Rescue, towing, lashing, lifting by crane

7 Rescue, towing, lashing, lifting by crane

7.1 Rescue, towing, lashing

7.1.1 Rescue/towing of the swivel loader if the engine or drive has failed

CAUTION

The loader must not be tow-started. Any attempt to tow-start leads to damage.

DANGER

Secure the rescue location if it is on a public road.

NOTE

- Towing is only permitted to clear the area of use or a street.
- Preparation for towing depends on whether the engine has failed, thus causing a failure of the entire hydraulic system, or if only the drive has failed and the engine can drive the rest of the hydraulic system.

7.1.1.1 Towing the swivel loader if the engine has failed

(1) Press the toggle switch for the hazard flasher (4-11/10).

(2) Set the drive switch (4-10/3) to position "0".

NOTE

The preparation in points (3), (5), (6) and (11) is only to be carried out if the rescue location is **not** on a public road.

(3) Switch the toggle lever for the steering system (4-9/4) of the front axle to the “rear-wheel steering” position; the wheels of the front axle must be in the straight position.

(4) Set the parking brake (4-10/8).

CAUTION

If the rescue location is on a slope, wheel chocks must be placed on the sloping side of both front axle wheels in addition to applying the parking brake.

(5) Cover the bucket cutting edge and teeth with the bucket protector (5-3/arrow).

(6) Insert the plug of the bucket protector in the socket (5-4/arrow).

(7) Unlock the pilot valve for the working hydraulics (4-10/2) and push it beyond its pressure point into the forward position.

(8) Using a suitable lifting device, e.g. a second loader with an attached bucket, lift the bucket arm of the loader to be towed until the bucket arm support can be inserted into the loader to be towed (7-1).

Figure 7-1

(9) Insert the bucket arm support (1-1/arrow) and lower the bucket arm onto the bucket arm support.

(10) Close the ball block valve for the working and auxiliary hydraulics (1-2/arrow).

(11) Block the swivel mechanism by inserting the blocking wedge (1-3/arrow) in the swivel blocking mechanism (1-4/arrow).

(12) Attach the towing rod to the loader to be towed [(7-2/1 - for towing forwards) or (7-4/1 - for towing backwards)] and to the towing vehicle.

CAUTION

If the loader does not have a forward ranging and towing coupling, the loader must only be towed backwards.

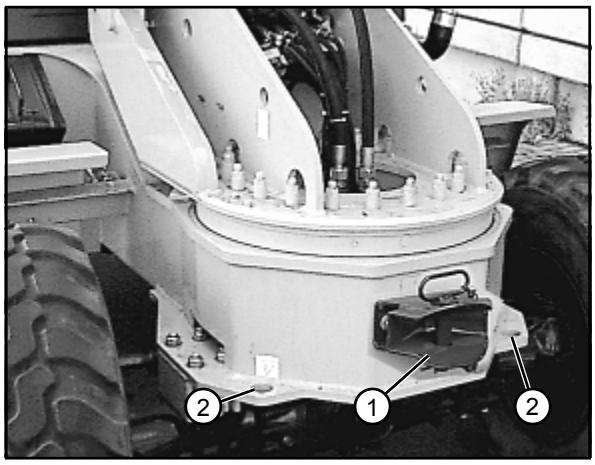

Figure 7-2

(13) Switch the hydrostatic drive to free oil circulation before towing. For this purpose, the screws (7-3/arrows) on the two high-pressure limiting valves of the traction pump must be screwed in until they are in line with the lock nuts loosened beforehand (size 13). Then tighten the lock nuts again.

NOTE

After towing is finished, loosen the nuts and screw out the screws of the two high-pressure limiting valves all the way.Then tighten the lock nuts again.

(14) If necessary, remove the chocks.

(15) Release the parking brake (4-10/8).

