

CARGO FLOOR®

Replacement instruction Cover for switching piston control valve 02 complete (Part no. [7170043](#))

Cargo Floor B.V.

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

CARGO FLOOR REPLACEMENT INSTRUCTION

Please follow the instructions given carefully to exchange the cover correctly and as quickly as possible.

Please pay particular attention to the contents of the “Important recommendations and guidelines” on page 2 and further!

The measurements given in this instruction start with the metric system after which between brackets [0] the US/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 transport conveyor 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/downloads

- 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 moving floor system. An incorrectly adjusted pressure relief valve can cause damage to the Cargo Floor transport 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 moving 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 transport conveyor 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 moving 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!
- 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 you 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, [guarantee request](#) 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 moving floor system can be halted as follows:

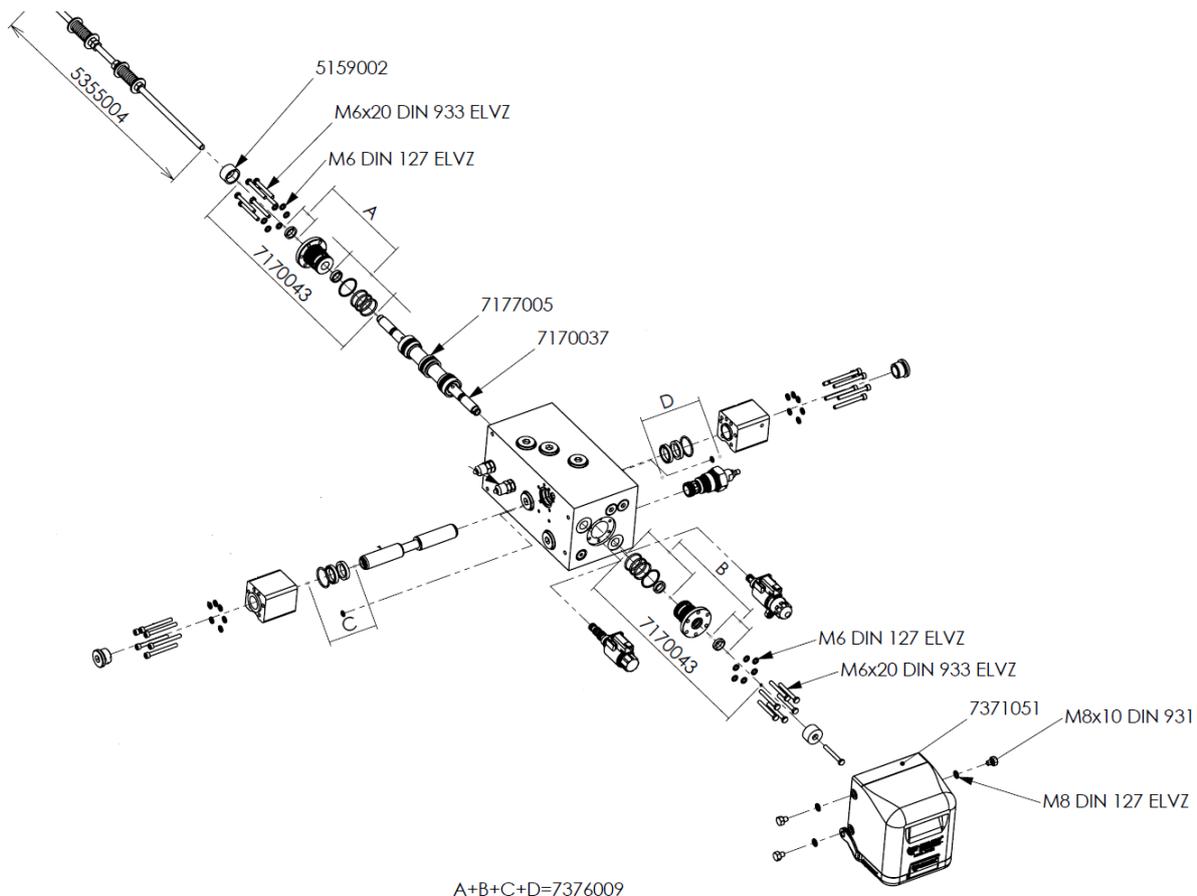
- ◆ By pressing the red stop button on one of the control switches;
- ◆ By turning all switches to position "0";
- ◆ By putting the handle of the control valve in the middle "0" position (only B and A control);
- ◆ Turning off the PTO pump/engine;
- ◆ Turning off the main switch of the power supply;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

INSTRUCTION FOR THE DEMOUNTING AND MOUNTING OF THE COVER OF THE SWITCHING PISTON

With the help of these instructions you should be able to swiftly and correctly demount the cover switching piston, control valve 02, in order to replace the cover or the seals. The time in which the demounting and mounting of both covers can be done is 1 hour.

