

CARGO FLOOR®

Trouble shooter Drive unit without pressure with control valve 02

Cargo Floor B.V.
World's leading manufacturer and supplier of horizontal loading- and unloading transport conveyor systems.

TROUBLE SHOOTING MANUAL

To troubleshoot a drive unit without pressure as soon as possible and without problems you must follow these instructions carefully.

A drive unit without pressure means that there is no reaction from the drive unit itself or no audible (sensible) change of the oil flow when the drive unit is switched on (with the electrical switch). When the hydraulic gauges are connected, there is no change of pressure.

Please pay particular attention to the contents of the “Important recommendations and guidelines” and “important instructions”.

The measurements given in this instruction start with the metric system after which between brackets [0] the imperial measurement is mentioned.

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IMPORTANT RECOMMENDATIONS AND GUIDELINES

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 familiarise yourself with how the system works. We strongly recommend that you perform these checks when picking up the vehicle from the dealer so that your skilled supplier 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, download.

- A) Always open the vehicle's doors before turning on the hydraulic pump. Note! Build-up of pressure against the doors can open them with force. Also some of the cargo can fall out of the vehicle by itself after opening the doors, therefore KEEP CLEAR AT ALL TIMES, product could fall on top of you! Both could result in damages and/or injuries! It is always advisable to use the pneumatic door lock, if provided.
- B) 1. Check that the vehicle's (quick-detachable) couplings are properly connected to the P (Pressure line) and the T (tank/return line). 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 at the maximum pressure according to the system, see the technical specs. 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 10 meter [30'] 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, have 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 150 liter [40 US gallon]. 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 CF500 SLC 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 unauthorised 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!
Option: your Cargo Floor system could be equipped with an oil temperature safety switch which will switch off the system automatically when it starts to overheat.
- 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. [12" x 0.75" x 92.5"] to distribute the pressure more evenly.
- EE) The constant pressing of the load against the head board or the doors can lead to extra wear of the complete system. Also the construction can be damaged. Please consult your supplier about the optimizing possibilities or in order to prevent problems occurring.
- FF) The user/operator/driver that is operating the Cargo Floor system is compelled to remain a safe distance from the Cargo Floor system at all times, from the time of switching on the hydraulic pump until turning it off. He should ensure that no dangerous situations can occur. When the process malfunctions or if other people are present he should shut down the Cargo Floor system, or hydraulic pump, immediately.
- GG) No unauthorized alterations/modifications/changes/adjustments may be made to any part of the Cargo Floor drive unit and system.

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.

EMERGENCY STOP

In the event of an EMERGENCY, operation of the Cargo Floor system can be halted as follows:

- By pressing the red stop button on one of the control switches;
- By turning all switches to position “0”;
- By putting the handle of the control valve in the middle “0” position (only B and A control);
- Turning off the PTO pump/engine;
- Turning off the main switch of the power supply;
- Turning off the motor of the electro-hydraulic aggregate.

The WARNING STICKER/DECAL is attached near the control cabinet.



CAUTION **CAUTION**

Eng
Important tips before the Cargo Floor system can be put into operation:
- Always consult the operation manual first.
- Always determine and check the direction of transport.
- People must always maintain a distance of at least 10 metres from a working Cargo Floor system.
- After use, always switch the Cargo Floor system back to the non-activated neutral (0) position.
- By maintenance work, switch off everything and disconnect the Hydraulics.

D
Wichtige Anweisung vor der Inbetriebnahme des Cargo Floor Systems:
- Immer erst die Bedienungsanleitung lesen.
- Zuerst immer die gewünschte Transportrichtung bestimmen und kontrollieren.
- Vom aktivierten Cargo Floor System müssen Personen mindestens 10 Meter Abstand halten.
- Nach dem Einsatz das Cargo Floor System in die nicht aktivierten, neutralen Null-Stellungen (0) zurücksetzen.
- Bei Wartungsarbeiten, alles ausschalten und die Hydraulik abkuppeln

NL
Belangrijke aanwijzing voordat het Cargo Floor-systeem in gebruik mag worden genomen:
- altijd eerst de bedieningshandleiding raadplegen.
- altijd eerst de gewenste transport richting bepalen en controleren.
- Personen moeten altijd tenminste 10 meter afstand houden van een werkend Cargo Floor systeem.
- Na gebruik altijd het Cargo Floor systeem in de niet geactiveerde neutrale (0) posities terugzetten
- Bij onderhoudswerkzaamheden; alles uitschakelen en de hydrauliek loskoppelen

KEEP CLEAR AT ALL TIMES !!

