CARGO FLOOR®

Additional assembly instructions

Installation steel C-floor
For execution 160 mm H32
INTRODUCTION

The assembly instructions outlined in this book will enable you to assemble the Cargo Floor system you have purchased correctly. Every effort has been made, by means of diagrams and text, to ensure a clear and simple installation. To ensure the durability and reliability of this revolutionary loading and unloading system, it is important that you follow the assembly instructions as outlined in this book completely, and use quality materials in accordance with the specifications. Please note that the guarantee is only valid if the Cargo Floor system has been assembled in accordance with these assembly instructions. The latest available version can always be found on our internet site: www.cargofloor.com
TABLE OF CONTENTS ADDITIONAL PAGES ASSEMBLY INSTRUCTIONS CF500 SL-C

Important recommendations and guidelines for the commissioning ................................................................. 4
Mounting the guides.................................................................................................................................................. 7
Drilling the holes in the floor profiles.................................................................................................................. 7
Securing the floor profiles to the drive unit.......................................................................................................... 13
Mounting the side profile...................................................................................................................................... 13
Sealing the front and rear sides of the floor.......................................................................................................... 14
Technical specifications......................................................................................................................................... 15

TABLE OF CONTENTS OF THE ENCLOSED DRAWINGS

System drawing H100 15/160........................................................................................................................... S2
Drawing Twister Wide......................................................................................................................... B-1
Drawing Cargo Snap-on................................................................................................................................. B-2

The following instructions are available next to these instructions
Assembly CF100 SL-C system
Assembly CF500 SL-C system
Assembly CF500 SL-C system Power Speed
Assembly CF500 SL-C Leak Proof Centre Drive
Assembly CF3 LP-2 15-160
Assembly CF800 system
Assembly Semi Leak Proof (SLP) system
Assembly steel C-floor H42

Please see: www.cargofloor.com [Technical info & Downloads]
IMPORTANT RECOMMENDATIONS AND GUIDELINES FOR THE COMMISSIONING

Before putting the Cargo Floor loading and unloading system into operation, follow the recommendations provided below and check the specified checkpoints to avoid damage to the Cargo Floor system and the vehicle. Please review the important instructions before operating the Cargo Floor system and loading cargo into the vehicle. Likewise, before loading cargo, check the operation of the various control switches/valves to familiarize yourself with how the system works. We strongly recommend that you perform these checks when picking up the vehicle from the dealer so that a resident expert can answer your questions and provide you with any necessary advice or guidance you may require.

Important:

• Always check that the selected loading or unloading direction is actually activated and occurring!!
• If the system fails to start, turn off the Cargo Floor system and the hydraulic pump and follow the recommendations and guidelines provided below. Do not repeatedly try to start the system as this may result in damage to your Cargo Floor system and/or vehicle.
• After use, turn off the Cargo Floor system and hydraulic pump. Set switches to the "0" position and the lever in neutral.

In case of doubt or uncertainty about these recommendations and guidelines, always contact your dealer or an official workshop.

The Cargo Floor system comes standard with an operating manual, but if this has not been supplied, please contact your dealer or download it from the official Cargo Floor website: WWW.CARGOFLOOR.COM

A) Always open the vehicle's doors before turning on the hydraulic pump. Note! Build-up of pressure against the doors can force them open, which may cause some of the cargo to fall out of the vehicle. That is why it is always advisable to use the pneumatic lock, if provided.

B) 1. Check that the vehicle's (quick-detachable) couplings are properly connected to the P (Pressure line, min. 20mm) and the T (tank/return line, min. 25mm). Also check that the couplings are fully tightened or slid completely into each other.
   IMPORTANT: the pressure and return line connectors may not be reversed or exchanged to prevent dirt or water from entering the lines when connecting them!
   2. Before connecting, check that the non-return valves can open easily (check: the non-return valves should open easily when pressed with the finger, if not, potential pressure build-up in the hydraulic lines may be preventing the system from starting).
   NOTE: Incorrectly connected or unopened hydraulic couplings will cause serious damage to the Cargo Floor system and the vehicle.

C) The vehicle (pump) must be fitted with a pressure relief valve that is set to 250 bar. If fitted, check that the dual-function lever (function: tipper/Cargo Floor) is in the Cargo Floor position. Pressure may not exceed the maximum adjusted and allowable operating pressure of the Cargo Floor system. An incorrectly adjusted pressure relief valve can cause damage to the Cargo Floor system and the vehicle.