Always look for the reason why this cover needs to be replaced. Determining the cause and fixing it could prevent the same problem occurring in the future.

PARTS MENTIONED IN THIS INSTRUCTION



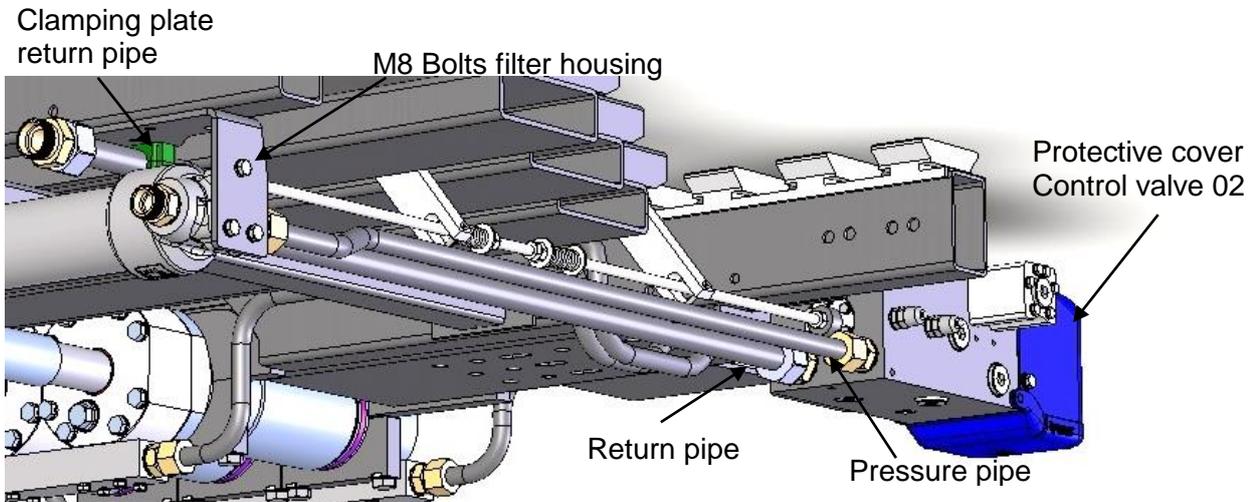
5355003	Threaded rod complete (1000 mm. [39.4"])
5159002	Joining piece round 30 (switching valve)
7170043	Cover for switching piston control valve 02 complete
7177005	Switching plunger L.= 146 mm [5.7"] / D.= 35 mm [1.4"] complete
7170037	Operation plunger L.= 306 mm [12"] / D.= 16 mm [0.6"] complete
7371051	Cover for control valve 02 (complete)
7376009	Seals for control valve 02 complete

Required tools

- Open-ended / ring spanner 10, 17, 24, 36, 41, 46
- Hex key t-handle 5 mm
- Hammer
- Oil drip tray

PREPARATIONS

Before the cover of the switching piston can be demounted out of the control valve workspace needs to be created. The control valve does **not** need to be removed.

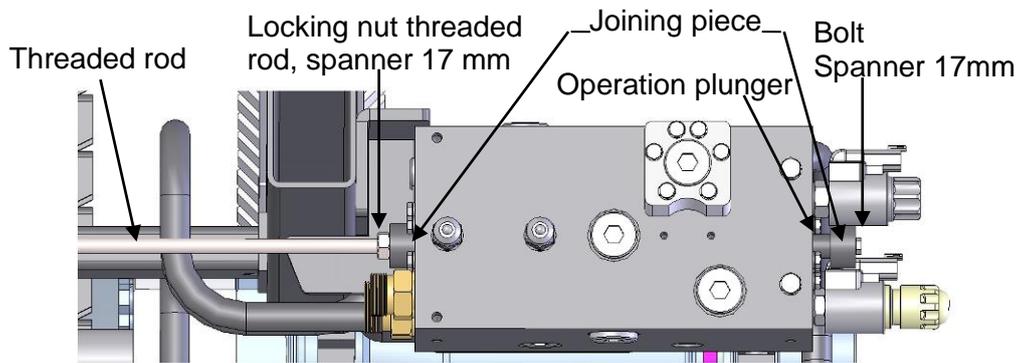


It is preferred to have the cylinders almost run fully out before the replacement. However you should still be able to move the threaded rod forward and backwards by hand. Doing this enables the threaded rod to be removed out of the operation plunger and no adjustment to the threaded rod needs to be made. Turn off the system and disconnect the hydraulic and electrical connections that are between truck and trailer.

