Service booklet

FlexBox

EN 12642 XL structure

EN 12640 lashing points

of

Series 5000 / 5300 / 5500 / 50000 / 60000

humbaur.com

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FlexBox

Serial No. _

Size _

Vehicle-
Identification
Number (FIN) _

mark
towing vehicle _

ÿ

Please enter your FlexBox and the identification with the towing vehicle.

The dimensions/technical data of your FlexBox can be found on the type plate or in the XL certificate.

When you take over the FlexBox, have the handover inspection recorded.

Instructions for use

We congratulate you on your new Humbaur FlexBox body and thank you for your trust.

This inspection booklet will help you use the structure for many years and is intended to document the maintenance status.

However, this requires an annual inspection to maintain the necessary traffic and operational safety.

Instructions are given in the following pages.

This inspection booklet serves as proof of identity during traffic checks. Therefore, always keep the inspection booklet with your vehicle.

The complete technical documentation should always be carried with you.

Excerpt from XL certificate:

The condition of the vehicle body must be checked annually by the vehicle owner/vehicle user by a qualified person in accordance with VDI 2700 and documented in accordance with the manufacturer's specifications.

Please ensure that the specified inspection intervals are adhered to on time and that the inspection services are carried out by workshops authorized by Humbaur GmbH.

The test applies to all components used for load securing in accordance with VDI 2700 and/or EN 12640 & EN 12642.

Otherwise the load securing certificate will lose its validity!

The factory equipment must not be changed.

Our numerous Humbaur service partners are available to carry out the inspection work for you.

Experienced specialists ensure reliable testing.

Contents of this operating manual

1 Safety and General Information

The chapter "Safety and General Information", starting on page 5, contains safety-relevant information on the proper handling of the body and details on vehicle identification as well as important service addresses.

Read this chapter before your first ride.

2 checkpoints

In the chapter “Checkpoints”, starting on page 9, you can read about vehicle components that need to be checked, such as the front wall, the side walls, the roof, the rear portal doors and the load securing elements.

3 Audit evidence

You can have the exams entered in the “Examination Record” chapter, starting on page **31 .**

1 Security and General information

Safety first!

Pass on all warnings and instructions to other users or support personnel!

The operator or specialist workshop is responsible for providing personal protective equipment and adhering to protective measures in the workplace!

Ensure that the inspection/repair can be carried out safely!

WARNING

Improper troubleshooting Improper troubleshooting

can lead to component failure - risk of accident!

ÿ Have faults rectified only by a qualified specialist workshop.

In the event of major malfunctions, please contact our **Humbaur Service** (see contact addresses listed below).

CAUTION

Short circuit in the electrical system

People can suffer burn injuries.

Short circuits can set the body/ vehicle on fire.

Before performing any work on the electrical system, please observe the following points:

ÿ Disconnect all plug connections to the tractor.

ÿ  Disconnect all plug connections connections to external power supplies.

ÿ Switch off all consumers.

ÿ Connect the negative terminal (-) to the Battery off.

Use insulated tools.

ÿ Only allow work on electrical systems to be carried out by qualified personnel.

WARNING

Flammable / toxic Operating materials

Fuels/refrigerants and their vapors are highly flammable and harmful to health - risk of poisoning!

ÿ  Do not smoke and keep Keep open flames away.

ÿ Avoid sparking.

ÿ  Do not breathe the fumes a.

ÿ Remove any spilled / spilled operating materials immediately.

ÿ  ,,, Wear personal protective equipment.

identification

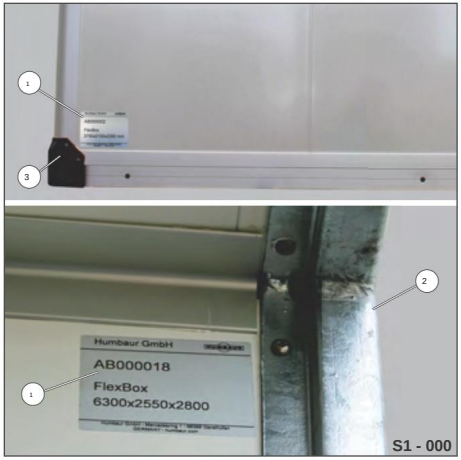

Fig. 1 FlexBox nameplate
1 serial number
2 Heckportal
3 FlexBox front side, in FR right

To identify your body, a serial number is affixed to the type plate sticker (Fig. 1).

The sticker is attached to the inside of the rear portal (Fig. 1/2) in the body and to the outside of the front (Fig. 1/3).

If you have any questions about the setup, you must provide this number.

Humbaur Service

Any warranty claims will be void if any modifications or dismantling of the structure or its components are carried out without our prior written consent.

Technical customer service

tel.: +49 821 24929 0

fax.:+49 821 24929 540

Email: service@humbaur.com

Humbaur Service Partner

can be found at www.humbaur.com

under Dealer/Service/Repair

Manufacturer's address

Humbaur GmbH

Mercedesring 1

86368 Gersthofen (Germany)

tel.: +49 821 24929 0

fax.:+49 821 24929 100

www.humbaur.com

info@humbaur.com

Spare parts

Use only original Humbaur spare parts!

Spare parts can be ordered by specifying the **Serial number** and part number can be obtained as follows:

- Online, email, telephone

Contact Parts Logistics

tel.: +49 821 24929 0

fax.:+49 821 24929 200

E-Mail: parts@humbaur.com

General / Conditions for loading

Fig. 2 Example: Front wall
1 XL sticker

If the following conditions are observed, the regulations for load securing VDI 2700 are deemed to be met; additional securing devices (low or high load securing devices) are not required. Direct lashing, friction-enhancing pads, etc.) are not required:

– Form-fitting loading across the direction of travel
- the load lies flat against the front wall, the side walls and the rear wall.

- The load can be stowed up to the full body height.

Fig. 3 Example: Rear wall
1 TÜV Nord confirmation

- The coefficient of sliding friction between the loading area and the load, or between load components, depends on the ground conditions and the vehicle configuration. The coefficient of sliding friction should be > 0.3.

- During every transport, all movable body parts (doors, floor beams, load securing beams) must be used and secured as intended.

- If the load (partial load) is not at the rear portal (> 150 mm), additional load securing in accordance with VDI 2700 is required.