D) During operation, the (hand)brake of the vehicle must always be applied. You must, however, move the vehicle forward on time to unload it quickly in order to prevent unnecessary strain and wear to the floor and the vehicle.

E) Use of a wireless remote control is permitted only if it is fully tested before the start of each loading or unloading operation. Always check if the function you have selected is actually activated and taking place. If, for example, you have accidentally pressed the load function when you actually meant to press the unload function, irreversible damage may occur to the Cargo Floor system and the vehicle.

F) During operation of the Cargo Floor system, all existing STOP and control knobs/levers must be freely accessible.

G) The pressure filter element needs to be replaced at least once a year. If the couplings between the vehicle and the Cargo Floor system are regularly removed, it is advisable to check the pressure filter for dirt build-up and replace the pressure filter element more often, if necessary. If provided, also check the return filter (not supplied with the Cargo Floor). Failure to replace a filter element on time may cause damage to or malfunctions in the Cargo Floor system and the vehicle.
H) Moving parts must be shielded. Always maintain at least 10m distance from the Cargo Floor system when it is in operation.

I) In the event of malfunctions/maintenance work, you may approach the Cargo Floor system only if all equipment, including the hydraulic pump, has been shut off, and the Cargo Floor system and the electro-hydraulic aggregate have been disconnected from the power supply and pump.

J) Regularly check and, if necessary, tighten any loose bolts that secure the aluminium floor profiles to the Cargo Floor system. All such checks can simply be performed inside the vehicle itself by qualified personnel. The Cargo Floor system must, however, be turned on in unloaded condition and the person performing the check must place his finger half on the floor profile and half on the bolt. There should be no appreciable movement/space between the floor profile and bolt. Failure to check these bolts may lead to damage to the Cargo Floor system. During this check, a second person must also be present to switch off the Cargo Floor system.

K) Check that the minimum required amount of oil is present (150L). Too little oil in the hydraulic tank will cause damage to both the pump and the Cargo Floor system.

L) Do not allow the number of strokes to exceed the maximum allowable 16 power strokes per minute. Only a Power Speed Cargo Floor system may deliver up to 23 beats per minute. A higher number of power strokes can cause damage to the Cargo Floor system and the vehicle.

M) Hydraulic lines, couplings and hoses with very small diameters will cause damage.

N) If the Cargo Floor system fails to start or operates incorrectly, the Cargo Floor system and the hydraulic pump must be shut down immediately. Subsequently, check all the checkpoints before switching the pump and the Cargo Floor system back on. To prevent the oil from overheating, regularly check the oil temperature by CAREFULLY and CAUTIOUSLY touching the line and or oil tank. If either is too hot to the touch, stop touching them right away. WARNING: TOUCHING OVERHEATED OIL AND COMPONENTS CAN CAUSE BURNS!

O) The cause of failure or malfunctioning of the Cargo Floor system may also be due to other hydraulic components that may or may not be connected to the same hydraulic circuit of the Cargo Floor system.

P) Jamming of the floor profiles caused by the transport of abnormal loads and or the freezing of the floor or of the product to the floor may result in damage to the Cargo Floor system and the vehicle. Recommendation: in the event of freezing, stop the system and try to find a hall (heated area) to allow the product to thaw.

Q) Because the electrical power supply of the Cargo Floor system is often connected to the lighting circuit of the vehicle, it is advisable to turn on the lighting throughout the operation of the system.

R) Maintenance and repairs to the Cargo Floor system may be only performed by qualified personnel. Use only original Cargo Floor components to ensure maximum reliability and long service life.

S) Maximum cargo weight is subject to the limits set by law and applicable regulations. Even if the system can transport heavier loads, the law determines the maximum limit. Excessively heavy cargo can cause damage to the Cargo Floor system and the vehicle.

T) Check that the correct type and quality of hydraulic oil is used. The use of incorrect oil type may cause damage to the Cargo Floor system and the pump.

U) Check the vehicle for correct voltage. Make sure there are no open electrical connections. A faulty electrical system can cause damage to the Cargo Floor system and the vehicle.

V) Check that the bulkhead, if present, is functioning smoothly and properly. A properly functioning bulkhead ensures that the product is unloaded in a clean and quick fashion. A malfunctioning bulkhead may extend the unloading time and cause damage to the vehicle.