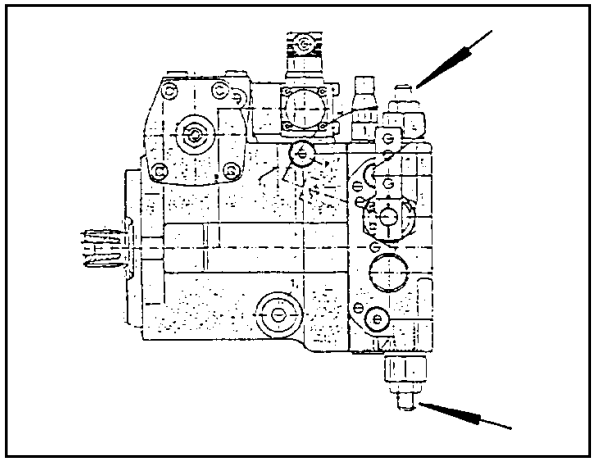

Figure 7-3

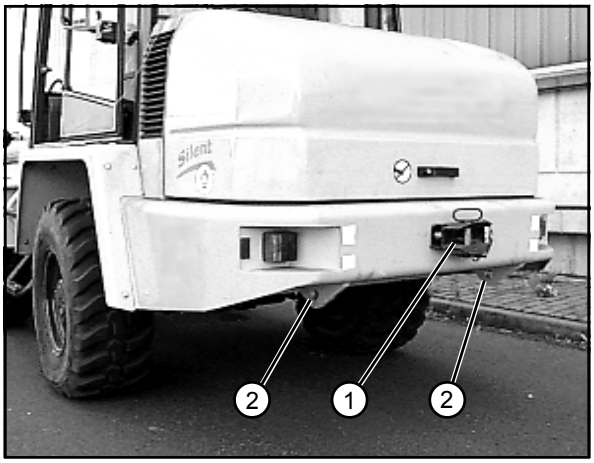

Figure 7-4

DANGER

- More power is required to steer if the engine has failed.
- Tow the loader at walking speed (2 km/h).
- The towing distance should not exceed 1 km.
- For a longer distance, the defective loader must be loaded onto a truck (for the lashing points, see 7-2/1 and 7-2/2, 7-4/1 and 7-4/2).
  - The max. permitted load of the forward ranging and towing coupling (7-2/1) is 8.0 t horizontally in the longitudinal direction.
  - The max. permitted load of the rear ranging and towing coupling (7-4/1) is 8.0 t horizontally in the longitudinal direction.
  - The max. permitted load of the lashing points/load-bearing points (7-2/2 and7-4/2) is 2.0 t at an assumed bracing angle of 45°.

7.1.1.2 Towing the swivel loader when the drive has failed

(1) Press the toggle switch for the hazard flasher (4-11/10).

(2) Set the drive switch (4-10/3) to the “0” position.

NOTE

The preparation in points (3), (5), (6) and (9) is only to be carried out if the rescue location is **not** on a public road.

(3) Switch the toggle lever for the steering system (4-9/4) to the “rear-wheel steering” position; the wheels of the front axle must be in a straight position.

(4) Set the parking brake (4-10/8).

CAUTION

If the rescue location is on a slope, wheel chocks must be placed on the sloping side of both front axle wheels in addition to applying the parking brake.

(5) Cover the bucket cutting edge and teeth with the bucket protector (5-3/arrow).

(6) Insert the plug of the bucket protector in the socket (5-4/arrow).

(7) Lift the bucket arm, insert the bucket support (1-1/ arrow) and lower the bucket arm by activating the hand lever for the working hydraulics (4-10/2) until the bucket arm rests on the bucket support.

(8) Close the ball block valve for the working and auxiliary hydraulics (1-2/arrow).

(9) Block the swivel mechanism by inserting the blocking wedge (1-3/arrow) in the swivel blocking mechanism (1-4/arrow).

(10) Attach the towing rod to the loader to be towed [(7-2/1 - for towing forwards) or (7-4/1 - for towing backwards)] and to the towing vehicle.

CAUTION

If the loader does not have a forward ranging and towing coupling, the loader must only be towed backwards.

