

**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 articulated loader if the engine or drive has failed



CAUTION

The articulated 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 site 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 articulated loader if the engine has failed

(1) Actuate the toggle switch for the hazard flasher (4-8/7).

(2) Set the drive switch (4-12/5) to "0".

(3) Apply the parking brake (4-12/7).



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.



NOTE

The preparations described in steps (4) and (5) are only to be carried out if the rescue location is **not** on a public road:

(4) Cover the bucket cutting edge and teeth with the bucket protector (5-4/arrow).

(5) Insert the plug of the bucket protector into the socket (5-5/arrow, option).

(6) Push the valve lever for the working hydraulics (4-12/6) beyond its pressure point into the forward position.

(7) 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 mechanical bucket arm support can be inserted at the loader to be towed (7-1).

(8) Mechanically prop up bucket arm [e.g. by inserting the bucket arm support (option) (1-2/arrow)] and lower bucket arm until it rests on the bucket arm support.

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

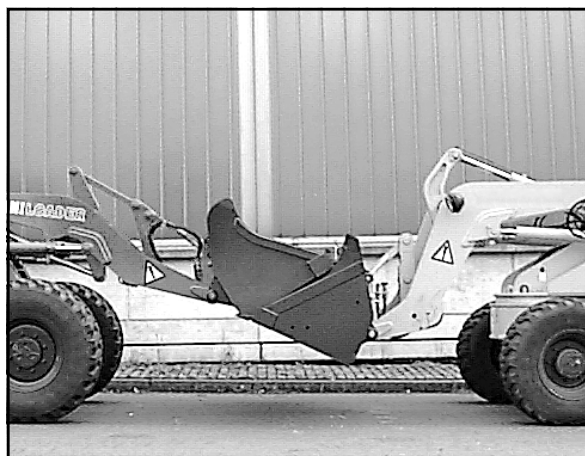


Figure 7-1

(10) Connect the tow rod to the loader to be towed (7-2/2) and to the towing vehicle.

(11) Release the parking brake lever (4-12/7).

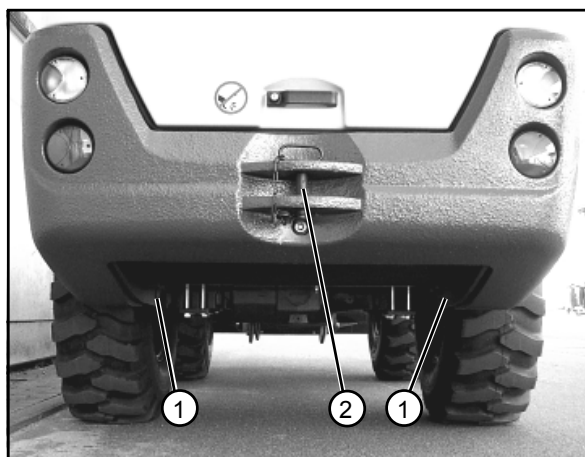


Figure 7-2

(12) Loosen the adjusting screws (7-3/1 and 7-4/1) of the spring-loaded brake.

(13) Remove the spacers (7-3/2 and 7-4/2) and completely tighten the adjusting screws again.