W) Use of the Cargo Floor system by unqualified personnel can cause damage to the Cargo Floor system and the vehicle.

X) Excessively high oil temperatures will cause damage to the Cargo Floor system and other hydraulic components, such as the pump.

Y) It is at all times advisable to stop the Cargo Floor system when all the piston rods are retracted. This is usually the case when the floor profiles are positioned towards the unloading end (vehicle doors). Unretracted piston rods may cause damage to the Cargo Floor system.

Z) To prevent damage to the floor profiles, exercise caution and limit the dump height as much as possible. The transport of unauthorized goods, such as aggressive, corrosive, hot, hard, sharp and viscous materials may cause damage to the Cargo Floor system and the vehicle. Avoid loading and unloading sharp objects. Loads that are softer than the hardness of the floor profiles will extend the service life of your system; if in doubt, use a protective cloth or consult your dealer.
AA) Forklift trafficable. In principle, the floors are completely trafficable and can be driven over by forklifts, but always consult your dealer for advice on the maximum loads allowed on your vehicle. Overloading will cause damage to the Cargo Floor system and the vehicle.

BB) Always return emergency control(s) to their original non-activated position after use.

CC) During the operation of the system, test the temperature of the oil by touching the side of the tank. If the oil is so hot that you cannot continue to touch the tank, switch off the pump to allow the oil to cool off and determine what is causing the overheating. Stop loading or unloading if the oil is too hot, as this will irreversibly cause damage to the Cargo Floor system and the other hydraulic components.

WARNING: TOUCHING OVERHEATED OIL AND COMPONENTS CAN CAUSE BURNS AND INJURIES!

DD) During loading and unloading operations, the load should be spread to give an even weight distribution over the floor area, otherwise the load may stall. Tip: when transporting pallets, place softwood boards of 300 x 18 x 2350 mm to distribute the pressure more evenly.

WARRANTY:
Warranty is subject to prior approval by Cargo Floor B.V.! To request warranty coverage, visit www.cargofloor.com to fill out and submit the warranty application form provided there; do not forget to include your Cargo Floor system number on the form.

In the event of an EMERGENCY, operation of the Cargo Floor system can be halted as follows:
- By pressing the stop button on the wired remote control unit;
- By turning all switches to position “0”;
- By putting the handle of the control valve in the middle position (only B and A control);
- Turning off the pump;
- Turning off the main switch of the power supply;
- Turning off the motor of the electro-hydraulic aggregate;

The WARNING STICKER is attached to the outside of the control cabinet.
MOUNTING THE GUIDES

With a steel C floor you can make use of so called Twister guides. For optimal support and in order to catch the impact of falling material you need to place a Twister on each connection tube/cross beam as well as in between them.

Next to this You have to mount so called ‘anti lifting’ blocks (part.nr. 410717) at the indicated locations (see attachment B1 and/or B2). These guide blocks have, next to guiding, a so called hold down function in order to prevent the profiles going up at the back side.

In a standard (13,6 meter) trailer about 1.600 guides should be mounted.

DRILLING THE HOLES IN THE FLOOR PROFILES

The holes in the floor parts need to be drilled before these are placed. One needs to pay attention to the fact that the holes must be drilled staggered due to the differing distances of the moving frame feet in the drive system (see figure 5).

The positions of the holes need to be measured as follows:

- Check that all 3 cylinders are completely retracted. You check this by seeing that the ends of the piston rods protrude no more than 10 mm out of the plastic rod guides;
- Measure according to figure 5 the length from the inside of the rear door to the first hole in the finger that is mounted on the moving frame foot that is closest to the cylinders. If a bevelled Cargo Floor end cap is used you need to subtract 50 to 60 mm (40 mm for the end cap + 10-20 mm extra space) from this measurement. If another form of end cap is used for the floor profile then you need to subtract the protruding length of the end cap plus 10 to 20 mm.
- Place all of the floor profiles with the sealing grooves in the same direction before you start drilling. Pay special attention to ensuring that the side profiles (with a groove, figure 2) are drilled on both sides at a distance that agrees with the pattern of holes for the first or last moving frame foot.
- Then drill according to figure 3, the necessary number of floor profiles per moving frame foot (this is 7 floor profiles for a standard 21-plank system), using the Cargo Floor drill jig, part number 9111009.
- The 3 mm C-floor profiles need to be fastened with 6xM12 (DIN7991 10.9). When ordering a new Cargo Floor CF500 SL-C system with a steel 3 mm C-floor the right mounting strips will automatically be mounted into the system (6xM12). If you are replacing a (aluminium) floor you need to pay attention to ordering these separately, art. no. 5350007. You will need to provided us with the year of construction of the trailer (and if possible the Cargo Floor system number) in order to receive the right hole pattern. See fig. 3.
- Drill 6 holes of Ø 4.5 mm with the aid of the drill jig on the inside of the floor profile. Then bore out the holes, from the same direction, to about Ø 10.5 mm.
- Next the holes need to be countersunk from the top side using a good countersink bit according to the specification G136 HSS DIN 335 C, code 13628.0 (figure 4) Make sure that the hole is countersunk to the right depth; the bolt head must not stick out above or under the floor profile. See figure 6.
FIG. 1