(11) Switch the hydrostatic drive to free oil circulation before towing. For this purpose, the screws of the two high-pressure limit valves (7-3/arrows) of the traction drive must be screwed in until they are in line with the lock nuts loosened beforehand (size 13). Then tighten the lock nuts again.

NOTE

After towing is finished, loosen the nuts and screw out the screws of the two high-pressure limiting valves all the way.Then tighten the lock nuts again.

(12) If necessary, remove the chocks.

(13) Release the parking brake (4-10/8).

DANGER

- Tow the loader at walking speed (2 km/h) with the engine running.
- The towing distance should not exceed 1 km.
- For a longer distance, the defective loader must be loaded onto a truck (for the lashing points, see 7-2/1 and 7-2/2, 7-4/1 and 7-4/2).

NOTE

See page 7-4 for the max. permitted load of the lashing/load-bearing points.

7.2 Lifting by crane

The loader to be lifted is to be prepared as follows:

(1) Set the drive switch (4-10/3) to the “0” position.

(2) Set transmission stage "I" (4-11/13) (only for fast loaders).

(3) Set hydraulic drive stage "I" (4-10/1).

(4) Set the parking brake (4-10/8).

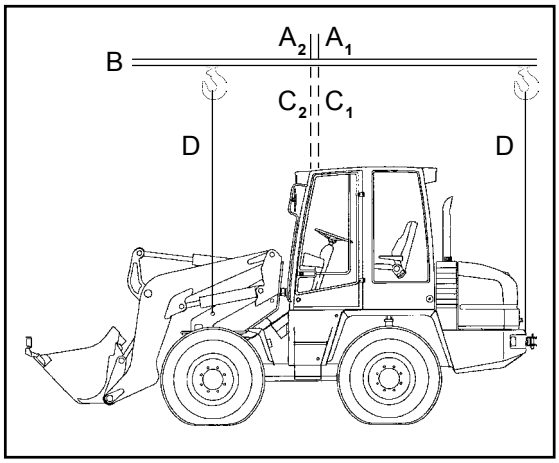

Figure 7-5

(5) Lift or lower the bucket arm until the lowest point of the bucket arm or the bucket is at least 30 cm above the road (5-2).

(6) Close the ball block valve for the working and auxiliary hydraulics (1-2/arrow).

(7) Block the swivel mechanism by inserting the blocking wedge (1-3/arrow) in the swivel blocking mechanism (1-2/arrow).

(8) Lock the doors.

(9) Fold the outside mirror inwards.

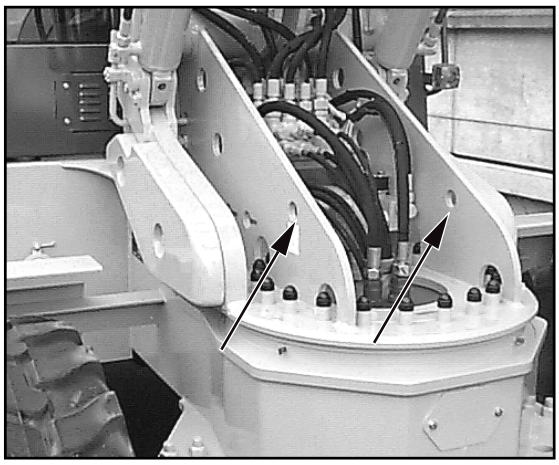

Figure 7-6

CAUTION

The following items must be observed when lifting the loader by crane (Figure 7-5):

- The lifting point (A_1 - loader without standard bucket or A_2 - loader with standard bucket) of the lifting device (B) must be precisely vertically over the centre of gravity (C_1 or C_2) of the loader so that the lifting device is **horizontally** above the longitudinal axis of the loader.

- The lifting gear (D) must lead vertically upwards from the lifting points of the loader (7-6/arrows and 7-7/arrows).

DANGER

The lifting gear must have a lifting capacity of at least 3.0 t.

Figure 7-7