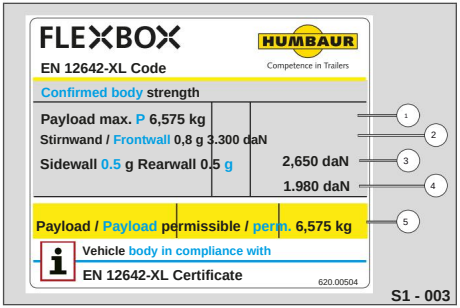

Fig. 4 Example: XL sticker

1 max. payload (P) - tested
2 max. force to the front wall - static (0.8 g) - dynamic
3 max. force to side wall static (0.5 g) - dynamic
4 max. force to the rear wall static (0.5 g) - dynamic
5 Payload permitted

The XL sticker indicates the tested maximum values for body strength.

In addition, the permissible payload (Fig. 4/5) for the body is specified.

The permissible payload is crucial for load securing.

The maximum dynamic centrifugal forces were calculated with a factor of 0.8 or 0.5 xg (g= weight force to be secured) tested.

2 Checkpoints

2 General information on the exams

Features

All equipment features must comply with the load securing certificate.

General checkpoints are:

– Welds for cracks,

– rivets and screws for tightness,

– door locks for function,

– Visual inspection of the bonding / panel joints,

– Check the corner joints of the panels for leaks,

– Soil condition / abrasion,

– Lashing points / lashing devices for deformation tion.

Damage must be repaired immediately at an authorized Humbaur workshop or replaced with original Humbaur spare parts.

Important instructions

ÿ Observe the accident prevention regulations during all maintenance work.

ÿ Observe the guidelines of the environmental protection.

ÿ Replace damaged and non-functioning vehicle parts with original Humbaur spare parts.

ÿ Observe the “Principles for the inspection of vehicles by experts” BGG 916.

Examination regulations

ÿ Carefully check all listed points/connections.

ÿ If necessary, document the equipment and test points to be carried out separately - possibly with the help of a checklist.

ÿ Ensure / check before Work, with which torques the screw connections must be tightened.

Tightening torques

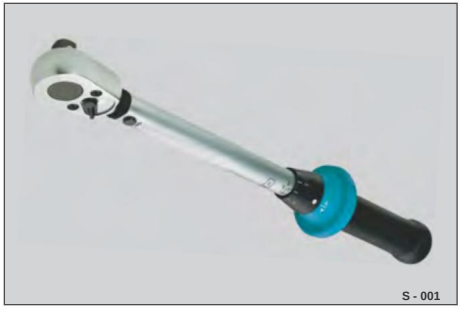

Fig. 1 Torque wrench

Thread strength	8.8	Strength 10.9
	Tightening torque	
M8	25 Nm	35 Nm
M10	50 Nm	70 Nm
M12	87 Nm	122 Nm

Tab. 1 Tightening torques

Check screw connections

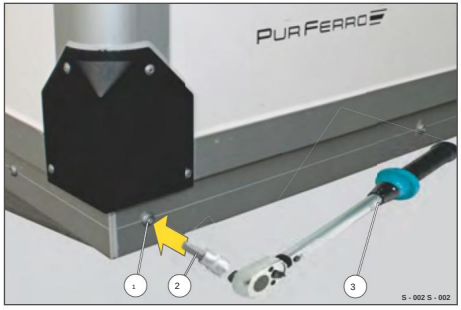

Fig. 2 Screw connections

1 screw connection
2 attachment keys
3 torque wrench scale

ÿ To tighten screw connections (Fig. 2/1), use a calibrated torque wrench.

key (Fig. 1).

ÿ Use a suitable attachment key (Fig. 2/2).

ÿ Set the torque wrench to the required tightening torque value (Fig. 2/3).

ÿ Check / tighten the screw connections with the tightening torques (see Table 1 on page 11)

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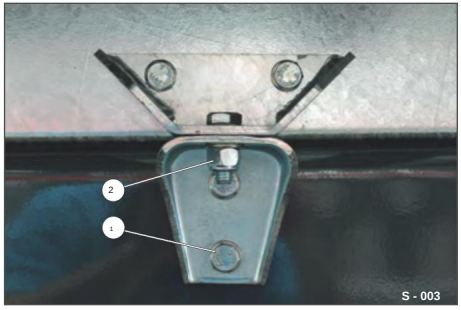

Fig. 3 Strength / Design

1 screw (indication on the head)
2 mother

ÿ Take the information from the screw connections themselves (embossing 8.8 or 10.9).
See example (Fig. 3/1).

When using self-locking Nuts:

ÿ Use self-locking Nuts (Fig. 3/2) only once - the clamping effect of the plastic ring decreases when used again.

ÿ Replace self-locking nuts after unscrewing the screw connection.

Front / side wall outside

Fig. 4 Front wall

1 corner connector

2 edging profiles (vertical)

3 lower chord profiles

4 frames

5 sandwich panel joints

The sandwich panels on the front and side walls must be checked for damage and secure fastening by gluing, riveting or screwing.

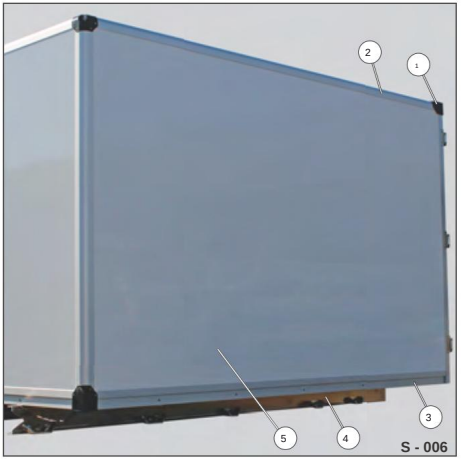

Fig. 5 Side wall

1 corner connector

2 edging profiles (horizontal)

3 lower chord profiles

4 frames

5 sandwich panel joints

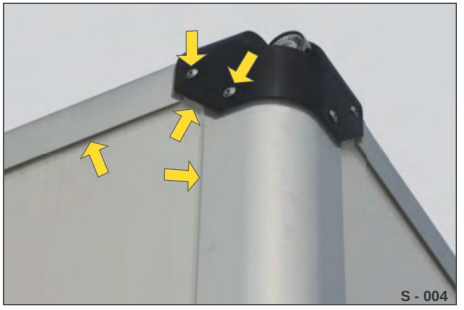

Fig. 6 Corner connection / edging profiles above

ÿ Check that the rivets are tight.