FIG. 2

FIG. 3 (6xM12)

FIG. 4

Sample of a countersunk drill

G136HSS  DIN 6350
FIG. 5

Cylinders completely retracted
Zylinder komplett eingefahren
Cilinders geheel ingetrokken
FIG. 6 A

FIG. 6 B

Attention!
With a C-floor: 6x bolts
SECURING THE FLOOR PROFILES TO THE DRIVE UNIT

After the floor profiles have been cut to size, rounded-off, drilled, and had the seals and end caps mounted, they can be slid over the plastic guides at the required position (matching up the hole pattern with respect to the moving frame foot). You need to carefully guide the floor profiles during the mounting procedure. Next, mount the provided M12 bolts with countersunk head using (Allen No. 8). A torque of 100 – 140 Nm should be used to tighten the bolts. One person can do this from above, and the bolts need to be well tightened. Every bolt needs to be provided with Loctite (Loc tite 243 cat.o. 23286 thread locking).

MOUNTING THE SIDE PROFILE

A seal that does not move needs to be mounted for the sealing to the side walls. This can simply be realized by mounting a tube or corner profile (see fig. 7 and 8). The measurements of these are dependent on the inner width of the trailer and the wall mounting. An example of how you could place this seal can be found in fig. 9 In order to guarantee a good seal the seal strip that is mounted onto the moving floor profile and rest against the side profile needs to rest against it over the full length on the topside of the tube / corner profile.

Between the vertical spaces of the moving profile and the side profile there needs to be at least a two mm space in order to prevent clamping and unnecessary wear. These side profiles therefore, in contrast to an aluminium floor, should not be tensioned. The margin between the side profile and the moving profile would be minimized with the before mentioned consequences as a result.

The non moving side profile should always be mounted at the same height (under the strip) as the moving floor profiles (see fig. 7 and 8. The seals of the moving floorprofiles should overlap the seal of the not moving side profile with at least five mm (over an eventual radius), see fig. 7 and 8. Then the side profiles needs to be fastened about every 1.000 till 1.500 mm with a so called steel monobolt, with zinced head, which may not protrude above the side profile. After this the opening between side wall and the side profile needs to be sealed with a flexible sealant.
SEALING THE FRONT AND REAR SIDES OF THE FLOOR

FRONT
In order to seal the opening caused by the stroke of the cylinder one can mount a strengthened plate, at a angle of 45°, on the front wall of the body (see fig. 13). The construction should be very solid so it cannot deform or rise. The provided plastic strip (2500x75x5 mm) needs to be mounted on the bottom of the front of this cover plate to avoid wear and to provide a good seal. Ensure here that the fasteners countersunk in the plastic strip are mounted so that they do not come in contact with the floor.

REAR
To get an optimal seal and prevent wear occurring a steel (St. 37) plate should be mounted at the unloading side, adjacent between the underside of the floor profiles and the rear portal. The length of the plate is at least 250 mm; the width and thickness are dependent upon your construction. In order to ensure that this plate can be changed easily, it must be fastened with countersunk screws within the free section of the operational stroke of the system, so that the screws cannot make contact with the moving floor.

