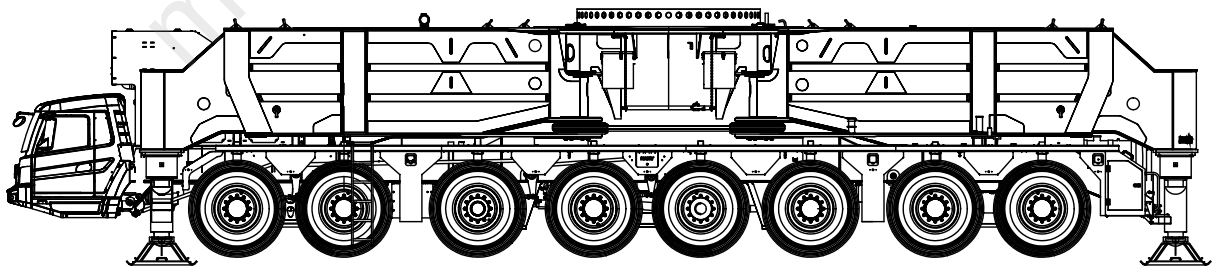


Quality Changes the World



Lattice Boom All Terrain Crane

SCL10000



Safety, Operation and Maintenance Manual

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Example: Calculation of required support pressure	
Maximum support force according to chapter 1.03:720 kN	720000 N
Permissible ground pressure: 20 N/ cm ²	20 N/ cm ²
Required support pressure = Support force/ permissible ground pressure	720000 N/ 20 N/ cm ² =36000 cm ²
Required support pressure:	36000 cm ² =3.6 m ²

The surface of the support for each outrigger pad must be at least 3.6 m² .

NOTE :

The corresponding support forces can be determined with the crane job planer.

2.2.9 Supporting

2.2.9.1 General

It is absolutely essential that the crane be supported exactly in accordance with the load charts to ensure safe operation.

Prior to set-up and operations, owners and operators should evaluate the soil bearing capacity at the site to ensure that the machine, loads and procedures are compatible with work site conditions.

The match of the outrigger beams placement surfaces must be observed to ensure proper force transfer between the outrigger beams. The crane may only be supported in these extension conditions.

⚠ DANGER

Risk of toppling the crane!

Intermediate positions of the specified support widths may not be carried out, because the force transfer is only possible via the side placement surfaces and in intermediate positions, due to the lack of placement surfaces, an incorrect force transmission can occur on the upper chord.

Pin the outrigger beams to prevent subsequent movement of the placement surfaces.

The pins must be completely inserted and secured

All the outrigger beams and outrigger jacks must be extended according to the data in the load chart, also those on the counterweight side. If only the load side outrigger beams are extended, the crane can tip over when turning or setting down the load.

6. Button switch for rear axle locking mode

Function control on this button illuminates, rear axle locking mode

Does not illuminate: current mode has not been selected

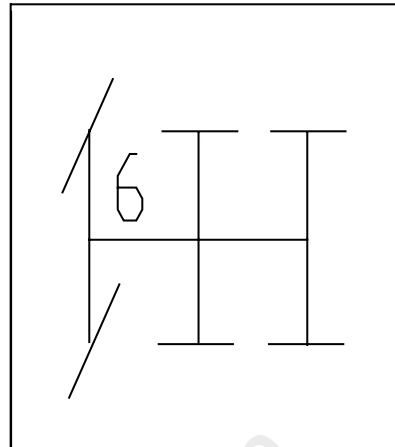


Fig 3-48 Button switch for rear axle locking mode

7. Enable switch

Press the button to enable the function.

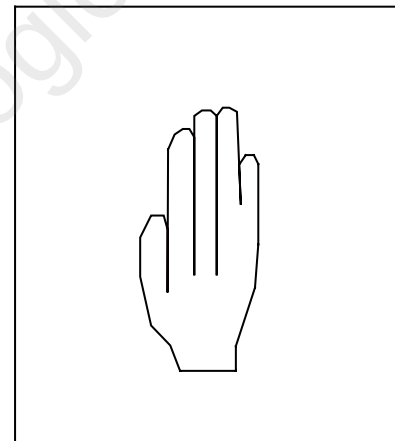


Fig 3-49 Enable switch

8. This button is spare

4.3 Engine Procedures

4.3.1 General

Check the work area to be sure all personnel and equipment are clear from your machine. Before starting the machine, sound your horn to warn others you are going to start the machine.

