

6 Driving the Crane

6.1 Checks Before Driving the Crane

The following checks should be carried out each time before driving the crane, even if only short distances are to be covered. How to check the capacities for all fuels and lubricants is described in detail in the Lubrication and Maintenance Instructions for the Crane Chassis (Part 4).

- Transport condition of the mobile crane (see Sect. 6.2)
- Check the engine oil level and top up if necessary.
- Check the hydraulic oil level.
If level is too low: First determine the cause – then top up.



Before the hydraulic oil has warmed up, do not run the engine at speeds of over $n = 1600$ rpm.

- Check the oil level in the transmission and top up if necessary.
- Check the coolant level.
If level is too low: First determine the cause – then top up.
- Check the steering. Indicator lights (72) and (73) must go out shortly after the engine is started.
Since the emergency steering pump is driven by the rolling vehicle, indicator light (74) does not go out until the vehicle starts moving.



Driving the crane with defective steering constitutes a major safety hazard. Faults must be rectified before the crane is driven.

- Test the indicator lights with the ignition switched on to see that they are functioning correctly. Press the appropriate button to check whether the integral indicator light is working.
 - (31, H 425): Longitudinal differentials locked
 - (35, H 411.1): Transmission / converter oil temperature
 - (40, H 426): Transverse differentials locked
 - (67, H 349): Air filter clogging
 - (69, H 345.1): Coolant / engine temperature

6.2 Driving on the Road

(Z 35 570)

All the control and monitoring elements required for driving the crane are located in the driver's cab of the crane chassis.

If the crane is fitted with independent rear-axle steering (optional), indicator lights (120, 121 and 125) must not come on.



When driving on the road it must be ensured that the max. distance (= the distance covered in one hour) of 70 km is not exceeded.

6.2.1 General

The **transport condition** of the mobile crane depends on the **road traffic regulations applicable** in the **country** in which the crane is to be operated.

A distinction must be made between the **axle loads** which are **technically possible** and those which are **permissible** under the **road traffic regulations**.



According to the German road traffic licensing regulations the crane has a maximum transport weight of:
60 tonnes for a 5 axle chassis and
72 tonnes for a 6 axle chassis.

The crane operator must therefore always drive in an appropriate manner and with foresight, especially in difficult conditions such as on sloping ground.

6.2.4 Driving on the Road with Axle Loads up to a Maximum of 12 t (Z 35 570)

6 axle chassis

Crane with main boom, single sheave hook block, hoist 1, hoist 2 or replacement weight, 1.0 t counterweight (on the superstructure) and 4.2 t counterweight base plate on the chassis.

The remaining counterweights and the spare wheel must be transported separately.

Observe the following before driving the crane on the road:

- All telescopic sections on the main boom must be pin locked.
- Apply all transport safety locks as described in Section 6.2.2.
- The hydraulic suspension of the chassis must not be locked (see. Sect. 11).
- Independent rear-axle steering (optional facility) must be switched off (see Sect. 9).
- A new chart must be inserted in the tachograph in the driver's cab of the crane chassis.
- The power supply to the support pressure indicator is to be switched off by actuating the rotary switch on the display console.



In this transport condition the crane reaches a total weight of approx. 70 t with axle loads of 12 t for each front axle and 11,5 t for each rear axle.



"Technical Driveability" with axle loads over 12 t is for exceptions only.

This will put strain on the whole chassis, in particular steering, wheels and tyres, axles and axle suspension as well as the suspension system, at the expense of service life.

If the crane is driven repeatedly over a longer period of time with axle loads over 12 t, the above components (steering, wheels, tyres, axles, axle suspension and suspension system) must be checked every 3 months for damage and wear. This is especially the case when adjusting the steering geometry.

When the defect is discovered it must be dealt with straight away in order to prevent safety risks, further wear or irreparable damage to the component.

The examination and possible adjustment of the steering geometry or the repair of other components affecting safety, may only be carried out by our Service department, or a corresponding specialist workshop.

The crane must **not** be steered on the spot or when on very uneven ground.

The independent rear-axle steering must not be engaged.

The power supply to the support pressure indicator is to be switched off by actuating the rotary switch on the display console.

When driving, note the pressures displayed for the suspension circuits. They should be even and must not exceed 260 bar.

Driving in this travelling condition is only permitted for **short** stretches.



When driving with axle loads over 14 t, the maximum permissible speed stipulated in the table in Sect. 6.2.1 must be adhered to.