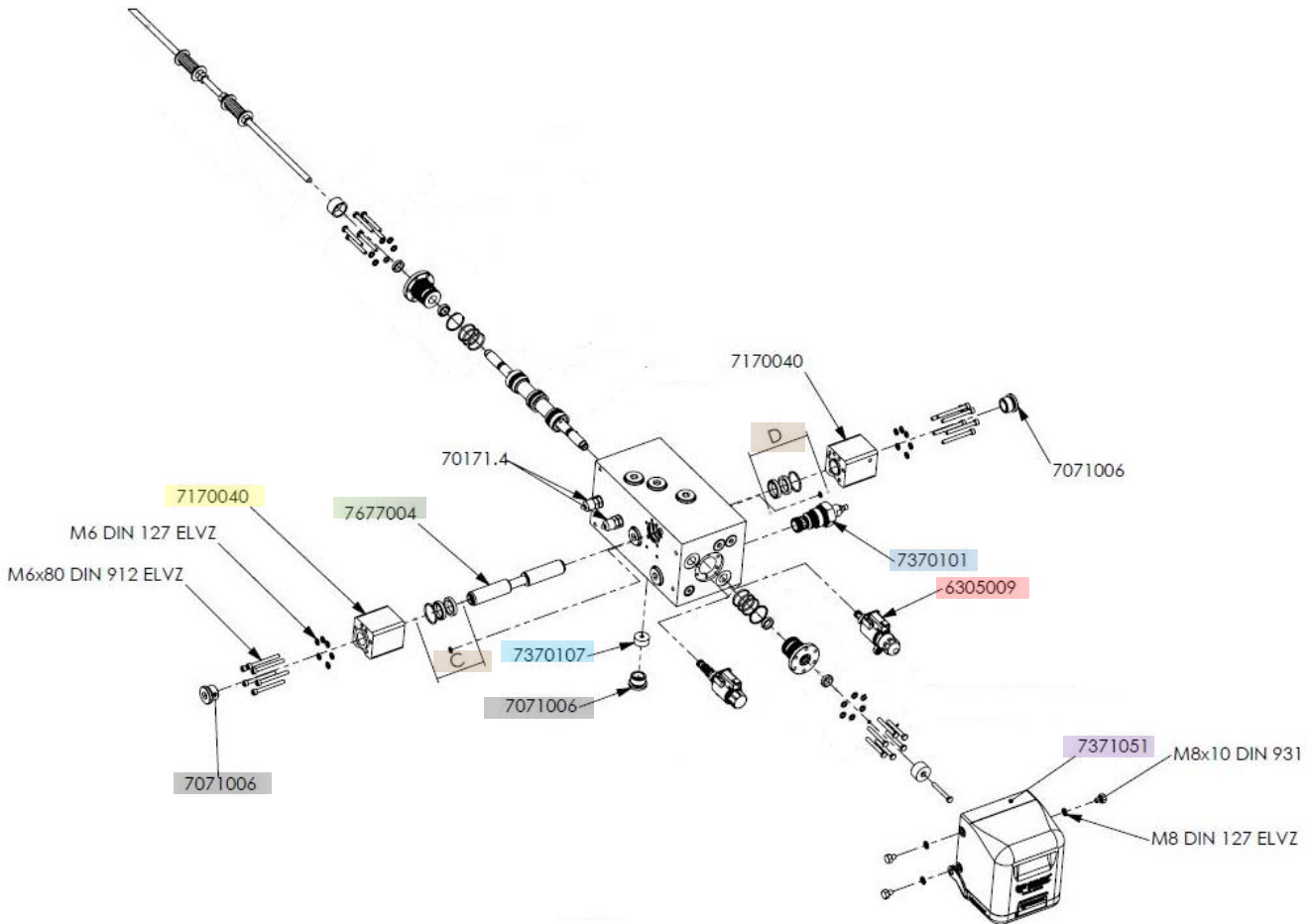
STOP

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With this instruction you are able to troubleshoot in a swift - and correct way - a Cargo Floor drive unit without pressure. Starting point is that the hydraulic pump is working correctly, and the hydraulic hoses are connected firmly and in the right way.

