

Loading and unloading silo

Loading

- Use your personal protective equipment.
- Wear a reflective vest or jacket.
- Report to the doormen and have all necessary information, such as reference numbers, at hand.
- Follow the instructions of the on-site staff.
- Show the cleaning certificate upon request. You will often have to hand over one copy. Be sure to have several copies; a cleaning certificate should also be attached to the waybill.
- Always to position the truck properly on the weighbridge and that you weigh in and out in the same way. So, when uncoupling, always weigh only the load unit.
- Before you start: ensure that the silo or any part of it is not under pressure.
- If a seal is present, do not break them without the presence of the consignor.
- If the shipper gives permission to remove the seals from the cleaning, remove them all and then replace all seals with seals you receive from the customer after loading.
- Discard the broken seals all properly in a suitable bin.
- Check that the silo (container) is 100% clean and dry.
- Check that the airline and air distributor are clean and dry.
- Check that the unloading bottom is closed properly and evenly. Check that the bolts are tight using the correct tools. Do not over-tighten the toggles, they must be able to be loosened.
- Take a close look to ensure that the unloading bottom is evenly tightened. Make sure the agitator ring is fitted. The absence of the agitator ring increases the risk of leaks and more residual load.

WRONG



The unloading bottom is tightened unevenly. Rubber on rubber, so the agitator ring is missing.

RIGHT



The unloading bottom is evenly tightened, and the agitator ring is fitted.

- Make sure the product valve is closed and the blind cap is fitted.
- Keep windows and doors closed.
- If you must load inside a hall, always make sure the air circulation is set to "circulate within cabin", to avoid sucking in dust. Turn off the heater completely. Sucking in dust into the cabin will clog the air filter.
- Ensure you are positioned near the correct loading pipe. Always have someone on staff verify this.
- Check if grounding is used during loading. This is always recommended.
- When working on top of the silo, consider the rules for working at height (see 'safety during loading and unloading').
- Do not open the manhole cover until you are positioned under the loading station.
- Only open the manhole cover used for loading.

- Ensure no items such as pens, Bluetooth earbuds or mobile phones can fall into the tank at any time. Never put loose items in your pocket.
- Loading can be done by top loading or blasting through the manhole cover. In isolated cases, loading is done through the storz-filler caps on top of the silo.
- Pay attention to venting: due to dust and pressure build-up, the silo must be able to release the air, to prevent pressure build-up from occurring.
- Do not let too much product pass through the manhole. The manhole could overflow and/or product could be left behind in the loading chute.
- Clean up spilt product immediately and completely. Make sure no product is left anywhere on your truck and clean up the customer's premises under- and next to your truck completely. NEVER throw it back into the loading unit; that would be a contamination incident.
- If there has been a large product spill, report this to the loading/unloading site and your planner.



- Ensure a good weight distribution:
 - Good weight distribution ensures axle pressure on the truck as well as the trailer. The rear may be loaded a little heavier (40-60).
 - For example, use the second cover from the front and second from the back.
 - Of course, loading may also be done 50-50. In this case, use the third cover from the front and the second from the back.
 - The combination will usually be loaded to its maximum permitted weight. This means paying close attention to the axle load.
 - The maximum axle loads can be found on the registration documents of both the truck and the trailer.



If there is a pressure gauge on the truck's or semi-trailer's driving axle near the controls of the air suspension, this provides drivers with an indication of the weight on that axle. However, there are no fixed values for this, and it varies per (make of) truck or trailer.

- Sampling of the product is the customer's responsibility. If requested by the customer, sampling will be carried out according to the customer's instructions. This must be reported to the planner.
- Ensure that all rubber gaskets are properly in place before closing the lids.
- Make sure the lid is level and exactly centred before cross-tightening it by hand. Do not kick the swivels.
- After loading, check for defects, leaks, and breakages and ensure that your equipment is complete.
- Check whether the twist locks need to be tightened. This is often the case due to the weight in the container.
- Seal the loading unit.
- Always put the handrail down immediately.
- Fill in the CMR in full; check the seal numbers.

Make sure everything is properly sealed after loading. Leave the vent open to prevent condensation. Make sure the insect filter is in place when transporting sweeteners.