Start-up and shut-down procedures for most diesel engines are generally the same. Therefore, use the following procedures except where specific differences are noted.

Refer to the engine manual for more details.

WARNING

Never attempt to start the machine if it has been locked out by maintenance personnel. If in doubt, contact the maintenance supervisor. Failure to follow this warning could result in death or serious injury.

WARNING

Diesel engine exhaust can be harmful to your health or even fatal. Operate the engine only in a well-ventilated area or vent the exhaust outside. Failure to observe and follow this warning could result in death or serious injury.

4.3.2 Cold Weather Operation

1. Operation of machine at full-rated capacities in temperatures between 45° C and -30° C or lower should be accomplished only by competent operators who possess the skill, experience and dexterity to ensure smooth operation. Shock-loading must be avoided.

Refer to "Cold weather operation".

2. The machine must have appropriate oil, lubricants and other materials required for operation in sub-zero temperatures. Individual machine functions should be operated to ensure they are sufficiently warmed prior to performing work.

Refer to "Lubricants and fluids".

NOTE :

Include fuel, engine oil, engine coolant, hydraulic oil, gear oil, grease, clutch oil.

3. Battery capacity decreases with the ambient temperature drops off. To keep the battery capacity at 100%. Do not let the battery stay too long in the low temperature circumstance. Cover the battery or remove it from the machine. Store the battery in a warm place and reinstall it before operating your machine again.

NOTE :

4.6.2.5 Raise the Entire Vehicle

- Press and hold down button (a, b, c, d), indicator lamps illuminate.
- Press button (f) + button (e), indicator lamps on button (a, b, c, d) flash, the vehicle is fully raised.
- Release button (f) or button (e), raising stops.

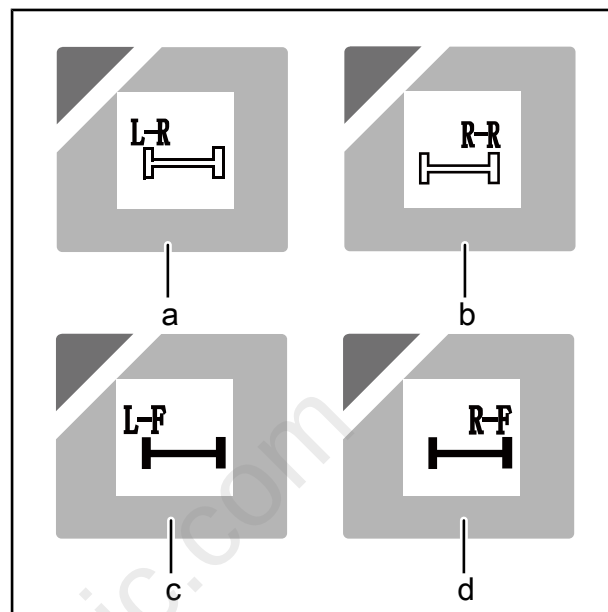


Fig 4-35 Raising and lowering the entire vehicle

- | | |
|---|--|
| a. Left rear suspension point selected | c. Left front suspension point selected |
| b. Right rear suspension point selected | d. Right front suspension point selected |

4.6.2.6 Lower the Entire Vehicle

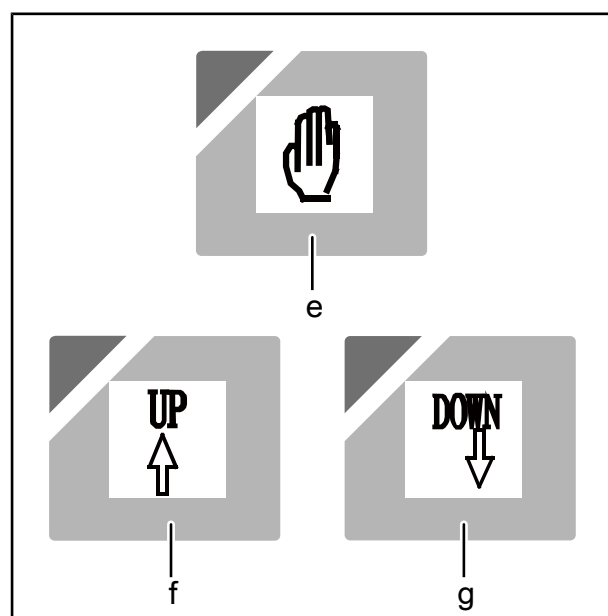


Fig 4-36 Raising and lowering the entire vehicle

- | | |
|------------------|--------------------|
| e. Enable switch | f. Suspension lift |
|------------------|--------------------|

! DANGER

• Never drain or change engine coolant near an open flame or while smoking because engine coolant is inflammable. • Shut down the engine before draining or filling; Failure to follow these rules will get fire or explosion, result in death or serious injury.