PARTS MENTIONED IN THIS INSTRUCTION



- 7677004** Operation plunger L.= 195 mm. / D.= 25 mm. complete
- 6305009** Cartridge + solenoid 24 V. Cargo Floor (GS02) (incl. red emergency control)
- 7370101** Pressure cartridge pressure control valve
- 7371051** Cover for control valve 02 (complete)
- 7370107** Choke ø6.5 mm (control valve 02)
- 7071006** Socket screw 3/4 incl. seal
- 7170040** Head for operation plunger housing control valve 02 complete
- C + D** Seals for operation plunger and head for operation plunger housing

Tools needed:

- Combination wrench 13, 32
- Allen key 12 mm
- Tape rule
- Air blow pistol
- Oil drip tray

REASON 1: ELECTRICAL FAILURE

To determine if the drive unit without pressure has an electrical or a hydraulic failure the emergency control needs to be activated.

Remove the bottom half of the protective cover from the control valve.

MAKE SURE THAT THE DOORS ARE OPEN!

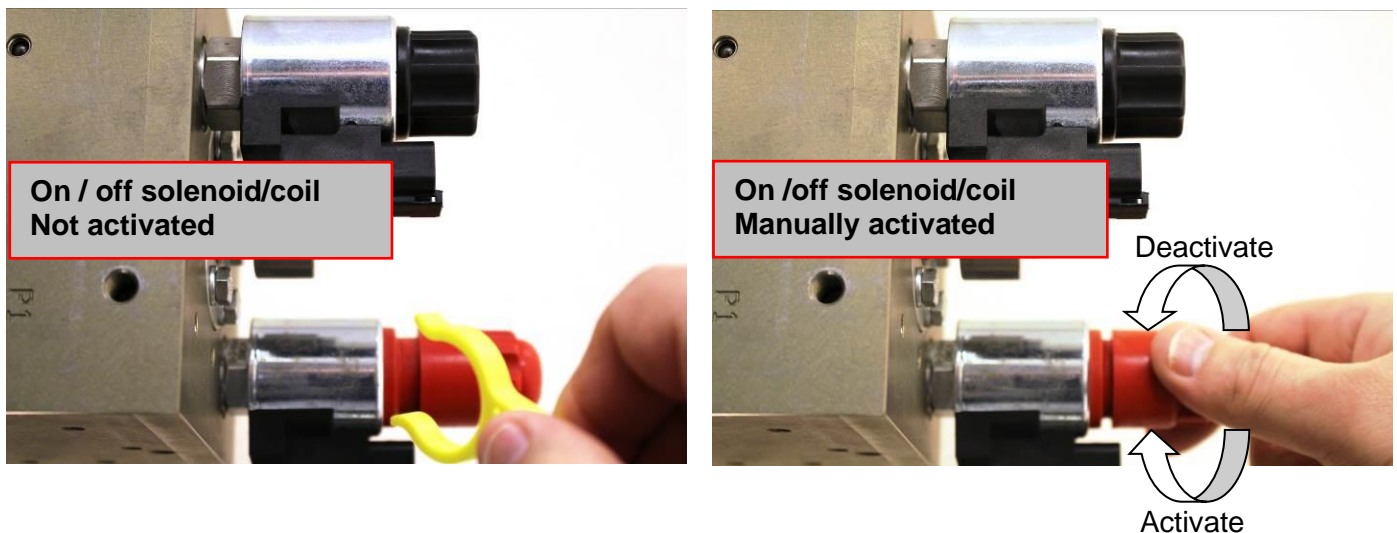
When using this manual override you must always ensure that it is switched back to the original, NON-ACTIVATED condition after use.

Activation of the emergency override: ON/OFF (=ON)

Remove the yellow security clip and turn in (clockwise) the red button on top of the on/off GS02 solenoid till the stop.

Deactivation of the emergency override: ON/OFF (=OFF)

Turn out (counter clockwise) the red button on top of the GS02 solenoid until the click and place back the yellow security clip. The drive unit switches "off".



If the drive unit does turn on when using the emergency override, then the malfunction is of an electrical nature.

