EN

CAT Lift Trucks

Operation & Maintenance Manual

NSV12K
NSV12KI
NSV16K
NSV16KI

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The Netherlands

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Acquiring a new battery

When acquiring a battery for the truck, pay attention to the following sections of the standard EN 1175-1:

- 5.1 Traction batteries (includes the requirements for the protective cover of the battery case, ventilation and interior surface treatment)
- 7.4 Minimum markings (includes the requirements specified on the truck battery plate)

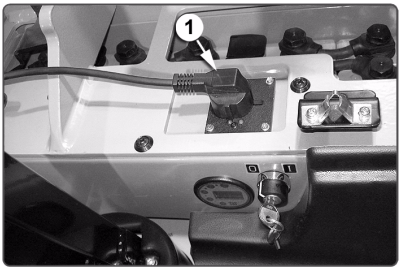
The battery plate should provide at least the following information:

- Manufacturer
- Type
- Serial number
- Rated voltage
- Capacity (Ah/5 h)
- Service weight

Battery charging with an inbuilt charger

You can access the plug (1) for the power supply of the integrated charger from the outside of the truck. To activate the charger, extract the plug for the power supply from the safety socket on the machine and insert it into the correct outlet (230 V ±10% / 50 Hz).

After activating the charger, charging starts automatically.



The charging phase is indicated with two indicator lights:

- Flashing green and yellow (the power is connected to the charger)
- Yellow (charging begins)
- Flashing yellow (charging in progress)
- Green (fully charged)
- Flashing green indicates a fault in the system and charging is stopped automatically.

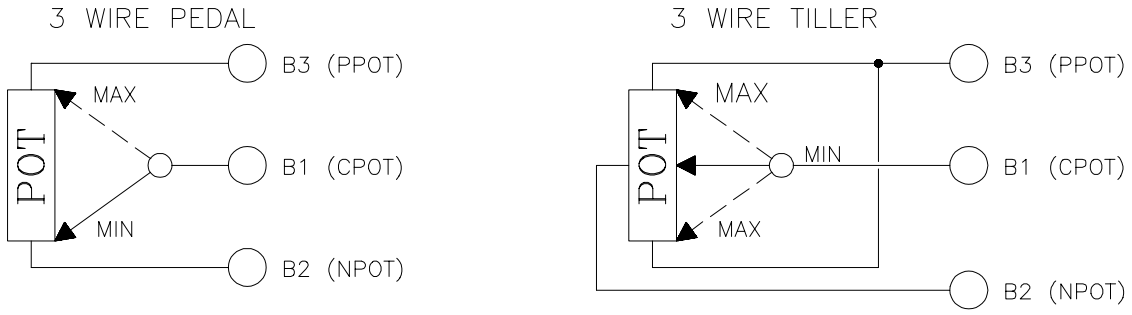
NOTE: *If the charger is not unplugged after the charging is complete, the charger will stop automatically.*

WARNING! *No inflammable materials are allowed within 2 meters of the truck under charge or the charger.*

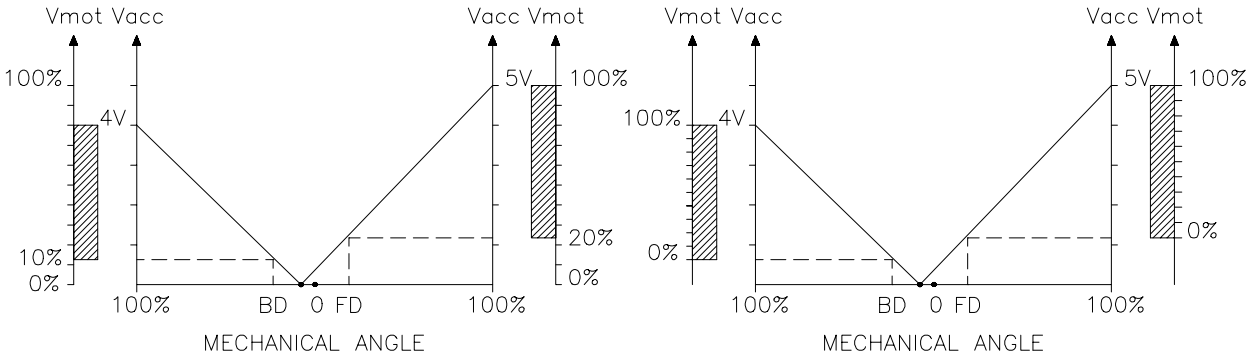
When the charging is finished, you can unplug the charger plug and connect it to the safety socket of the truck. If the plug is not connected to the safety socket, all electrical functions will remain switched off and the truck cannot be used.

2.2.b Potentiometer

The Potentiometer should be wired in the 3 - Wire Configuration.
CPOT (B1) signal ranges from 0 to 10V.
Minimum Potentiometer Resistance : 500W
Maximum Potentiometer Resistance : 10kW
Faults can occur if the potentiometer is out of this range.