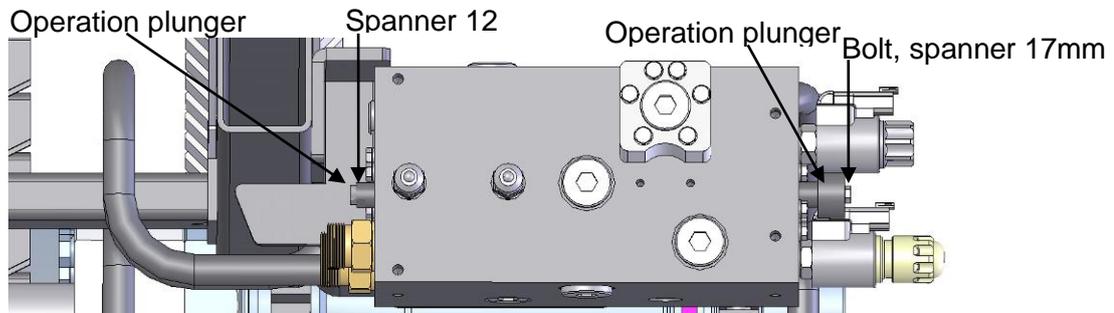


Cover the piston rods in the stroke part of the cylinder if you get near them during the work, this prevents the rods from getting damaged.

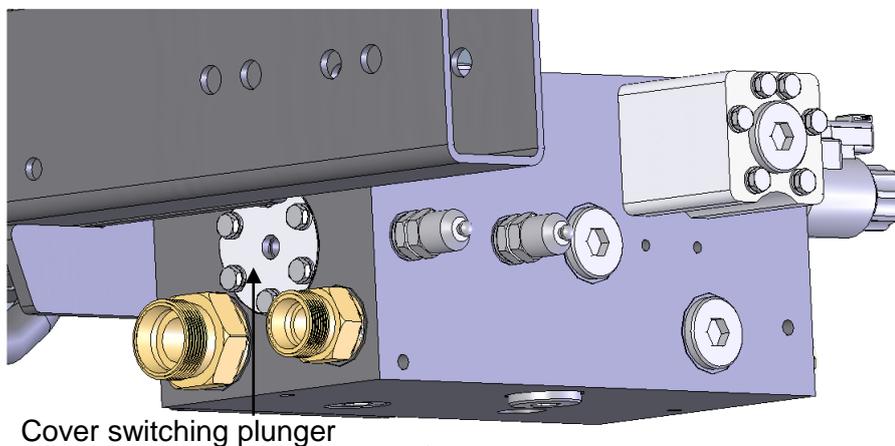
1. Remove the cover from the rear side of the control valve. It has been fastened with 3 M8 bolts.
2. Next fully remove the hydraulic pipe (pressure pipe) which runs from pressure filter to the control valve. Unscrew this hydraulic pipe on both sides using an open-end spanner 32 for the screw-in coupling and an open-end spanner 36 for the nut, this at the side of the filter as at the control valve. If needed partially unscrew the 3 fastenings bolts of the filter housing so the hydraulic pipe can easily be removed.
3. Only unscrew the nut of the second hydraulic pipe (return pipe) at the control valve side with open-end spanners 41 and 46. Open the clamping plate with which this pipe is mounted to the front bridge of the system. The return pipe can now be moved so you have more room to do the works.



4. At the front side of the control valve: loosen the locking nut of the threaded rod. For this use 2x spanner 17 mm; one for the locking nut of the threaded rod and one for the bolt at the rear side of the control valve. Now that the locking nut has been loosened the threaded rod can be fully screwed out of the operation plunger. Make the threaded rod go as far to the front as possible and demount the joining piece from the operation plunger. (If the locking nut has not loosened but the bolt has, then it – without the joining piece - has to be screwed back in the operation plunger by hand. On the operation plunger, directly next to the bolt head, are two areas on which an open-end spanner 12 mm can be put. This prevents the operation plunger from rotating and the locking nut of the threaded rod can be unscrewed. Now remove the bolt out of the operation plunger at the rear side.)