Possible electrical failures can be:

- A. Failure in the lighting, the fuse of the lighting is blown and the power supply to the Cargo Floor drive unit is interrupted.
- B. Failure in the junction box of the trailer and the power supply to the Cargo Floor drive unit is to weak or interrupted
- C. Failure in the wiring to the Cargo Floor drive unit
- D. Failure in the solenoid of GS02

There is a fuse in switch CF7 (or CF3), it could have blown due to a short circuit.

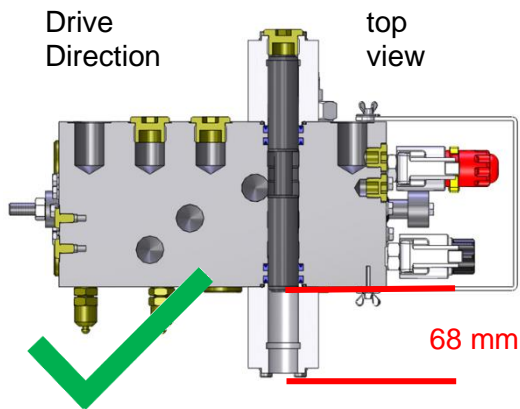
The electrical failure must always be repaired so that the drive unit will work normally again. The emergency override may **never** continuously be turned in, because this can cause damage to the trailer or result in life-threatening danger.

If the drive unit - with a screwed in emergency overrule – does **not turn on**, then there is a hydraulic failure. See the next chapters for possible solutions.

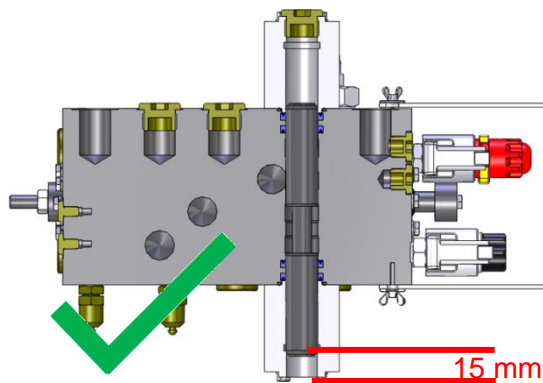
REASON 2: THE OPERATION PLUNGER IS IN THE MIDDLE POSITION

First: check in which position the operation plunger (which is responsible for the loading/unloading function) is. If the plunger came to a stop in the middle, then a depressurized connection between pressure and return as been made.

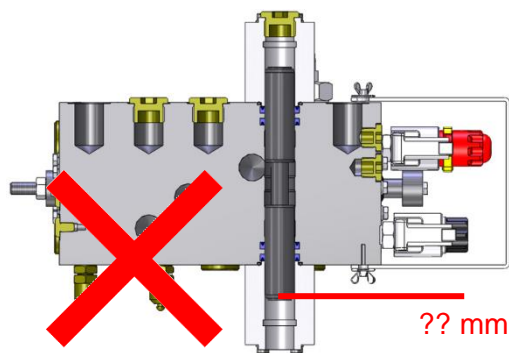
In order to determine the position of the operation plunger the socked screw 3/4 (7071006) must be screwed out of the head operation plunger (7170040) with Allan key 12 mm. A small amount of oil will come out the opening so put an oil drip tray underneath to catch it. Next you can measure the position of the operation plunger with a tape rule. The tape rule is put from the outside of the head for operation plunger to the operation plunger (7677004). Attention: do not measure the position with a calliper!



Measure the depth of the operation plunger with a tape rule.
Is the depth 68 mm [2.7"], then the plunger is in the unload position. This position is not the cause of a drive unit without pressure. Go to chapter: [the pressure cartridge](#).



Measure the depth of the operation plunger with a tape rule.
Is the depth 15 mm [0.6"], then the plunger is in the loading position. This position is not the cause of a drive unit without pressure. Go to chapter: [the pressure cartridge](#).



Measure the depth of the operation plunger with tape rule.
Is the depth any another than 15 [0.6"] or 68 [2.7"], then the operation plunger is in the middle position.
This position will be the cause of a drive unit without pressure. Go to chapter: [causes of why the operation plunger is in the middle position](#).

CAUSES OF WHY THE OPERATION PLUNGER IS IN THE MIDDLE POSITION

After measuring the plunger can be pushed to the end position, meaning in the direction of the cross members. Next the valve can be put back together. If you now take the switch and push function unloading the drive unit should start to work.