ÿ Check the bond for cracks.

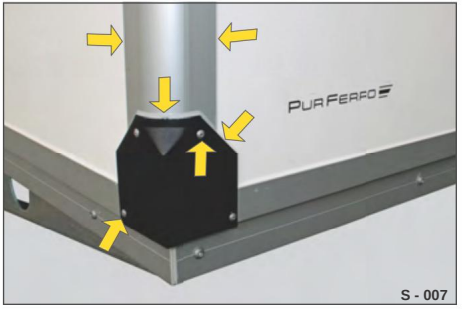

Fig. 7 Corner connection / edging profiles below

ÿ Check that the rivets are tight.

ÿ Check the bond for cracks.

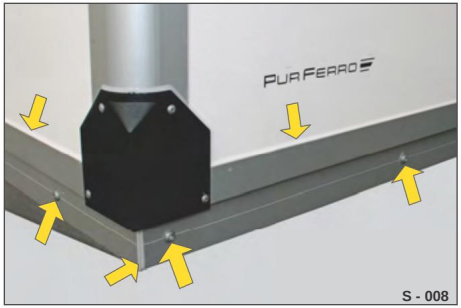

Fig. 8 Bottom chord profiles corner front side

ÿ Check that the screw connection (external hexagon socket) on the front and sides of the trailer is tight.

ÿ Check the bonding on the front and sides for cracks.

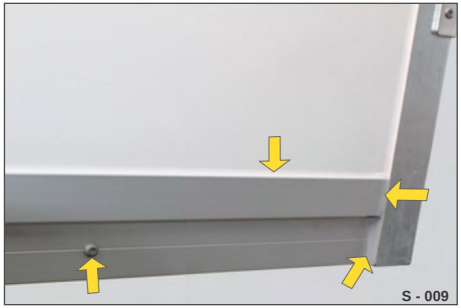

Fig. 9 Bottom chord profiles corner rear side

ÿ Check the bonding at the rear to the portal frame for cracks.

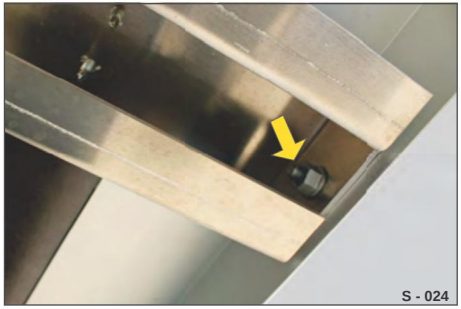

Fig. 10 Bottom chord profiles bottom view

ÿ Check the screw connection (nut from the inside).

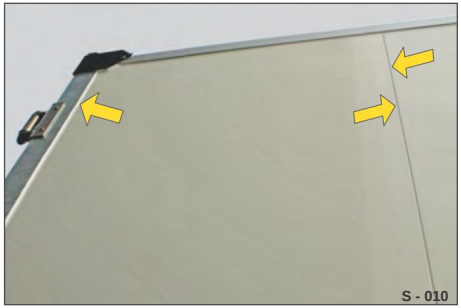

Fig. 11 Sandwich panels

ÿ Check the butt joints of the sandwich panels against each other for cracks.

ÿ Check the bond to the portal frame for cracks.

Front / side walls outside (radiator)

Fig. 12 Front / side wall

1 corner connector

2 edging profiles (horizontal)

3 edging profiles (vertical)

4 sandwich panel joints

5 frames

The sandwich panels on the front and side walls must be checked for damage and secure fastening by gluing, riveting or screwing.

The fastening/sealing of the cooling unit must be checked.

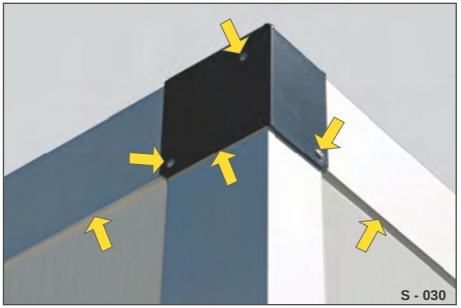

Fig. 13 Corner connection / edging profiles above

ÿ Check that the rivets are tight.

ÿ Check the bond for cracks.

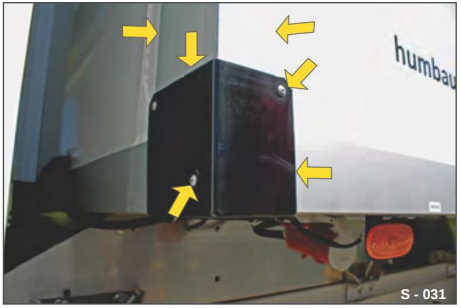

Fig. 14 Corner connection / edging profiles below

ÿ Check that the rivets are tight.

ÿ Check the bond for cracks.

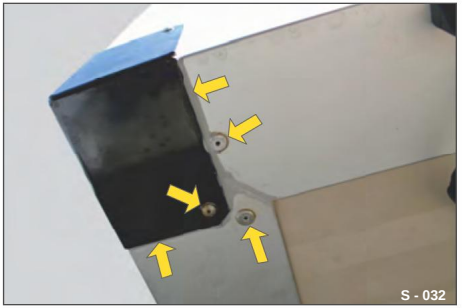

Fig. 15 Corner connection / edging profiles below

ÿ Check that the rivets are tight.

ÿ Check the bond for cracks.

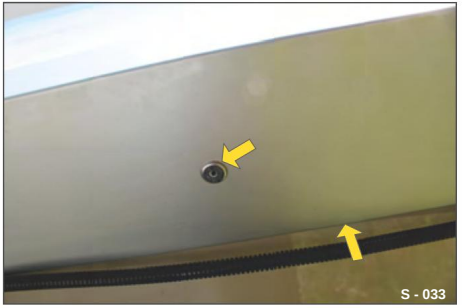

Fig. 16 Edging profiles bottom view

ÿ Check that the rivets are tight.

ÿ Check the bond for cracks.

