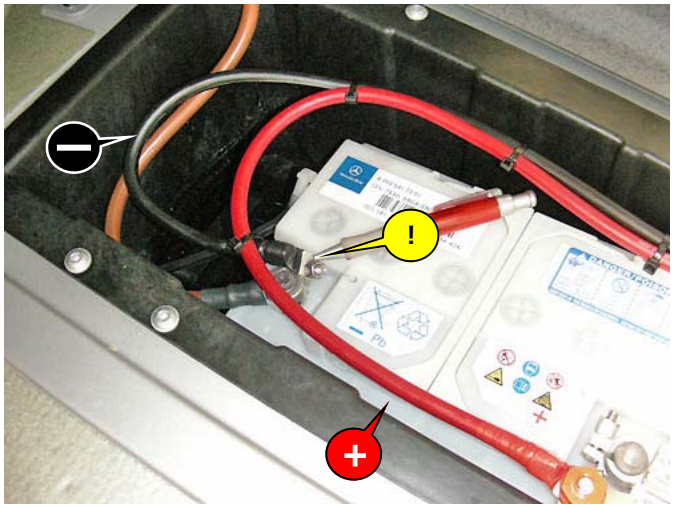
4.7





4.8





S

5) PUTTING THE HTL INTO SERVICE

- Ensure that all electrical connections are correctly finished, and that all mounting bolts are fastened with the required torque.

- Switch on the battery switch. Use the functions “lift” and “tilt” to bring hydraulic pressure in the hydraulic circuits. Do not overpressure at this stage.

- Improper use of the HTL can result in personal injury. Consult the USER’S MANUAL in case of doubt with regards to the correct use of the different lift functions, and of the applicable safety instructions.

- Do not exceed the rated nominal capacity of the HTL.

- Execute all movements several times to ensure all lift functions work properly. Pay special attention to:
  1. when closing: the correct arrival of the platform in travel position [see Fig. 2.4]
  2. when lifting / lowering at ground level: the correct function of the roll-stop device [see Fig. 5.1]
  3. When lifting / lowering: the correct function of the bridge plate [see Fig. 5.2].

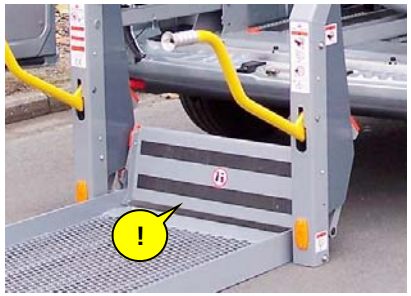
- Ensure that all safety decals, and decals on operating instructions are duly affixed. [See Fig. 5.3]

- Execute the complete put-into-service test, on the basis of the CHECKLIST FOR WEIGHT TEST AND COMMISSIONING included in chapter 3 of the user’s manual.

- During the weight test, check (and adjust if required) the hydraulic pressure to suit the nominal lift capacity of the HTL. [See fig. 8.4]. Ensure the actual capacity doesn’t exceed the rated nominal capacity of the HTL. Seal the pressure relief valve after that.