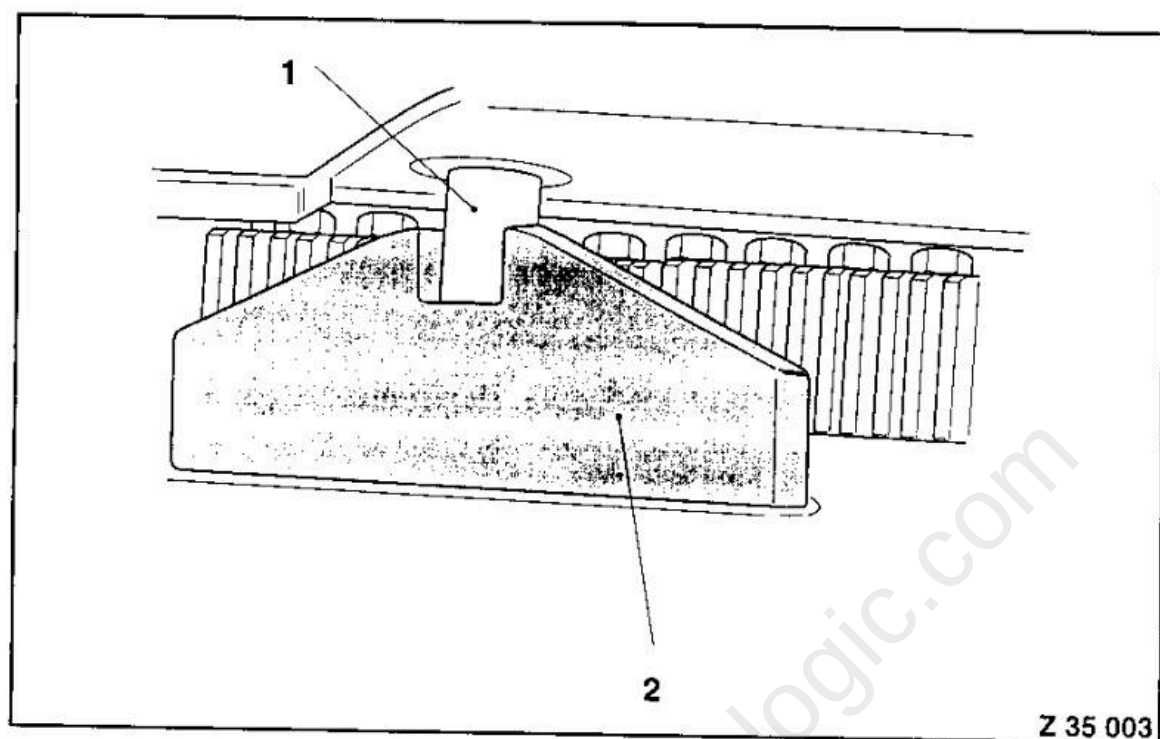


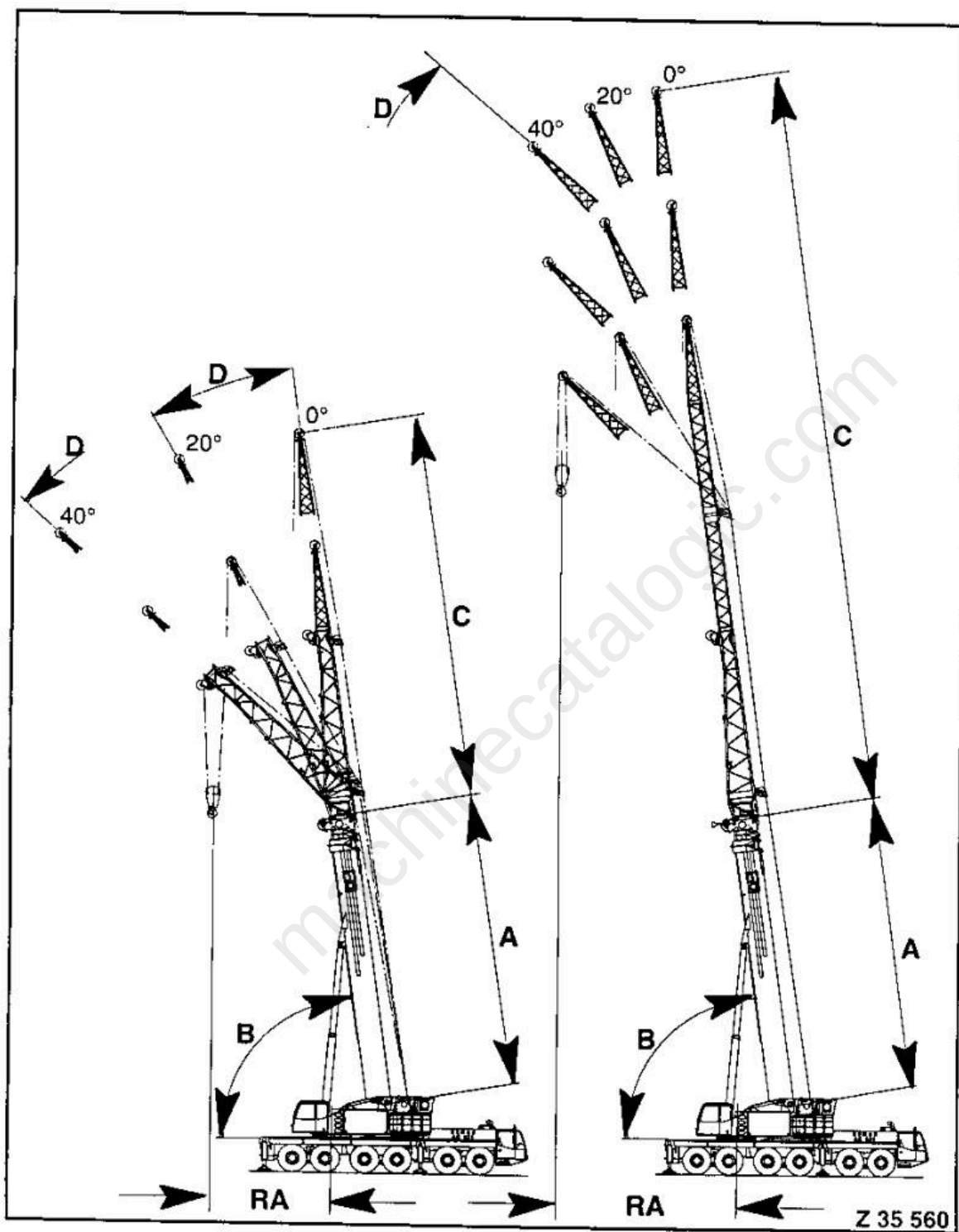
For transport condition and axle loads, please refer to the table at the end of this Section.