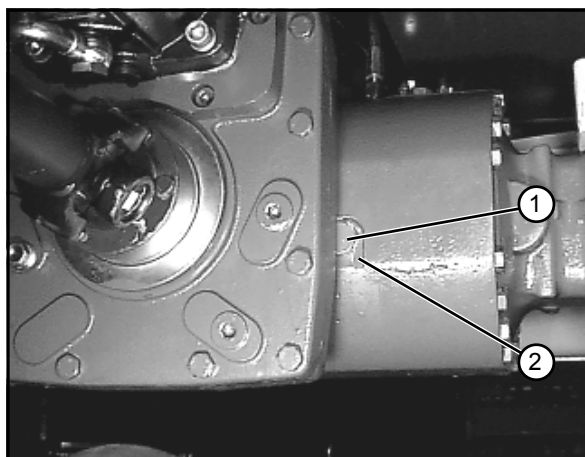


Figure 7-3

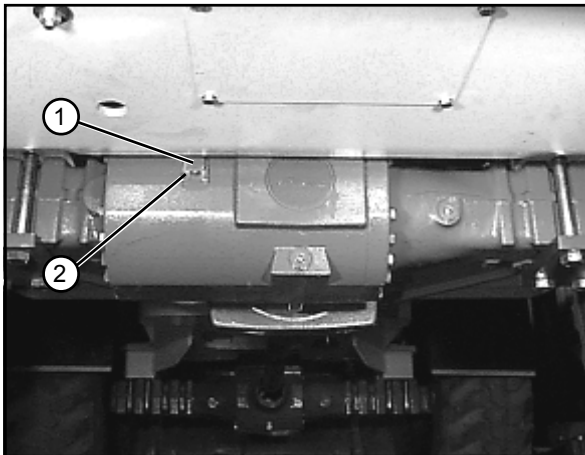


Figure 7-4

CAUTION

- After towing has been completed, restore the operating state of the brake.
To do so, loosen the adjusting screws (7-3/1 and 7-4/1), insert the spacers (7-3/2 and 7-4/2) between adjusting screws and axle arch and tighten the adjusting screws again.
- Tighten the adjusting screws (7-3/1 and 7-4/1) to a torque of 95 to 115 Nm.

(14) Switch the hydrostatic drive motor to free oil flow before towing. For this purpose, screw in the setscrews at both high pressure relief valves (7-5/arrows) of the drive pump until they are level with the hexagon nuts (size 13) loosened beforehand. Then tighten the hexagon nuts.

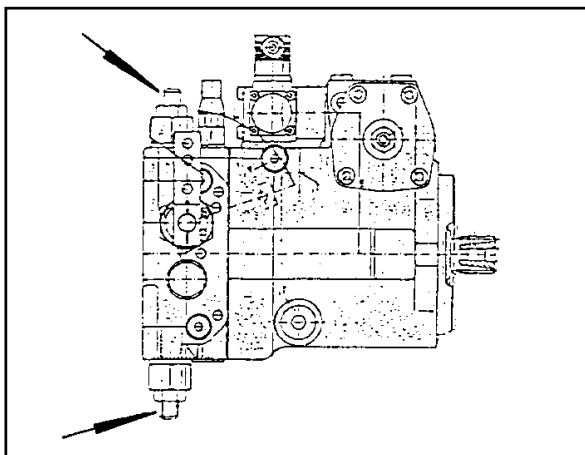


Figure 7-5

NOTE

After towing has been completed, loosen the hexagon nuts again. Screw the setscrews out of both high pressure relief valves until they stop. Tighten the lock nuts.

(15) Remove the chocks (if applicable).

DANGER

- More power is required to steer if the engine has failed.
- Tow the loader at walking speed (2 kmh).
- 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, 7-2/2 and 7-6/arrows).
- The max. permissible load of the shunting and towing coupling (7-2/2) is 4.5 t horizontally in the longitudinal direction.
- The max. permissible load of the lashing points/load-bearing points (7-2/1 and 7-6/arrows) is 2.0 t.



Figure 7-6

NOTE

- If the loader has been out of operation for a longer period of time, the hydraulic hoses (7-7/arrows) must be disconnected from the lifting cylinders before attaching the lifting gear. Collect the escaping hydraulic oil in a sufficiently large oil pan.
- After towing has been completed, fill the lifting cylinders with hydraulic oil and bleed them by raising and lowering the bucket arm several times.



Figure 7-7

7.1.1.2 Towing the articulated loader if the drive has failed

- (1) Actuate the toggle switch for the hazard flasher (4-8/7).
- (2) Set the drive switch (4-12/5) to "0".
- (3) Apply the parking brake (4-12/7).