Front / side wall inside

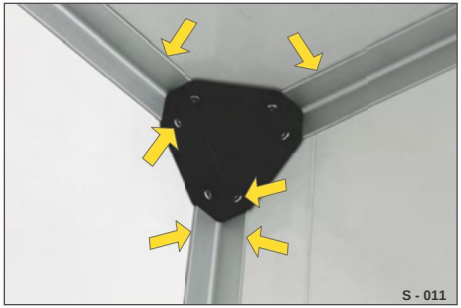

Fig. 17 Corner connection / edging profiles above

ÿ Check that the rivets are tight.

ÿ Check the bonding of the edging profiles for cracks.

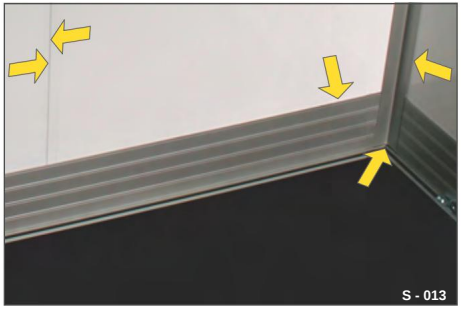

Fig. 18 Corner connection at the bottom end

ÿ Check the bonding of the edging profiles vertically.

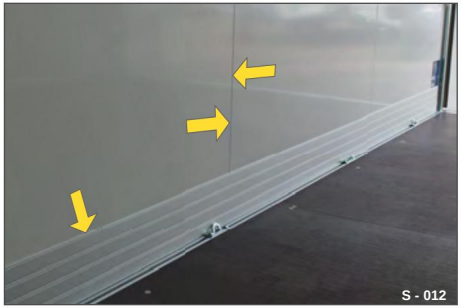

Fig. 19 Side walls below

ÿ Check the bonding of the skirting board for cracks.

ÿ Check the butt bonding of the sandwich panels against each other.

Walls at cooler

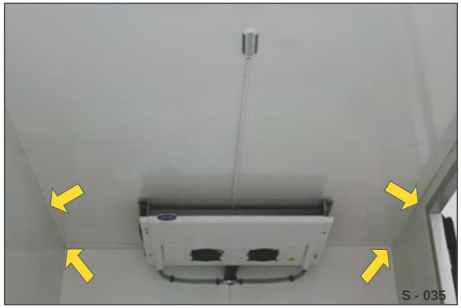

Fig. 20 Bonding the walls above

ÿ Check the bonding/sealing all around for cracks.

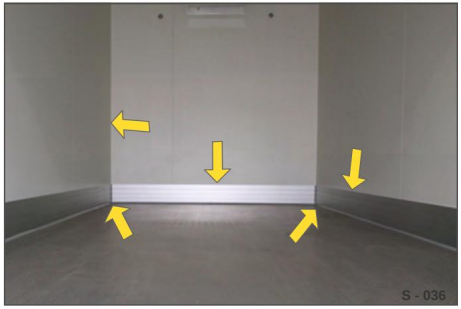

Fig. 21 Bonding the walls below

ÿ Check the bonding/sealing all around for cracks.

GRP roof

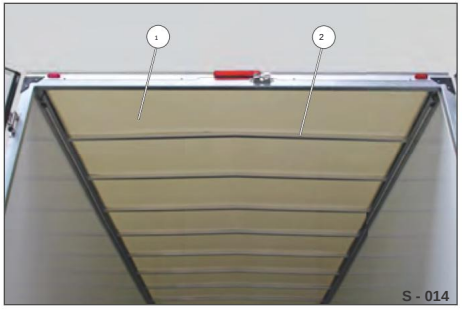

Fig. 22 Roof structure

1 GRP roof

2 aluminum bow bars

ÿ Check the GRP roof for cracks.

ÿ Check the bow aluminum bars for deformation and completeness.

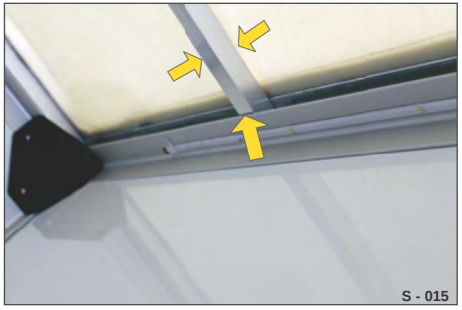

Fig. 23 Bow connection to side wall

ÿ Check the bonding of the Bow aluminum bars in edging profiles for tight fit.

ÿ Check the riveting of the GRP roof in the edging profile.

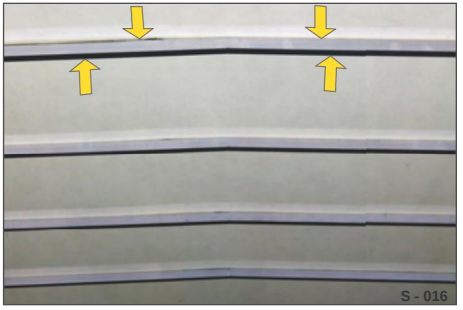

Fig. 24 Aluminum rods for the GRP roof

ÿ Check the bonding of the Aluminum bow bars on the GRP roof for cracks.

Sandwichdach

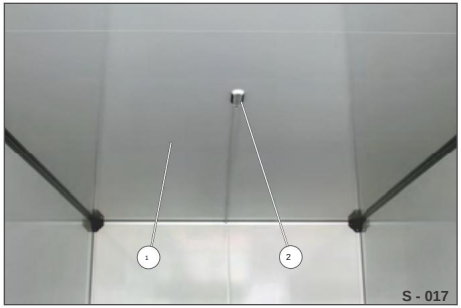

Fig. 25 Roof structure

1 sandwich plates

2 ceiling lights

ÿ Check the sandwich panels for damage.

ÿ Check the ceiling light or
the optional LED strips on the side for tightness and, if necessary, function.

Fig. 26 Panel connection to side wall

ÿ Check that the sandwich panels are securely bonded to the edging profiles.

ÿ Check the butt joint for cracks.