Unloading

- Check that all documents are present and correct.
- If documents are missing or incorrect, or if in doubt, contact your planner.
- Report to the porter and present the consignment note.
- Use your personal protective equipment and wear a reflective vest or jacket.
- Follow the instructions of the on-site staff (weighing and sampling).
- Sampling of the product is the customer's responsibility. If requested by the customer, sampling will be carried out according to the customer's instructions. This must be reported to the planner.
- Position the truck on the weighbridge properly (full as well as empty).
- Never remove seals yourself: always by instruction of the consignee and in their presence.
- Ask the one assigning the unloading point to write this exact number on the CMR and sign it. If nobody is present or does not agree to sign, contact your planner; an error is more costly than waiting.

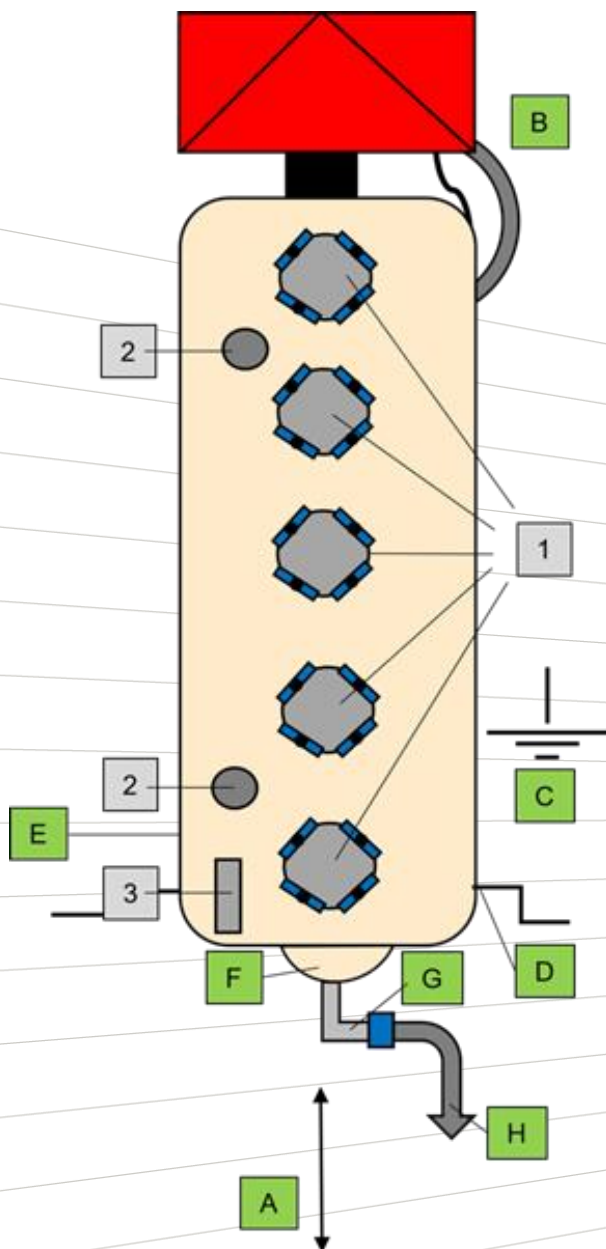
Unloading – supervisor hereby orders to unload the above mentioned product in:

SILO:

SIGNATURE:

Unloading – supervisor hereby signs for giving the order to unload the product in the above mentioned silo and also accounts for giving the driver an instruction which is clear and is not liable for more than one interpretation.

Preparing for unloading



Inspect the top:

1. The gaskets and if the manhole covers are properly tightened.
2. whether the blind caps are tightened with the silo spanner.
3. that the vent is closed.

Preparing for unloading:

- A. Ensure there is enough room behind the silo (4 meters).
- B. Connect the compressor hose and the tipping cable.
- C. Connect the grounding cable.
- D. Lower the support legs and make sure the trailer is level.
- E. Lower the truck's air suspension.
- F. Check the unloading box is tightened well.
- G. Connect the unloading elbow with the air hoses.
- H. Connect the unloading hoses.
- I. 'zen position'.

Take an extra minute to establish everything has been executed correctly.

- Always try to unload "clockwise", unloading anti-clockwise may cause the unloading hose to be unscrewed by the tipping process.
- Check that all hoses, couplings, unloading elbow and air distribution block are clean and dry.
- Before working with the silo (container): verify that the silo or any part of it is not under any pressure.
- Is the unloading bottom evenly cross-locked, properly tightened, and is the rubber in its proper place.
- Are the manholes properly closed and tightened?
- Are all hoses and couplings properly attached and where possible secured against loosening with clamping bands or other securing measures?