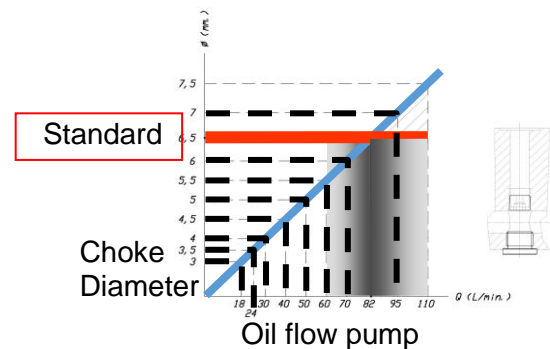
To prevent a malfunction like this in the future we recommend you to determine why the plunger remained in the middle position. A check with the help of the following instructions can be done, after which you can eliminate the cause.

There are only 3 reasons which can cause the plunger remaining in the middle position:

- 1. The flow of the pump is too low in comparison to the hole in the choke (also see the user manual for this topic!).**
- 2. The connections between the trailer and truck are hooked up the wrong way around.**
- 3. The seals around the plunger are damaged by overheated oil.**

1. The flow of the pump is too low in comparison to the hole in the choke

The standard hole in the choke - of an E-operated system - has a diameter of 6,5 mm [0.26"]. This choke is creating the pressure to push the operation plunger through the middle position until the end, when the function switches from loading to unloading (or reverse). The standard choke is suitable for flows of the pump between 60 and 110 liter per minute [16 and 29 gpm]. If the flow of the pump is getting below 60 liter per minute [16 gpm] it could mean that there is not enough pressure created by the choke to push the plunger through. An indication for a low flow of the pump is the unloading speed, if a complete load takes more than 10 minutes to unload you can assume that pump has not got enough flow. If this is the case then check the oil flow by using a flowmeter. Alternatively, one can count the complete strokes made by the system for 1 minute and multiply the outcome with 8,5 [2.2]. The result gives you an indication of the oil flow in liter per minute [gallons].



2. The connections between the trailer and truck are hooked up wrong way around

If the connections between trailer and truck have been hooked up the wrong way it will cause the plunger to remain in the middle when changing the direction of the cargo (wrong connections can also be the cause of other malfunctions). (The reason for this is that the pressure built up of the choke takes place on the wrong side and therefore is not available to push the plunger through the middle. Indication that this is the situation: the Cargo Floor drive unit will start to move at exactly the moment the pump is turned on, but the switch is still in the OFF position and the emergency override has not been used. If you measure the pressure at the control valve this will confirm this situation: the high pressure will be measured at measuring point M2 instead of at M1.

Attention!

First check the filter element, then: hook up the connections the right way! The filter element gets pressed into pieces when the connections are hooked up the wrong way, if you do not change the filter element before connecting the hoses the right way the loose bits will be flushed into the valve!

3. The seals around the plunger are damaged by overheated oil

You can check if this is the situation by trying to push the plunger into the end position by hand: which will be almost impossible. Parts of the defective seal will have gotten jammed between the plunger and the house of the control valve. Because of this there is a lot more pressure needed to push the plunger through the middle. Because of this there is enough force present to push the plunger out of the middle. If moving the plunger by hand is impossible, you could screw a M10 bolt (L.= about 80 mm [3.1"] into the threaded hole of the plunger, by doing this you can apply more force to it from the outside of the valve. Off course you will have to replace the defective seals.

There the reason of the defective seals was the overheating of the oil, all parts that have been in contact with the oil should be resealed. Also the cause of the overheating needs to be determined so damages like these do not happen again in the future. Please contact Cargo Floor B.V. to discuss possible causes.

REASON 3: POLLUTION OF THE PRESSURE CARTRIDGE

Another reason why the system could be without pressure is pollution of the pressure cartridge pressure control valve (7370101). The plunger (yellow in the pictures below) of the pressure cartridge then cannot close. This cartridge has a double function. Firstly: the cartridge + solenoid 24 V. Cargo Floor GS02 (parts no. 6305009) controls the OF/OFF of the drive unit. Secondly, it functions as a pressure control valve when the drive unit is turned on.

Attention!

Do not change the settings of this valve by adjusting the threaded tip. Further do not take apart the valve, take it out in one piece when you want to check it!!!!

When the drive unit is turned on, the plunger in the tip of the pressure cartridge will be pushed causing it to close of the oil flow to the tank. (The plunger will go back if the drive unit has been turned off or a pressure of 225 bar [3263 psi] has been reached.