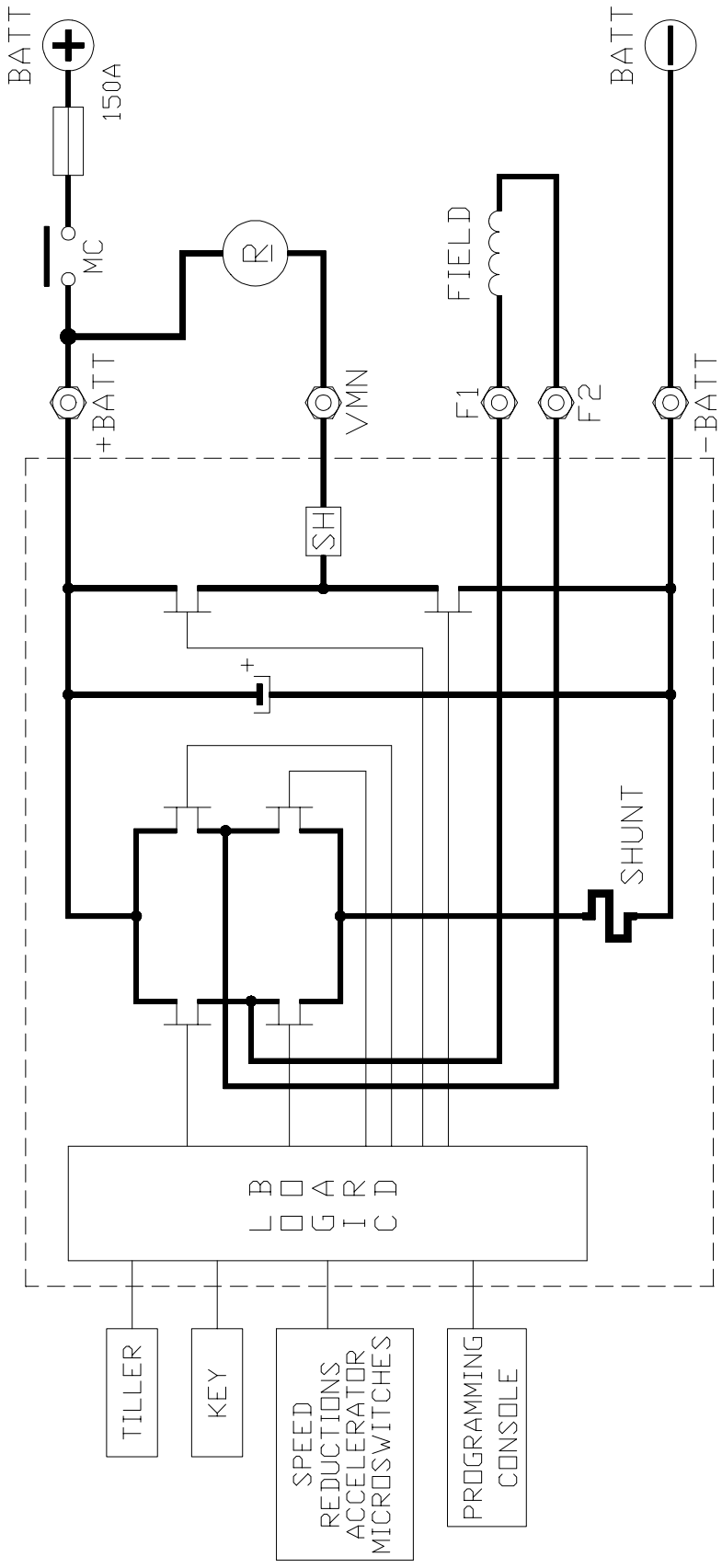
The Procedure for automatic potentiometer signal aquisition is carried out using the Console. This enables adjustment of the minimum and maximum useful signal level (PROGRAM VACC function), in either direction. This function is unique when it is necessary to compensate for asymmetry with the machanical elements associated with the potentiometer, especially relating to the minimum level.



The two graphs show the output voltage from a non-calibrated potentiometer with respect to the mechanical “zero” of the control lever. MI and MA indicate the point where the direction switches close. 0 represents the mechanical zero of the rotation. The Left Hand graph shows the relationship of the motor voltage without signal aquisition being made. The Right Hand Graph shows the same relationship after signal aquisition of the potentiometer.

5 SEM-ZERO: CABLING AND CONFIGURATION

5.1 POWER DIAGRAM



6.1 ANALYSIS OF ALARMS DISPLAYED ON THE CONSOLE

1 LOGIC FAILURE #1

This test is carried out at the start-up.
Possible cause: failure of the logic board

2 WATCH DOG

The test is executed at the key turn-on, at the stand-by and on running. Possible causes:

a) Watch-dog hardware circuit not OK;

b) Software not OK.

3 EEPROM OK

Fault in the area of memory where the adjustment parameters are stored. This Alarm inhibits machine operation. If the fault continues when the Key Switch is re-cycled, replace the logic. If the fault disappears, the previously stored Parameters will have been replaced by the default parameters.