- Never let the support legs stand on a grate.

- Always secure the unloading hose, including the side of the customer's silo.



- Some unloading addresses require the use of pressure from the factory. In this case, this air is used instead of your own compressor on the truck.
- Note that some companies use nitrogen (N₂). Verify if this is the case. If in doubt, ask. If you do not get a clear answer from the customer, ask the planning department. **Never enter the container after unloading, this is extremely dangerous.**
- After unloading with nitrogen always seal with yellow nitrogen seals.

- When unloading with factory air, keep the engine running during tipping due to the power consumption of the tipper.
- If you do not need to tip, switch off the tipping engine.
- Always check that the twist locks are tight before tipping with a silo container.
- Turn on the air suspension remote control and put it in drive mode.
- Do not tip the silo (container) higher than necessary. Many products do not require tipping fully or don't need it until the tank is almost empty.
- In case of strong winds (6 Beaufort or higher) stop unloading and lower the tank. Proceed to consult your planner.
- **Never drive with a tipped silo (container). The tipping cylinder can only hold the weight of a full silo when at a standstill. The risk of tipping over is enormous. Tipping is only permitted if the trailer/tipping chassis is stabilised with the support legs.**
- Always stay with your truck during unloading, so you can intervene if something goes wrong.
- Keep an eye on the pressure gauge. If pressure doesn't rise there is probably a leak.

Caution: if a silo (container) leaks through one of the manhole covers, never tighten it while it is under pressure.

- first stop the compressor.
- lower the silo.
- release all pressure.
- loosen the toggles, but don't remove them.
- move the manhole cover to check if there is still pressure.
- Then remove the bolts.
- open the manhole cover.
- check the gasket, replace if necessary.
- close the manhole cover and cross-lock the bolts.



Unloading methods for different product groups

Unloading methods for different product groups have been established to make the unloading process as effective and efficient as possible. These unloading methods are described in the following images.

Unloading Procedure Silo

Products:
(lime) pebbles

Carolith Heavy granule products

1. Tipping Cilinder



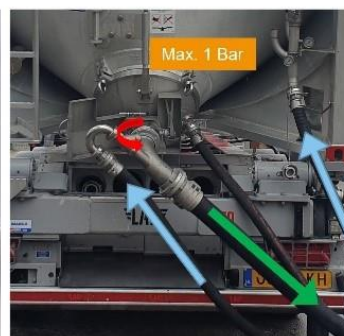
Step 1. Tipping max. 3 cylinders

2. Pressure



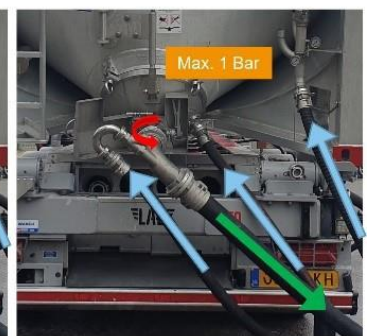
Step 2. Build up pressure
bij opening the upper airline
Max. pressure 1 bar

3. Transport air



Step 3. Open the transport air
and open the unloading valve

4. Vibrator air



Step 4. Vibrator air only when needed
Normally only with Carolith

Unloading Procedure Silo

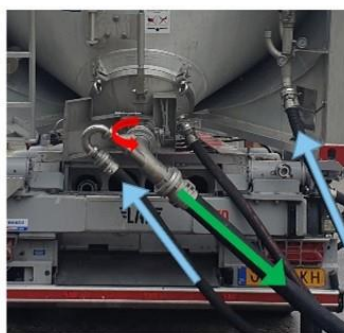
Products:
Poultry meal
Fish meal

1. Pressure



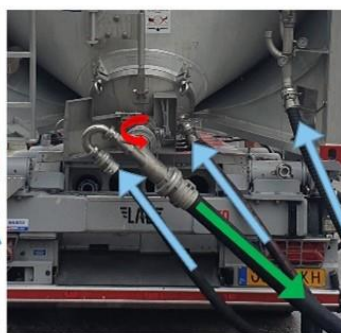
Step1. Build up pressure
bij opening the upper airline

2. Transport air



Step 2. Open the transport air
and open the unloading valve

3. Vibrator air



Step 3. Open the vibrator air
To loosen up the product.
Not to far because of risk for
burning the product

4. Tipping Cilinder



Step 4. When backend is empty start
tipping further with use of transport air and
upper air. Vibrator air only when needed

Unloading Procedure Silo

Products: Plastics
PVC powder, Granulate, PE I PET, PP

1. Pressure


Step1. Build up pressure by opening the upper airduct
Max pressure 1 Bar.