FIG. 9
**TECHNICAL SPECIFICATIONS**

**System Operation**: completely hydraulic, with three double-action cylinders.

**System Control**: completely hydraulic mechanical.

**Operation Control**: manually loading / unloading, electrically on/off.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>CF500 SL-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bore (mm)</td>
<td>100</td>
</tr>
<tr>
<td>Piston rod diameter (mm)</td>
<td>45</td>
</tr>
<tr>
<td>Stroke (mm)</td>
<td>200</td>
</tr>
<tr>
<td>Cylinder volume (ltr.)</td>
<td>2.82</td>
</tr>
<tr>
<td>Oil volume per cycle (ltr.)</td>
<td>8.46</td>
</tr>
<tr>
<td>Over pressure valve threshold, max. operational pressure (bar)</td>
<td>225</td>
</tr>
<tr>
<td>Strokes per minute with advised pump capacity</td>
<td>13</td>
</tr>
<tr>
<td>Speed (mtr. / min) with advised pump capacity</td>
<td>2.6</td>
</tr>
<tr>
<td>Advised pump capacity:</td>
<td></td>
</tr>
<tr>
<td>Flow (ltr./min)</td>
<td>110</td>
</tr>
<tr>
<td>Pressure (bar)</td>
<td>250</td>
</tr>
<tr>
<td>Max. pump capacity:</td>
<td></td>
</tr>
<tr>
<td>Flow (ltr./min)</td>
<td>130</td>
</tr>
<tr>
<td>Pressure (bar)</td>
<td>250</td>
</tr>
<tr>
<td>Speed at maximum pump capacity (mtr. / min.)</td>
<td>3.1</td>
</tr>
</tbody>
</table>

**Control valves**: 24V DC

**Throughput variation**: Completely variable speed by use of oil flow determined by the revs of the motor or by various pumps.

**Drive**: use of the PTO/pump on the truck; an electro-hydraulic aggregate or an hydraulic aggregate with an external combustion engine.

**Filter**: pressure filter type: high-pressure 10 micron (part number 7372005).

**Pressure piping**: Ø 20 x 2 feed through 16 mm

**Return piping**: Ø 25 x 2.5 feed through 21 mm

**Oil ISO VG 32 b.v.**
- Shell Tellus T32 or BP HL2-32 or ESSO Univis 32 (or equivalent).
- Only use biological oil after agreement by Cargo Floor

**Biological oil**: A biological oil of the type synthetic ester (HEES) can be used as standard with the Cargo Floor system. **We advise you not to use other types of biological oil.**

**Oil temperature**: max. 70 °C

**Floor**

**Steel floor profiles**: - profile length negotiable
- 3 mm C floor profile
- profile width 160 mm
- moving floor width standard 2.400 mm.

**Extrusion alloy**: S700 MC high grade steel alloy, weldable, very wear-proof and tensile

**Guiding**

**Guide bearing surface**: The aluminium floor profiles are borne by wear-free plastic guides
- Total bearing surface of each guide is 87 cm²
  - Total bearing surface of each guiding block of the plastic cam guide is 60 cm²
  - Total guide surface area is determined by the total number of guides, which can be varied as required. We do however advise to mount about 1.600 bearings in order to support the floor parts fully.
Under floor: Steel as well as aluminium. The plastic guiding can be provided with square tubes 25x25x2 or the plastic cam guides can be mounted directly on the under floor.

OPTIONS:

- (i) module for connecting to Blackbox
- Can be connected to PLC
- Solenoids 12 V or 220 V (24 V=standard)
- Steel top plates (W= 110 mm) on top of the C-profiles with which a extra wear layer on top of the floor parts is created
- Top plates made out of Hardox (extra wear resistant)
- Floor width and length in consultation, can be any width required
- Aluminium end caps for floor profiles
- Wireless remote control with on/off and/or loading/unload functions (part number 6104006);
- Cargo Floor in combination with other loading/unloading systems
- Stationary applications in all versions
- Extra plastic guides.
- Electro- / hydraulic aggregates
- Diesel hydraulic aggregates
- Multiple bulkheads for partial loads
- Termically zinced sub frame
Monteren van de slijtplaat
Popnagels in het midden van de profielen monteren. Monter de popnagels als de planken zijn teruggetrokken. (i.v.m. demontage van de slijtplaat)

Mounting the wear plate
Mount rivets in the centre of the profiles. Mount rivets while slats are retracted. (because of demounting the wear plate)

Monteren der Verschleissplatte
Nieten in der Mitte vom Profil montieren. Montieren Sie die Papiernieten während der Bretter zurück gezogen Sind. (wegen Erneuerung der Verschleissplatte)
Monteren van de slijtplaat
Popnagels in het midden van de profielen monteren. Monteer de popnagels als de planken zijn teruggetrokken. (i.v.m. demontage van de slijtplaat)

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