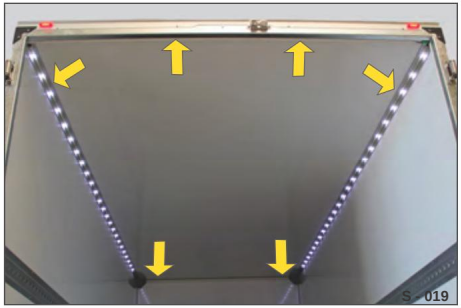

Fig. 27 Panel connection front / rear

ÿ Check that the sandwich panels are bonded securely to the edging profile at the front.

ÿ Check the bonding and
Screw connection at the rear of the portal frame.

Floor (screen-printed panels)

Fig. 28 Floor structure inside

1 screen printing plates

ÿ Check the screen printing plates for cracks/ damage.

ÿ Have defective screen printing plates replaced.

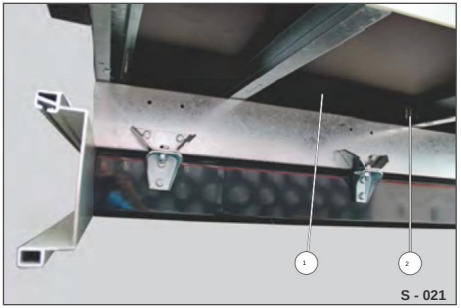

Fig. 29 Floor structure from below

1 screen printing plates from below
2 screw connection

ÿ Check the screen printing plates from below for cracks / damage / stone chips.

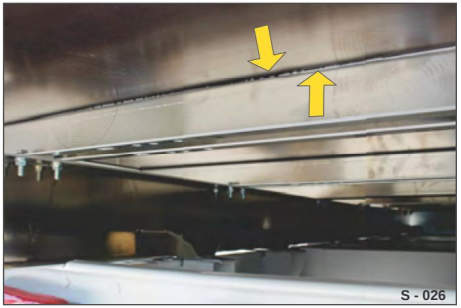

Fig. 30 Bonding

ÿ Check the adhesion of the screen pressure plate to the support profiles from below.

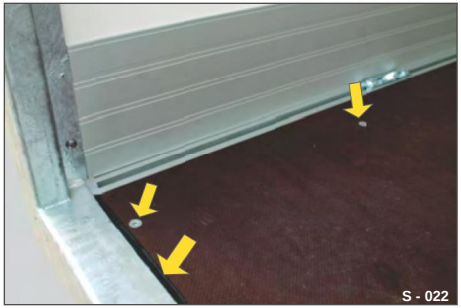

Fig. 31 Screen printing plate at the rear

ÿ Check the adhesion of the screen pressure plate to the rear portal frame.

ÿ Check that the screw connection is tight (Torx).

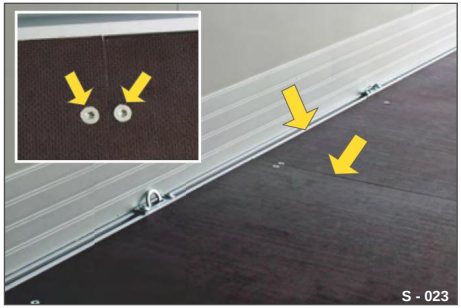

Fig. 32 Screen printing plate with lashing rail on the side

ÿ Check the bonding of the screen printing plates against each other.

ÿ Check that the screw connection is tight (Torx).

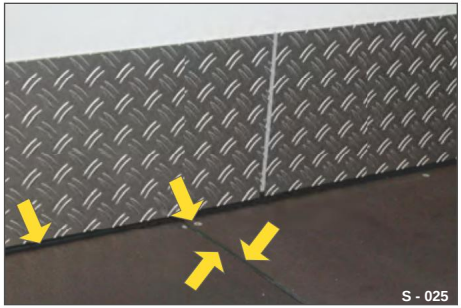

Fig. 33 Screen printing plate without lashing rail

ÿ Check the bonding of the screen printing plates against each other.

ÿ Check that the screw connection is tight (Torx).

Sandwich floor (cooler)

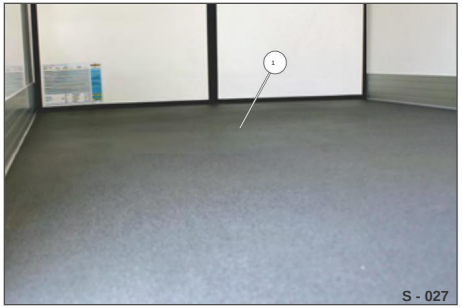

Fig. 34 Floor structure inside

1 floor with GRP covering layer

ÿ Check the floor structure for cracks/damage.

ÿ Have a defective sandwich
replace the floor.

Fig. 35 Floor structure inside

1 Floor with anti-slip

ÿ Check the floor structure for cracks/damage.

ÿ Have a defective sandwich
replace the floor.

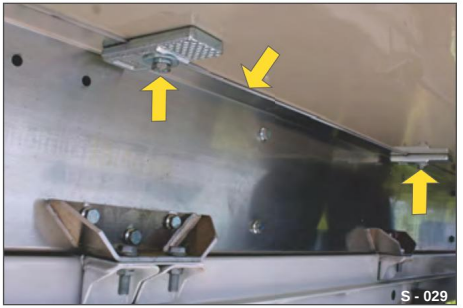

Fig. 36 Bottom view

ÿ Check that the fastenings to the frame are tight.

ÿ Check the bond to the frame for cracks.

Steel rear frame (galvanized)

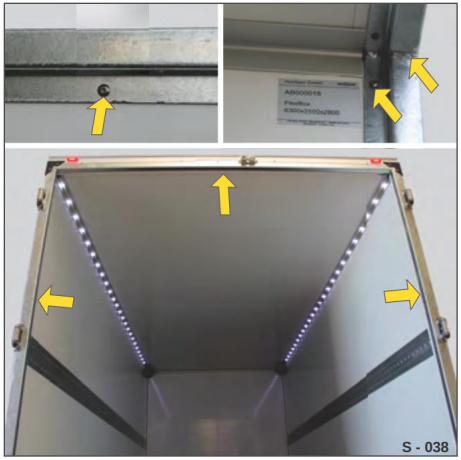

Fig. 37 Rear frame complete

ÿ Check that the screw connections around the frame are tight.

ÿ Check the welds in the corners of the frame for cracks.