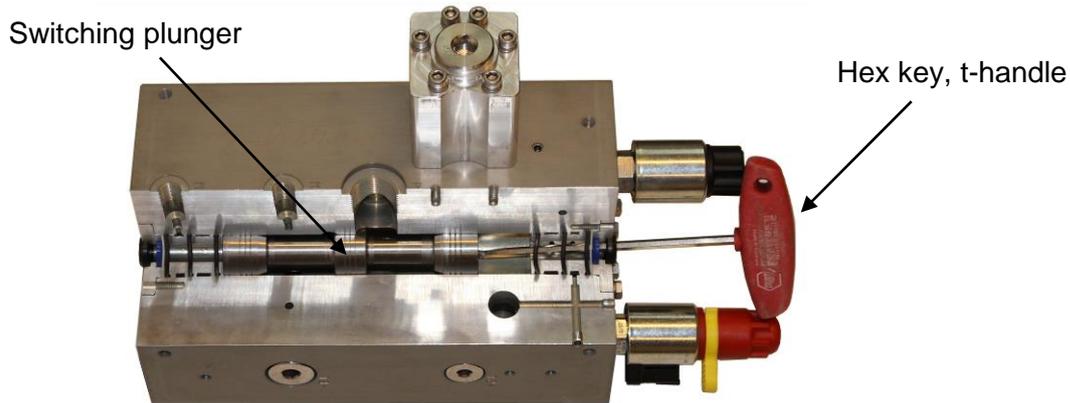


5. The operation plunger can now be pulled out of the control valve, in the direction of the doors. If it cannot be pulled out in that direction it will have to be removed at the front side. If this is the case the rear joining piece needs to be removed from the operation plunger. When this has been done screw a M10 bolt into the hole where the threaded rod was mounted. Place a spanner 12 mm on the flat surfaces of the operation plunger and a 17 mm spanner on the bolt. Screw the bolt out of the operation plunger and remove the joining piece. Pull the operation plunger fully out of the control valve.



6. The 6 M6 screws can now be screwed out of the operation plunger with socket 10 mm and a small socket wrench. The top bolt at the threaded rod side of the control valve will have to be unscrewed with an open-end/ring spanner 10 mm.

DEMOUNTING THE COVER OF THE SWITCHING PLUNGER



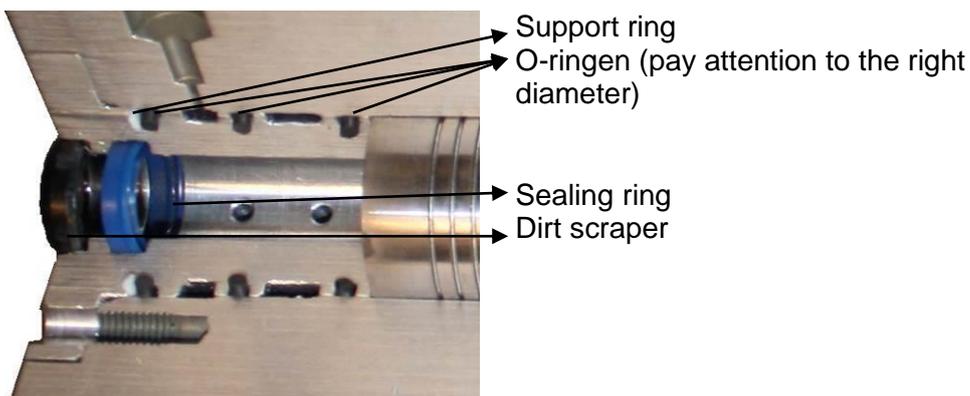
7. Now that all the screws have been removed take the front cover switching plunger out of the control valve. Insert the hex key with t-handle 5 mm diagonally through the opening of the switching cover at the rear of the control valve and press the switching plunger in the direction of the control valve against the front cover switching plunger. Tap with hand or with a small hammer on the handle of the hex key causing the cover loosening out getting out of its position. Now that the cover has loosened it can be removed by hand out of the valve by tilting it and moving it downwards.



Now it will be possible to replace the complete cover or the seals.
 The method of demounting the rear cover switching plunger is the same as the front cover.



When removing the old seals do not damage the switching cover
When mounting the seal pay attention to the right position of the various seals