4. Remove the filler cap of engine coolant reservoir

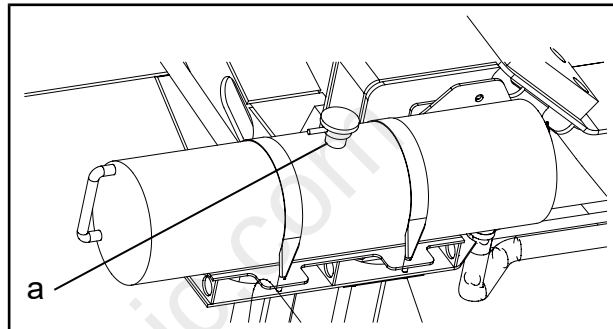


Fig 5-30 Remove the filling cap of surge tank

a. Engine coolant filling cap

! WARNING

Do not remove the filler cap while the engine is hot. Wait for the engine to cool down to outdoor ambient temperature before proceeding. Failure to do so could result in burns or other serious injury.

5. Place an engine coolant collection container with appropriate size below the radiator.

6. Disconnect a clamp and hose on the bottom of radiator, and drain engine coolant.

NOTE :

Do not drain any engine coolant on the ground.

7. Close the opening hose after the fluid is drained completely.

NOTICE

Dispose of the contaminated engine coolant in accordance with local environmental regulations. Failure to do so could result in damage to the environment.

8. Fill engine coolant slowly to prevent air entering, via the filling inlet of reservoir by the engine coolant filling nozzle or the funnel.

⚠ CAUTION

- The gear oil is toxic, always keep it away from children and pets.
 - The gear oil may harm physical health and environment, so it should be avoided to let gear oil into eyes or onto skin. If any gear oil comes into eyes, do flush them with clean water immediately for at least 15 mins and then get medical help; If your clothes are stained with gear oil, wash the clothes immediately; If eat gear oil by mistake, get medical help immediately.
- Failure to do this could result in minor or moderate injury

NOTICE

Do not overfill the gear oil. Failure to do this could result in machine damage and improper machine operation.

5.3.4.5 Level and Quality of the Axle Final Drive Gear Oil – Check**⚠ WARNING**

Risk of burn injury!
Gear oil can be hot, which can cause death or serious injury.
Always wait for the gear oil cool down to ambient outdoor temperature before proceeding.

NOTICE

Risk of environment pollution!
Dispose of waste oil without treatment can lead to environment pollution.
Never drain gear oil on the ground or dispose improperly.

Prerequisites

- Properly extend the outriggers and support the crane.
- Make sure that the crane is level. Secure the crane for maintenance.
- Shutdown the crane, and turn the battery switch to the OFF position.
- The crane is standstill for at least 5 minutes, make sure that the parts and the fluid cools down.

6. Troubleshooting

6.1 Fuel Heater

The fuel heater is suggested to be used when the engine is difficult to start in cold weather with the temperature below minus 20°C.

1. Open the circuit stop valve of the fuel heater.
2. Turn on the fuel heater switch inside the battery cabinet.
3. Theoretically, the fuel heater is able to increase the temperature of engine coolant from -30°C to above 0°C within 1 hour.
4. When the engine coolant temperature reaches 0°C or above, start the engine and close the stop valve and fuel heater switch.
5. Any crane operation with heavy load is suggested to be carried out only when the temperature of engine coolant reaches 60°C or above (speed ≥ 1000rpm) .

6.2 Towing the Crane

Road traffic regulations require that a vehicle which has stopped in the traffic lane, or on the verge or hard shoulder of a public highway due to a breakdown or for any other reason be marked using the prescribed traffic markers.

1. Observe the following if a breakdown occurs:
 - Keep calm.
 - Brake the vehicle. Watch the traffic behind you when braking.
 - Stop at a location that is safe for you, your vehicle and those behind you.
 - Secure the vehicle.
 - Turn on the hazard warning lights.
 - Secure the breakdown area:
 - Set up a warning triangle.
 - Set up a signal lamp or torch.
 - If you are not able to solve the problem, contract local Sany dealer or have the vehicle towed away.

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Sany SCL10000 All Terrain Crane Operator Manual

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