4 INCORRECT START

Alarm generated by an incorrect Starting Sequence. Possible causes:

a) The ENABLE microswitch has welded or failed.

b) Error in the starting sequence from the operator.

c) Error in the wiring.

5 FORW + BACK

This check is made continually. The alarm is generated when forward and reverse direction are requested simultaneously. Possible causes:

a) Error in Wiring.

b) Welding or Failure of a direction switch.

c) Error in the starting sequence from the operator.

6 CAPACITOR CHARGE

This check is made during the initial diagnosis. This Alarm is generated if the Capacitors are not charged within 500ms after the Key Switch is closed. Probable cause is failure inside the power block.

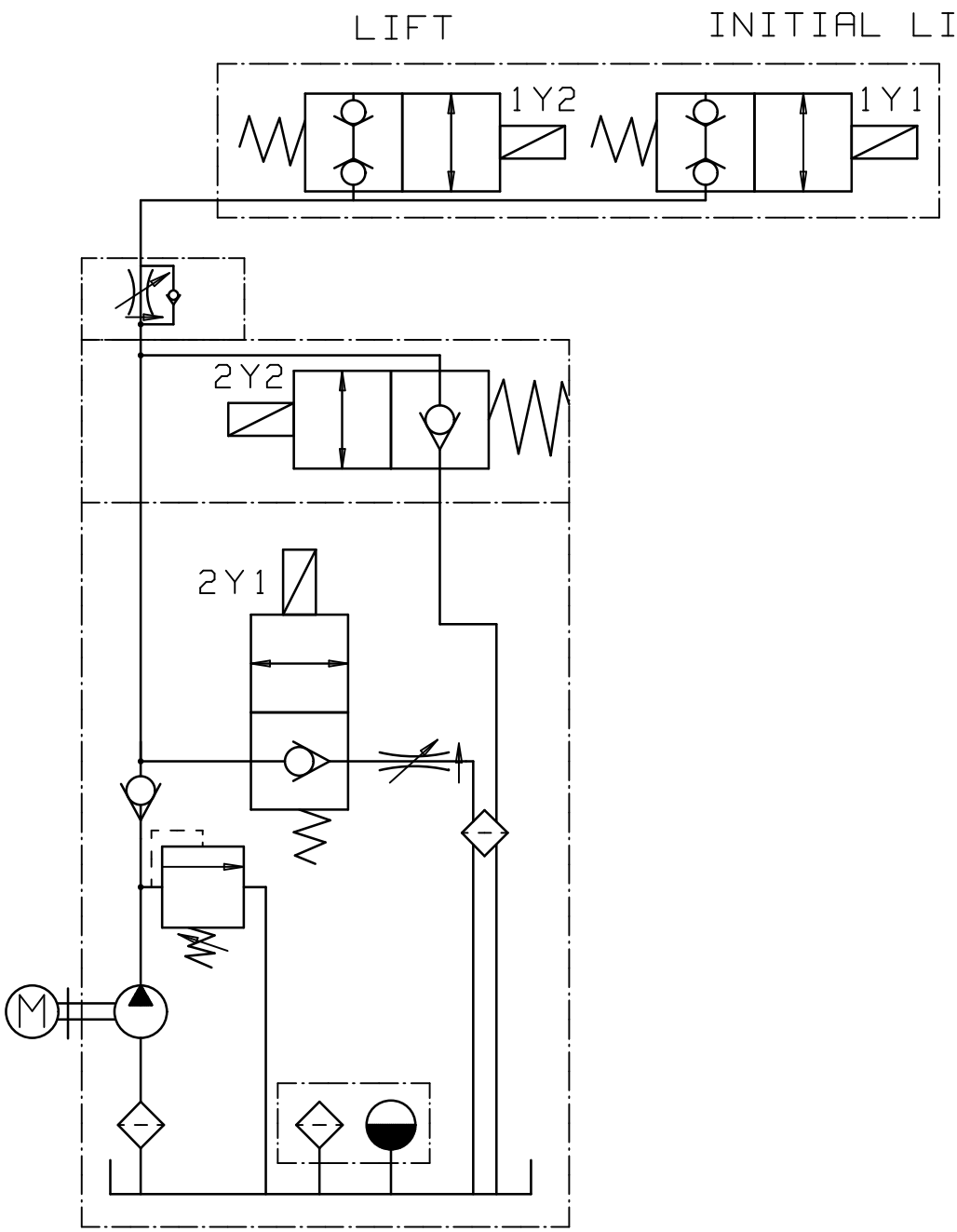
7 VMN NOT OK

This test is performed at rest, with the general Contactor Closed, and also during operation. At rest if VMN is lower than battery voltage this Alarm is generated. During operation this Alarm is generated if VMN doesn't follow the duty-cycle of the chopper. Possible causes:

a) Incorrect Motor connection.

b) Short circuit motor windings to chassis.

c) Defect in the power unit.



2Y1=SLOW SPEED VALVE
2Y2=FAST SPEED VALVE
1Y1=INITIAL LIFT VALVE
1Y2=LIFT VALVE

HYDRAULIC DIAGRAM

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