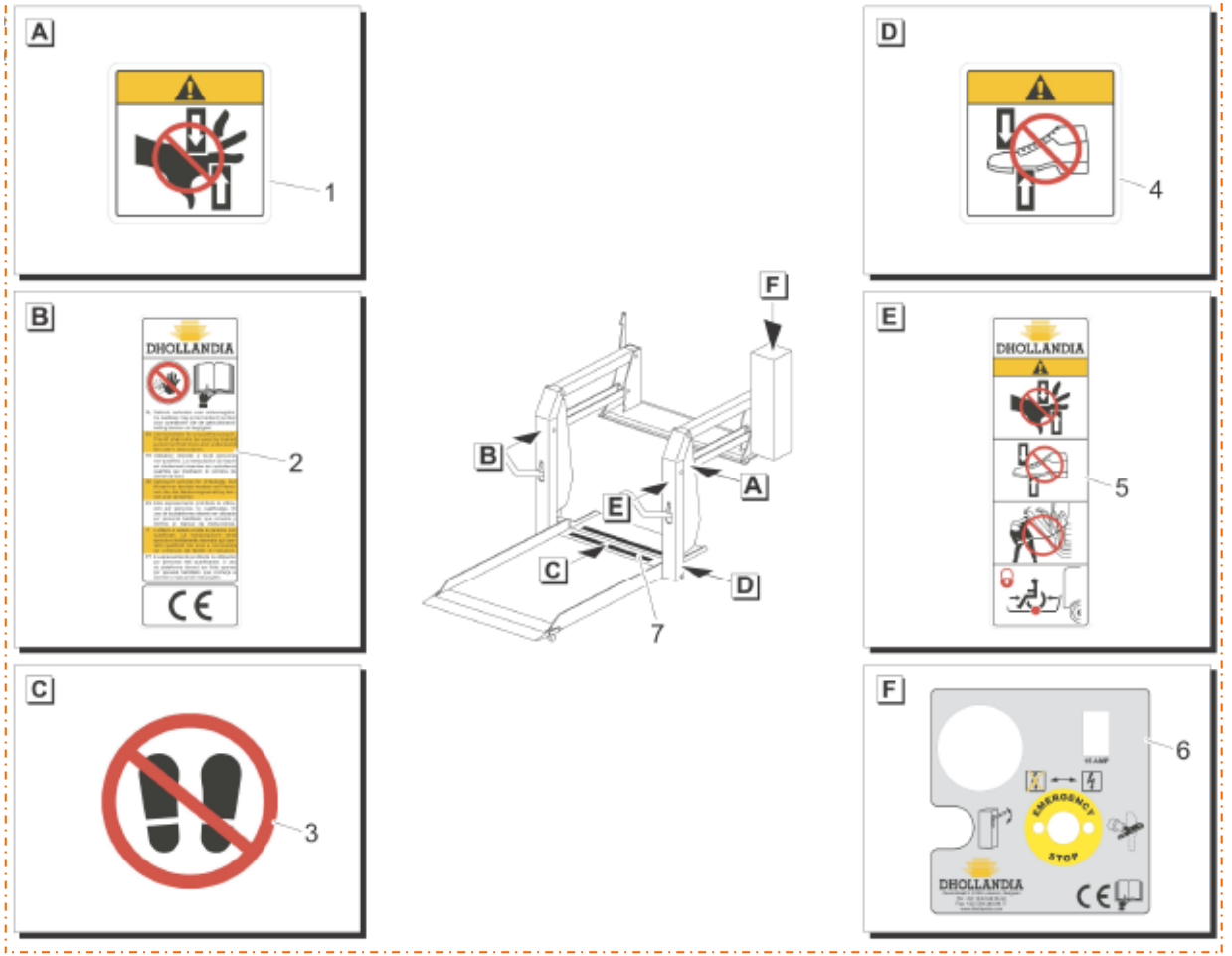
5.1

5.2



5.4

5.3



M

ANNEXES

A.1– Maximum thightening torques for bolts in kgm

The tightening torques of all bolted connections should be checked after completion of the compulsory static and dynamic weight test at the end of the fitting process, and re-tightened if required.

A.1

Max. moment Ma (kgm)			
Type of thread	Size	Strength class	
		8.8	10.9
Standard	M6 x 1	1.00	1.40
	M8 x 1.25	2.40	3.30
	M10 x 1.5	4.70	6.80
	M12 x 1.75	8.20	11.50
	M14 x 2	12.90	18.50
	M16 x 2	19.50	28.50
Fine	M14 x 1.5	13.50	19.50
	M16 x 1.5	20.80	30.00
	M20 x 1.5	30.00	-
	M24 x 2	45.00	-

Type : Linear passenger lift DH-P20 – Oct. 2008/...		DHOLLANDIA
Power pack : G-VZ-01..02	Valve : –	
Plan N° : Sch_P20-S962-2008-01	Date : 14/10/2008