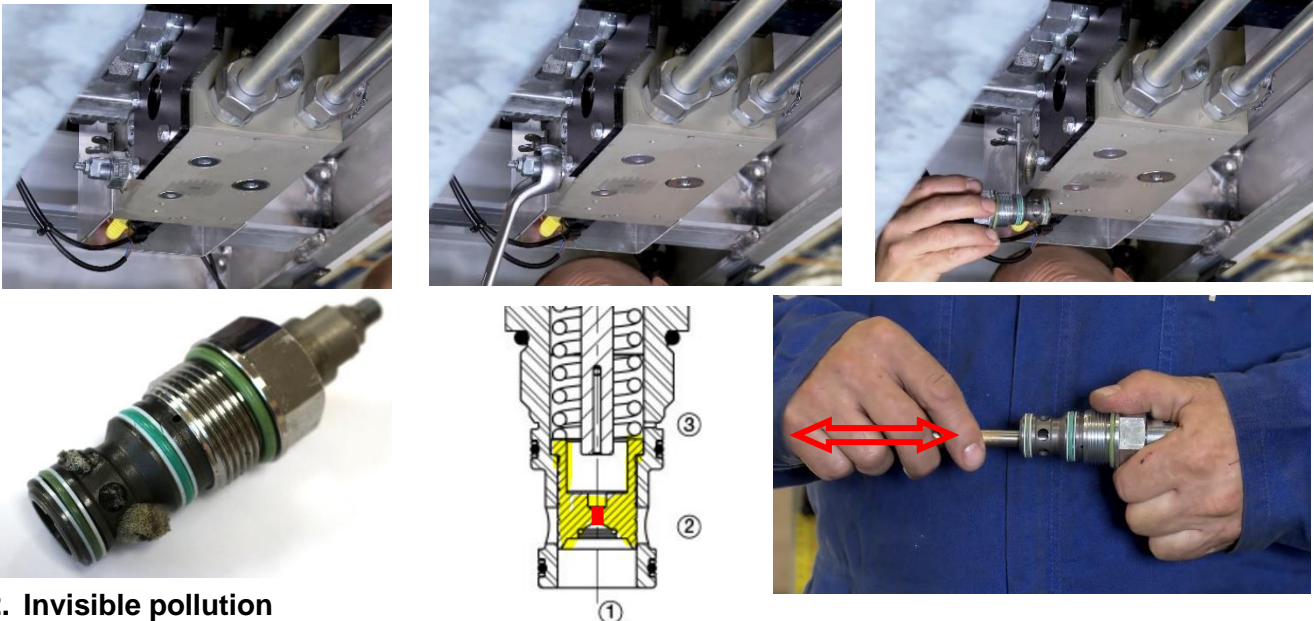
If the plunger cannot close the Cargo Floor drive unit will not turn on.

The reason for the pressure cartridge not closing could be that there is pollution inside the valve. To check the pressure cartridge it must be screwed out of the control valve (wrench 32 mm) after which you can check it for pollution.

Two types of pollution are possible:

1. Visible pollution

This dirt you can see. It needs to be removed so the plunger can move about freely again in the tip and can, independently, close through the spring pressure.



2. Invisible pollution

Invisible pollution will be behind the sieve in the tip of the valve. You cannot see this dirt nor get to it. This pollution is caused by oil that has been flowing from the wrong side into this valve. This being the result of the connections between the truck and the trailer have been hooked up wrongly (P&T mixed around). During the time the connections were hooked up the wrong way dirt has piled up behind the sieve. After hooking up the connections the right way this dirt has been flushed into a little hole (see the red marking on the picture in the previous page). If this hole is closed off the drive unit will not turn on. Try to blow out this pollution with an airgun, by blowing through the sieve. An air and oil mixture could come out the little channel underneath the thread. If this works this valve could resume its function. Unfortunately blowing out the dirt will not assure a 100% correct function of this part and we therefore do recommend you change this part.



CONTACT DATA

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The Netherlands

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Website: www.cargofloor.com

Order spare parts:

E-mail address: sales2@cargofloor.com
DID number: +31 524 593 922

After Sales (technical questions and malfunctions)

E-mail address: as@cargofloor.com
DID number: +31 524 593 981 / +31 524 593 991

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