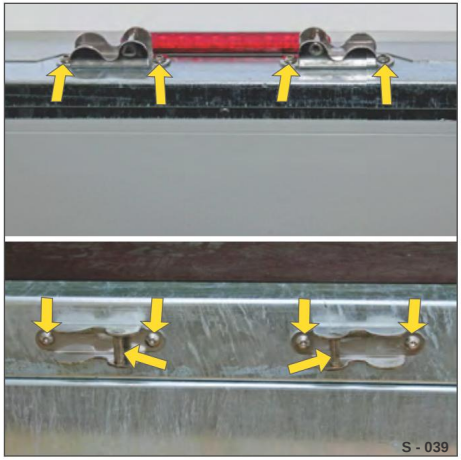

Fig. 38 Door lock top / bottom

ÿ Check that the screw connections of the door locks are tight.

ÿ Check the bolts for deformation/cracks.

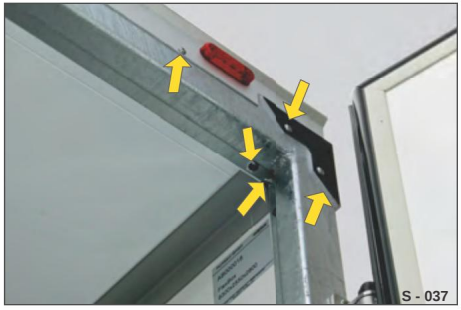

Fig. 39 Corner connection outside

ÿ Check the bond to the portal frame for cracks.

ÿ Check that the rivets are tight.

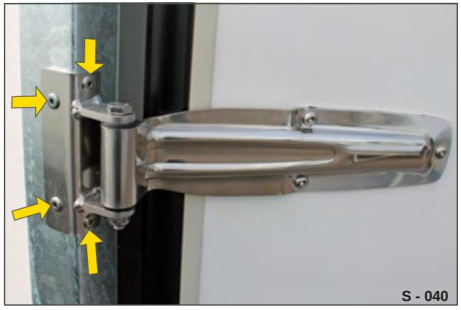

Fig. 40 Door hinges

ÿ Check that the rivet connection of the door hinges is tight.

Stainless steel rear frame (radiator)

Fig. 41 Rear frame complete

ÿ Check that the screw connections around the frame are tight.

ÿ Check the welds in the corners of the frame for cracks.

Fig. 42 Door lock top / bottom

ÿ Check that the screw connections of the door locks are tight.

ÿ Check the bolts for deformation/cracks.

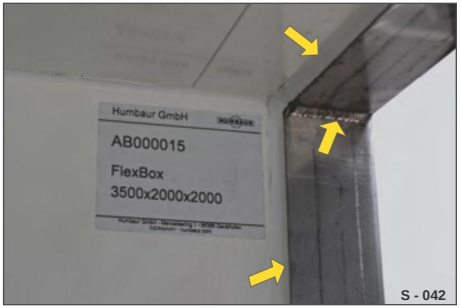

Fig. 43 Corner connection top / bottom

ÿ Check the bond to the portal frame for cracks.

ÿ Check the welds.

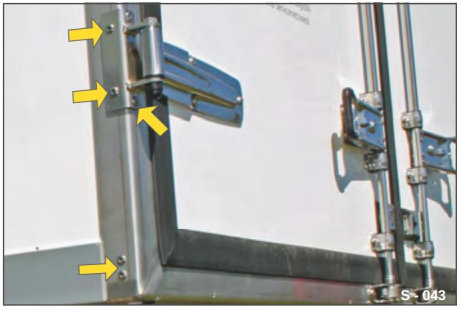

Fig. 44 Door hinges

ÿ Check that the rivet connection of the door hinges is tight.

Stainless steel door frame / door leaf (cooler)

Fig. 45 Side door open

1 door frame

2 door leaves
3 door stops

ÿ Check the closing function of the door leaf - it must close tightly.

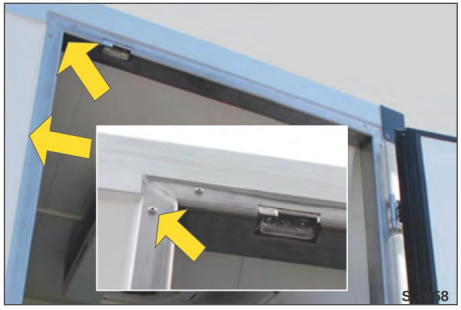

Fig. 46 Door frame connection

ÿ Check that the rivets are tight.

ÿ Check the bonding/sealing for cracks.

Fig. 47 Corner connection top / bottom

ÿ Check the welds for cracks.

Fig. 48 Door hinges

ÿ Check that the screw connections of the door hinges are tight.

door hinges

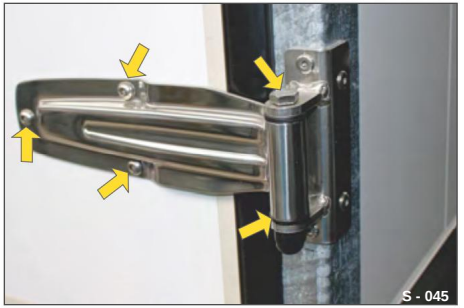

Fig. 49 Door hinges steel frame

ÿ Check that the screw connections are tight.

ÿ Check the threaded bolt and bearing washers for deformation.

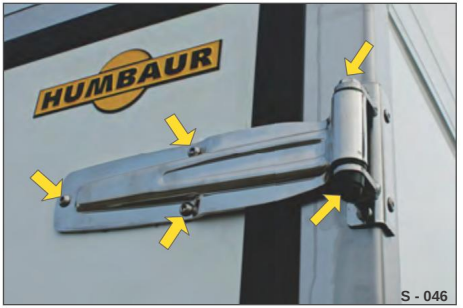

Fig. 50 Door hinges stainless steel frame (cooler)

ÿ Check that the screw connections are tight.

ÿ Check the threaded bolt and bearing washers for deformation.

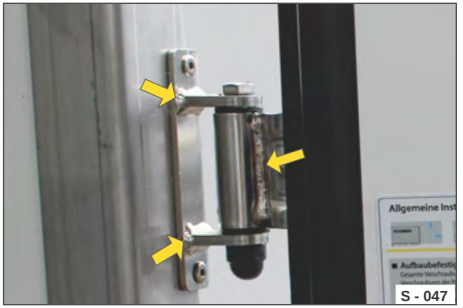

Fig. 51 Hinge bearing

ÿ Check the welds for cracks.