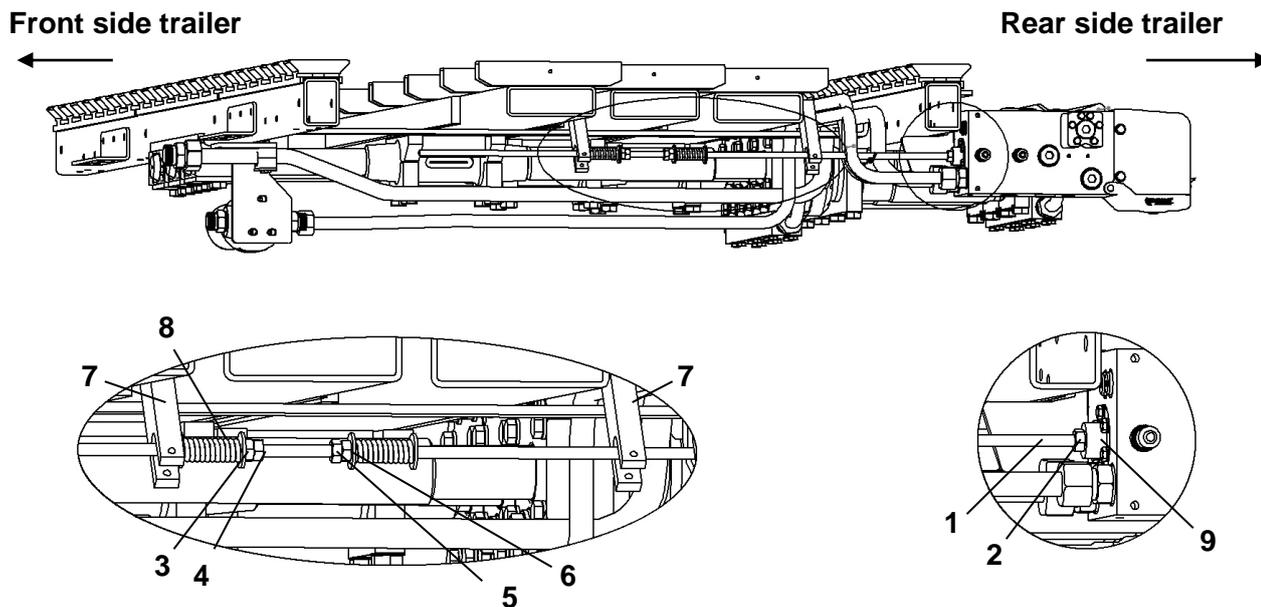
MOUNTING THE COVER AND FINISHING

Check the plunger on damages, wear and if they move freely in the control valve before the cover(s) are mounted. The mounting is done fully the opposite of the demounting as described above.

Push the joining piece on the threaded rod with the hollow side to the operation plunger. Fully screw in the threaded rod into the operation plunger. The fastening needs to be secured with a locking nut at the threaded rod site and bolt M10 incl. joining piece at the rear side of the control valve. The movement, back and forward, of the operation plunger is now limited to 12 mm [0.5"].

Check the oil level and refill after mounting the covers, after this do a full function test.
 Check if it is necessary to adjust the threaded rod.

ADJUSTMENT OF THE THREADED ROD OF THE CONTROL VALVE



Check that the threaded rod (1) is fastened securely to the switching valve, with pressing and pulling the stroke is exactly 12 mm. [0.5"].

If not, then screw the threaded rod (1) as far as possible into the plunger and secure this with the contra nut (2) (spanner size 17). Loosen nuts (3 and 4, spanner size 17) and move these about 3 cm [1.25"] in the direction of the rear of the trailer.

Now switch the pump on while you are at a safe distance. The system will start to move and stops automatically at the point where the command lip (7) no longer operates the switching valve, because the spring (8) is no longer pushed. Switch off the pump immediately.

Now push the threaded rod (1) in the direction of the rear of the trailer until the spacer ring (9) touches the control valve.

Tighten nuts (3 and 4) so far in the direction of the front side of the trailer that the spring is fully pushed in, and secure them by tightening them against one another. Repeat this procedure for the other side (nuts 5 and 6) by doing everything in opposite directions.

N.B. It is worthwhile spreading some copper grease on the threaded rod (1).

TROUBLESHOOTING IN THE CASE THE OIL HAS BEEN TOO HOT

Malfunction system	Concerns part	Cause	Solution
4. Individual movement is difficult and/or incorrect with a full trailer	Pressure control valve	Tipper valve	Turn tipper valve in correct position
		Pressure control valve pulling vehicle max. pressure to low	Measure max. pressure/ adjust pulling vehicle
		Return oil has restrictions	Measure pressure M2, remove restrictions
	Capacity of the system is insufficient.	To much load	Unload part of load with crane
		Pollution between the profiles	Clean
		Frost	Thaw
6. Switching is difficult or goes not at all. 3 Cylinders are fully retracted or fully out.	a. Threaded rod	Adjustment incorrect	Adjust correctly, attention: determine cause. See: b. and c.
		Switching spring broken	Replace spring, attention: determine cause. See: b. and c..
	b. Switching plunjer	Stroke > 12 mm. [0.5 inch] -> threaded rod loose, spacer loose	Screw in Threaded rod / bolt fully.
	c. Moving cross member	Slanting caused by loose profiles	*Replace screws and provide them with a thread locking product and check the rod bearing.
	d. Switching choke	Polluted	* Clean choke

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