



Driver's manual VSE Steering

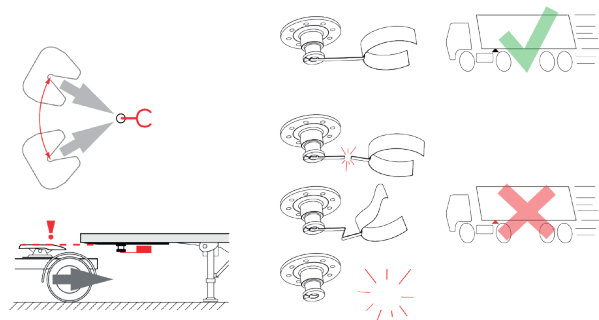
VSE takes you further!

The VSE steering system has been developed so that no special procedures are required in comparison to a trailer without a steering system. There are, however, a few things that require a bit of extra attention. This document contains the information necessary to quickly familiarise a driver with the steering system.

Coupling the trailer

When coupling the trailer, special attention must be given to ensure the flag (lever) on the kingpin is in line with the driving direction of the truck (when the truck and trailer are in line, the flag points toward the rear of the trailer). During coupling, the fifth wheel plate must be at the same height as the kingpin in order to prevent damage to the kingpin flag. (See figure 1)

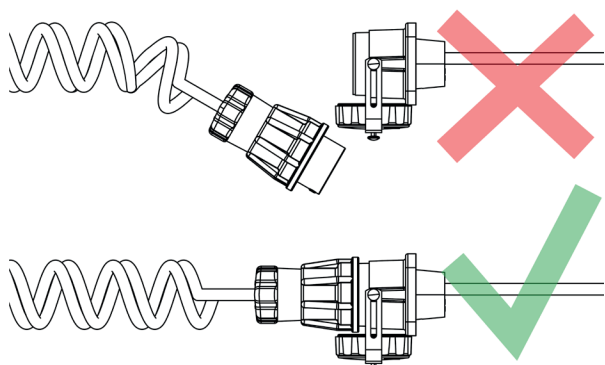
Figure 1



Charging system connection

Trailers with a VSE steering system can only be coupled to a truck with a charging system connection for the trailer. This is necessary to keep the batteries in the trailer fully charged and to ensure the VSE steering system functions properly at all times. (See figure 2)

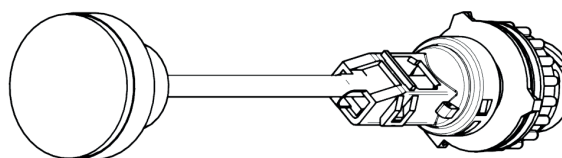
Figure 2



EBS/ABS

The VSE steering system requires an EBS/ABS connection between the truck and trailer because the EBS/ABS system provides the speed signal and the ignition-on power supply to the steering system.

Figure 3



Function lamp

Every trailer with a VSE steering system has a green function lamp (see figure 3). This lamp indicates the status of the steering system:

Normal steering mode: function lamp is off. The steering system is operational.

Start-up mode: function lamp flashes, 1/10 second on and 3 seconds off (continuous cycle). This mode is activated when the vehicle ignition is switched on (or the engine is started) after the trailer has been coupled at a different angle than the last time it was uncoupled. The steering system 'waits' for a steering movement. When the ignition is switched on (or the engine is started) after the trailer has just been coupled to the truck, the function lamp will go on briefly 1 or 2 times and then go off.

Alarm mode: function lamp is on. This mode indicates a malfunction has been detected in the steering system.

Manual operation mode: function lamp flashes, 2/3 second on and 1/3 second off (continuous cycle). This mode is only present on trailers outfitted for manual operation of the steering system. For additional information, see the manual operation instructions.

Maintenance instructions

The VSE steering system is easy to maintain. To ensure that no unexpected faults occur, it is recommended that the following four points be checked on a weekly basis:

1. Check whether the trailer is leaking oil, and also check the VSE system locker for oil leakage.
2. Check the hydraulic hoses for leaks.
3. Check that the function light is working at start-up.
4. Check that the oil level on the dipstick or sight

glass is still between the minimum and maximum marks. *If the oil level is too low, add oil in accordance with specification 137. Consult our website for this specification.*

If your trailer has BPW axles, lubricate the rod ends monthly.

Annual VSE maintenance service visit: To ensure that the steering system continues to function optimally, we recommend the annual VSE maintenance service visit. Contact an authorised VSE service partner for an appointment. Consult our website for a VSE service partner near you. If there is no VSE service partner near you, please contact VSE for more information.

Please note: If you have a two-year warranty, the annual VSE maintenance service visit is mandatory for the first year.

Note: The goodwill period expires if you do not have the annual maintenance service visit done by an authorised VSE service partner.

Malfunctions

In the unlikely event a malfunction occurs in the VSE steering system, the malfunction can be cleared by parking the vehicle, switching off the ignition for 10 seconds and then switching it on again. If the alarm occurs again immediately, it is recommended that you check the following items:

1. Check the oil level. If the oil level is too low, also check the steering system for oil leaks.
2. Check the charging system cable between the truck and the trailer.
3. If the malfunction occurs soon after the trailer has been coupled to the truck, check the flag on the kingpin sensor.
4. Check the voltage and condition of the batteries.
5. Check the mechanical connections of the steering cylinders for damage (steering ball joints etc.).
6. Check the operation of the ABS/EBS: When there is a malfunction in the trailer's ABS/EBS system, the ETS steering system may not function properly. Therefore, first correct the malfunction in the trailer's ABS/EBS system.

Do all these things check out OK but the problem is still there? Then contact an authorized VSE service partner for an appointment. See our website for a VSE service partner near you.

WARNING!

If a fault occurs, the steered axles will always move to the straight-ahead position when the vehicle is rolling. This has an effect on the steering behaviour of the trailer. When stationary, straightening depends on the degree of loading.

WARNING!

Maximum axle load with a VSE steering system is 10 tonnes!

WARNING!

The VSE steering system is suitable for a temperature range of -40 to +45 °C. However, at temperatures of -25 °C and below the steering system will not perform as well due to the high viscosity of the oil. This means that the steering system will steer more slowly. The system will, however, continue to function.

See next page

Maintenance overview

Company name	
Trailer brand	
VSE steering system was inspected by	
Inspection date	

VSE steering system and trailer data

Type of steering system (see system locker sticker)	
Order number (see system locker sticker)	
Type of trailer	
Trailer chassis number	

Work performed	
Date:	Signature/stamp VSE service point:

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Maintenance overview

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