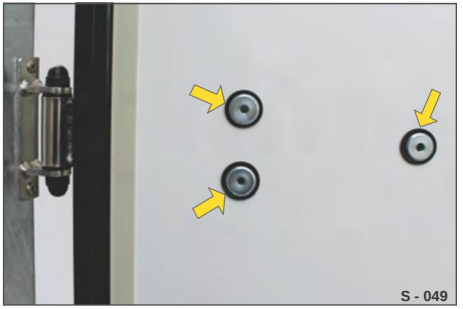

Fig. 52 Door hinge fastening inside

ÿ Check the screw heads / seals tions for tight fit.

Espagnolette locks surface-mounted

Fig. 53 Espagnolette locks **1**

Locking mechanism at the top / locking hook
2 Guide
3 solid pipe (16 mm)
4 locking handle
5 Bottom locking / locking hook

ÿ Check that the espagnolette locks
are working properly.

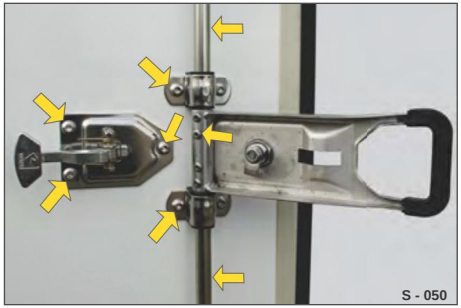

Fig. 54 Check locking handle / solid tube

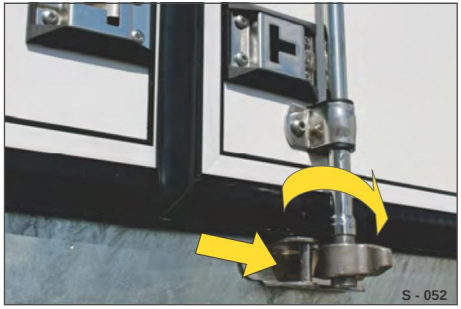

Fig. 55 Locking points (example: below)

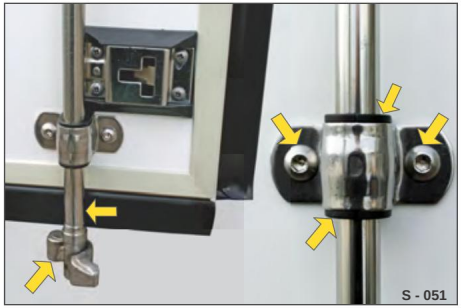

Fig. 56 Guides / locking hooks

ÿ Check that the door leaves
close properly and are not distorted.

ÿ Check the solid pipe for deformation
tion and cracks.

ÿ Check the screw connection of the guides.

ÿ Check the locking points
top and bottom.

ÿ Check the locking handle for
Function.

ÿ Check the locking hooks for deformation /
abrasion.

Concealed espagnolette lock

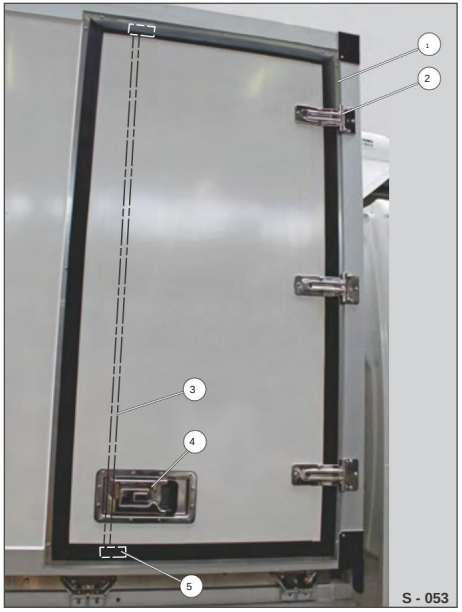

Fig. 57 Espagnolette locks **1** Door frame

2 hinges

3 solid pipe (16 mm)

4 locking handle

5 Locking / locking hook

ÿ Check that the espagnolette locks are working properly.

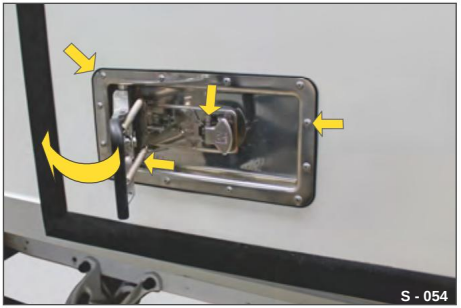

Fig. 58 Checking the locking handle

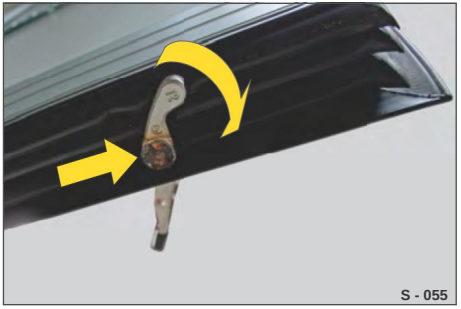

Fig. 59 Locking hook (example: below)

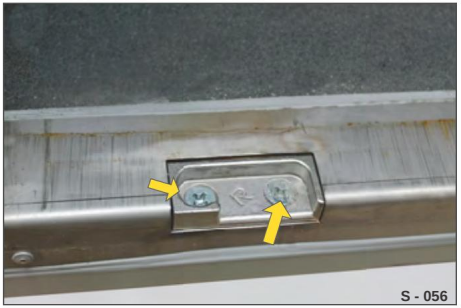

Fig. 60 Locking points (example: below)

ÿ Check that the door leaves closes properly and is not distorted.

ÿ Check the locking points at the top and bottom for abrasion.

ÿ Check the locking handle for Function.

ÿ Check rivet connections and sealing for tightness.

ÿ Check the locking hooks for deformation / abrasion.

ÿ Check that the screw connections are tight.

Anchor rails with lashing eyes

Fig. 61 Adjustable lashing eyes

1 Second point EN 12640 - 8.0 (800 daN)
2 Anchor points
with variably adjustable lashing eyes

ÿ Check the screw connections at each lashing point.