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.



NOTE

The preparations described in steps (4) and (5) are only to be carried out if the rescue location is **not** on a public road:



- (4) Cover the bucket cutting edge and teeth with the bucket protector (5-4/arrow).
- (5) Insert the plug of the bucket protector into the socket (5-5/arrow, option).
- (6) Lift and mechanically prop up bucket arm [e.g. by inserting the bucket arm support (option) (1-2/arrow)] and lower bucket arm until it rests on the bucket arm support.
- (7) Close the ball block valve (1-2/arrow) for the working and auxiliary hydraulics.
- (8) Connect the tow rod to the loader to be towed (7-2/2) and to the towing vehicle.
- (9) Switch the hydrostatic drive motor to free oil flow before towing. For this purpose, screw in the setscrews at both high pressure relief valves (7-5/arrows) of the drive pump until they are level with the hexagon nuts (size 13) loosened beforehand. Then tighten the hexagon nuts.

NOTE

After towing has been completed, loosen the hexagon nuts again. Screw the setscrews out of both high pressure relief valves until they stop. Tighten the lock nuts.



- (10) Remove the chocks (if applicable).
- (11) Release the parking brake (4-12/7).

7 Rescue, towing, lashing, lifting by crane

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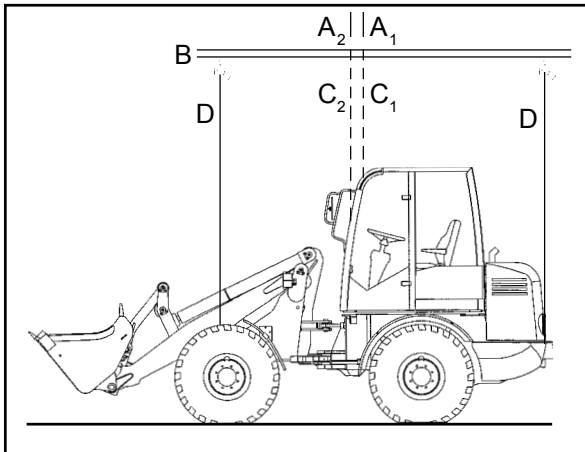


Figure 7-8

DANGER

- With the engine running, 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, 7-2/2 and 7-6/arrows).
- The max. permissible load of the shunting and towing coupling (7-2/2) is 4.5 t horizontally in the longitudinal direction.
- The max. permissible load of the lashing points/load-bearing points (7-2/1 and 7-6/arrows) is 2.0 t.

7.2 Lifting by crane

The loader to be lifted must be prepared as follows:

- (1) Set the drive switch (4-12/5) to "0".
- (2) Set hydraulic drive stage „I“ (4-12/1).
- (3) Apply the parking brake (4-12/7).
- (4) Lift or lower the bucket arm until the lowest point of the bucket arm or of the bucket is at least 30 cm above the road (5-4).
- (5) Close the ball block valve for the working and auxiliary hydraulics (1-2/arrow).
- (6) Remove the articulation safeguard after loosening of the fixing screw, insert the bend in protection into the articulated link and fasten it (1-3/arrow).

CAUTION

Make sure prior to tightening the screws that the articulation safeguard makes contact with the loader rear.

- (7) Lock both doors.
- (8) Fold the outside mirror inwards.

CAUTION

The following items must be observed when lifting the loader by crane (Figure 7-8):

- The lifting point (A₁ - loader without standard bucket or A₂ - loader with standard bucket) of the lifting device (B) must be precisely vertically over the centre of gravity (C₁ or C₂) of the loader so that the lifting device is **horizontally** above the longitudinal center axis of the loader.
- The lifting gear (D) must lead vertically upwards from the lifting points of the loader (7-9/arrows and 7-10/arrows).

DANGER

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



Figure 7-9



Figure 7-10