2. Transport air


Step 2. Open the transport air and open the unloading valve.

3. Tipping Cylinder



Step 3. When backend is empty start tipping further with use of transport air and upper air.

4. Vibrator air



No use of vibrator air!

Unloading Procedure Silo

Products: Heavy minerals
2 GU 5GU Microcarb
Stealim Steamac Calcium Carbonate
Lime Talc Chalk

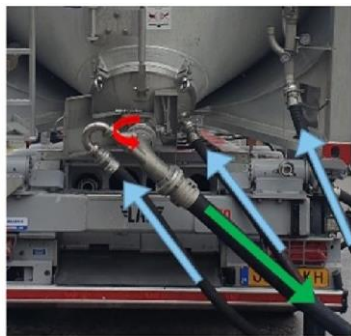
1. Tipping Cylinder


Step 1. Tipping maximum height

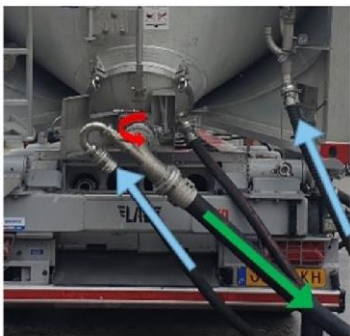
2. Pressure


Step 2. Build up pressure by opening the upper airduct.

Also use air agitator from the start

3. Transport air


Step 3. Open the transport air and open the unloading valve.

4. Vibrator air


Step 4. Keep vibrator air half open during unloading process.

After unloading:

- Ensure the silo/container is completely empty before tidying up.
- Close the product valve.
- Turn off the compressor. The truck's engine can also be turned off now.
- Lower the silo (-container).
- Immediately remove the tipping plug and tidy up the cable.
- Slowly open the vent (avoid condense), consider the rules that apply on site. Sometimes venting is not permitted on the customer's site; enquire about this when entering the site.
- Only vent through the customer's silo if you have the customer's permission.
- Disconnect hoses only when you are sure that there is no pressure.
- Prevent product spillage when disconnecting the hose and unloading elbow. Try to collect the product that unexpectedly comes out in a bucket and dispose of everything in the designated waste bin.
- Return the trailer air suspension to the driving mode.
- Turn support legs all the way in/up.
- Remove the grounding cable and stow it away.
- Before leaving, walk around your truck and check that everything is tidy and in the correct place. Don't forget your tools.
- If venting is not permitted, take a weight difference of 20-30kg from the usual empty weight into account; pressurised air is not weightless.
- Make sure the CMR is signed off specifying unloaded weight, waiting and unloading times, as well as discrepancies in, for example, a difference in loaded and unloaded weight.
- Make sure the CMR is signed off at the bottom right of the CMR with no comments. If you do receive comments, always report this to planning when you are at the unloading site and wait for further instructions.

Tipping over a pit (free-fall unloading):



Tipping over a pit (free-fall unloading) is not risk-free. Please pay attention to the rules below:

- Lower the support legs and lower air suspension as you would when unloading normally with a compressor.
- Driving with a trailer in tipped position is not permitted.
- Check if the silo is under pressure.
- The unloading bottom must be unscrewed completely. Start with the top swivels and unscrew the bottom one last.
- Bear in mind that the product's weight can cause the unloading bottom to swing back when you unscrew the last swivel. Make sure you stand next to the unloading bottom and not behind or under it.
- Before tipping up, leave at least the front manhole cover open.
- If you don't do this, the tank will implode due to the vacuum created when the cargo slides down.
- If the product is stuck in the tank do not keep tipping; this will result in far too much product suddenly coming out at once. Instead, try using a shovel or long stick to loosen the product. Again, do not stand behind/under the tank, but to the side.
- Bear in mind that some of the product will end up on the bumper and chassis. Sweep up everything at the unloading address.
- If you are uncertain or think that tipping unloading cannot be done safely, do not do it and contact your planner.