ÿ Check the lashing points for deformation.

ÿ Check the bonding of the anchor rail in the floor for cracks.

Anchor locks (LOAD-LOK)

Fig. 62 Check anchor channels

1 anchor rail countersunk
2 rivets (6x per meter)
3 screws resting
4 Anchor rail attached
5 stickers lashing forces max.

ÿ Check the screw or rivet connections on the anchor channels.

ÿ Check that the lashing force sticker is present.

ÿ Check the bonding of the anchor rail in the wall for cracks.

Locking beam (1839D)

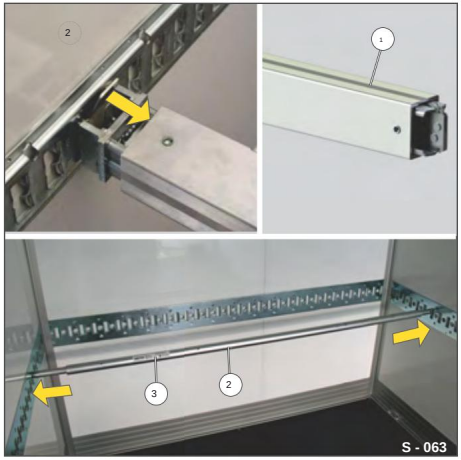

Fig. 63 Check locking bar

1 locking beam Load-Lok double-decker system
2 The round beam
3 stickers with max. force information

ÿ Check the function of the locking beam / round beam - this must lock into place properly.

ÿ Check the locking beam / round beam for deformation.

ÿ Check that the sticker for maximum force information is present.

Subframe fastening

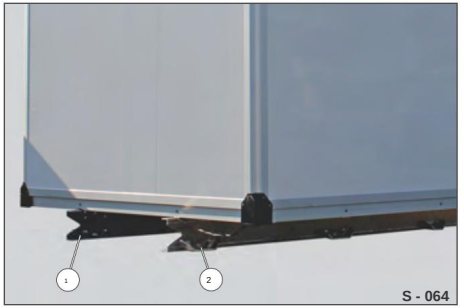

Fig. 64 Example: Subframe
1 subframe
2 attachment points for chassis on towing vehicle

The subframe is depending on the towing vehicle Manufacturers vary in design

rung.

The attachment points vary in design and number.

During the test, all fastening points (screwed, welded, riveted) must be taken into account.

The vehicle manufacturer's specifications (bodywork guidelines) must be taken into account/adhered to!

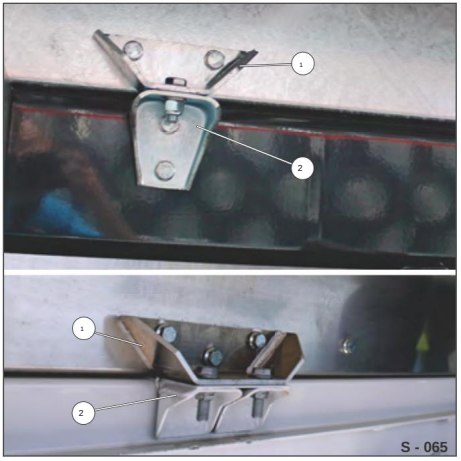

Fig. 65 Screw connection
1 bracket on the subframe, screwed on
2 console on the chassis of the towing vehicle

ÿ Check the screw connections on the console.

ÿ Check the console itself for cracks/deformation.

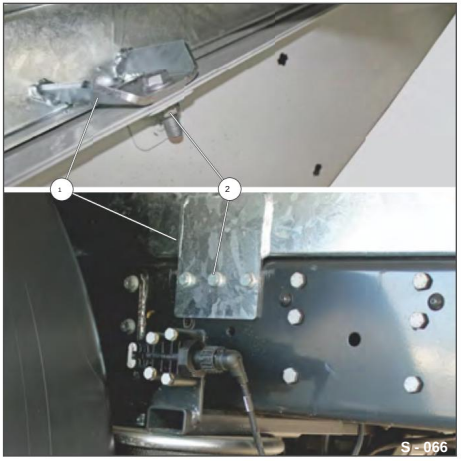

Fig. 66 Welded connection
1 bracket on the subframe, welded
2 screw connection on the chassis of the towing vehicle

ÿ Check the screw connections on the console.

ÿ Check the welds of the Console / clamps for cracks.

Test points for tail lift

Fig. 67 Example: Tail lift

The inspection points can be found in the maintenance documents of the tail lift manufacturer!

The tail lift certificate must be carried along!

Document the test points carried out in the tail lift manufacturer's documentation.

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3

Audit evidence

(once a year)

3 exams

All relevant inspection points must be carefully checked once a year and repaired if necessary!
Successful completion of the examination may only be confirmed after the work has been completed!

No.	Test date	Stamp / Remark	Signature of the examiner
1			
2			
3			
4			
5			

No.	Test date	Stamp / Remark	Signature of the examiner
6			
7			
8			
9			
10			

Examinations

No.	Test date	Stamp / Remark	Signature of the examiner
11			
12			
13			
14			
15			

No.	Test date	Stamp / Remark	Signature of the examiner
16			
17			
18			
19			
20			

Examinations

No.	Test date	Stamp / Remark	Signature of the examiner
21			
22			
23			
24			
25			

We wish you a
pleasant and
safe journey!

MAKE IT POSSIBLE

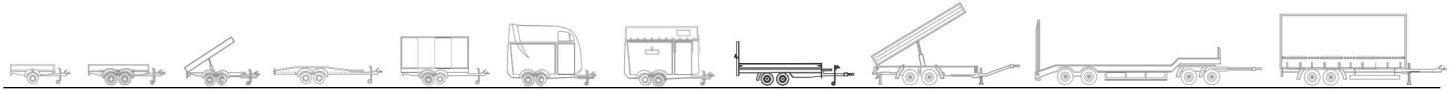
HUMBAUR
MAKE IT POSSIBLE

Safety notice!

The body may only be used in strict compliance with all road traffic, professional association and load securing regulations.

All images are sample images and may show optional extras - these are not binding.
Deviations and changes are model-specific. No liability is assumed for errors and misprints.
taken.

Status: 08/2019 / Item: 007.00176



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