When driving with the counterweight base plate / counterweight section placed on the chassis, these must be secured correctly (see the Operating Instructions for the Superstructure, Part 1, Sect. 9).

No.	Monitoring equipment	Indication	Comment (measures)
88	Remote thermometer – coolant temperature	Maximum permissible coolant temperature = +95° C exceeded	Stop mobile crane; allow engine to idle until temperature has dropped, then switch off engine. Establish cause of fault and rectify.
87	Twin pressure gauge – pressure in the braking system, (emergency pressure supply)	Displayed emergency pressure supply is below required P = 7 bar to 8 bar, or pressure in braking system fails to reach emergency pressure level after operation of the brakes.	Stop the mobile crane, establish the cause of the fault and rectify.
86	Indicator light – pressure in the braking system	Pressure below 5.5 bar. Effectiveness of brakes not reliable.	Top up the supply tank with the engine running and the crane stationary (before driving the crane).
90	Pressure gauge – engine oil pressure	Pressure fluctuating wildly or falling rapidly	Switch off the engine immediately, establish cause of fault and rectify.
103	Remote thermometer – converter oil temperature	1. Maximum oil temperature during converter operation = 130° C 2. Maximum oil temperature during retarder operation = 150° C	1. Change down to a low gear in order to engage the override clutch. Continue driving in this condition until the indicator is back in the green range (approx. 100°C). 2. If changing down is not sufficient, switch off the retarder and use the service brake. For further instructions see Sections 7 and 8.
56	Instrument cluster: odometer, speed indicator, revolution counter, tachograph, clock	Maximum engine speed = 2100 rpm	When driving the crane, avoid reaching the maximum revs. Under no circumstances should the maximum revs be exceeded.
5 / 6	Pressure gauge – hydraulic suspension "circuit I"	Pressure in one suspension circuit sinks rapidly during travel; signifies a serious fault affecting safety.	Stop the mobile crane, establish the cause of the fault and rectify.
7 / 9	Pressure gauge – hydraulic suspension "circuit III"		
8 / 10	Pressure gauge – hydraulic suspension "circuit II"		





6.4.2.3 Driving the Crane with the Luffing Fly Jib (20 – 58 m) Fitted

6 axle chassis

(Z 35 561)

The different boom positions and axle loads relative to the configuration of the crane are to be taken from the following table.

Counter-weight (t)	Super-structure position (°)	A (m)	B (°)	C (m)	D (°)	RA (m)	Axle loads (t)	
							1 + 2	3, 4, 5 + 6
40	180°	14,7	82	20	70	8,7	16,7	19,5
				32		12,8	15,3	20,4
				41		15,1	14,6	20,9
				47		17,2	13,8	21,4
				53		19,2	12,7	22,0
				58		20,3	12,0	22,5
54	180°	14,7	82	20	70	8,7	20,6	21,1
				32		12,8	19,2	22,0
				41		15,1	18,5	22,4
				47		17,2	17,7	22,9
				53		19,2	16,7	23,6
				58		20,3	16,0	24,0

* Superstructure position: 180° – main boom to the rear



The following hook blocks must be used:

- Length C'' = 20 m : 7 sheaves (1500 kg)
- Length C'' = 32 m : 5 sheaves (1200 kg)
- Remaining lengths : single sheave (750 kg)

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