CAT Lift Trucks

Operation & Maintenance Manual

NSV12N
NSV12NI
NSV16N
NSV16NI
NPV20ND

SWHSU - 00112

13 **EEPROM KO** **(Warning)** **Stored**

It's due to a hardware or software defect of the non-volatile embedded memory supporting the controller parameters. This alarm does not inhibit the truck operations, but the truck will work with the default values.

Try to execute a CLEAR EEPROM operation. Switch the key off and on to check the result. If the alarm occurs permanently, it is necessary to replace the Combiac1 controller. If the alarm disappears, the previously stored parameters will have been replaced by the default.

19 **LOGIC FAILURE #1** **(Alarm)** **Stored**

This fault is displayed when the controller detects an overvoltage or undervoltage condition. Overvoltage threshold is 45V; undervoltage threshold is 9V in the 24V controller.

If fault displayed at startup or in standby; in this case it is due to an undervoltage, so it is important to check following:

a) Key input signal down going pulses (below undervoltage threshold) due external loads, like DC/DC converters starting up, relays or contactors energizing/ denergizing.

b) If no voltage transient is detected on the supply line and the alarm is present every time the key is switched ON, the fault is in the Combiac1 controller.

If fault is displayed during motor driving; in this case due to an undervoltage or an overvoltage condition.

a) If the alarm happens during traction acceleration or driving hydraulic functions, the fault is an undervoltage condition; check battery charge level and power cable connections.

b) If the alarm happens during release braking, the fault is an overvoltage condition; check line contactor tips and battery power cable connections.

28 **PUMP VMN LOW** **(Alarm)** **Stored**

Cause:
The pump motor output is lower than expected, considering the pulswidthmodulation applied.

LIMIT DEVICE	ON									**ON**	**ON/OFF**	Steering angle elecrical limitation
DIRECTION GAUGE	OP #1									OP #1		*factory setting*
AUX FUNCTION 1	0									0		*factory setting*
DIAG MOTOR TEMP	ON									**ON**		factory setting
AUX OUTPUT #3	0									**0**		factory setting
TILLER DEAD ZONE	OFF									**OFF**	**ON/OFF**	When setted to ON and recycled the key --> there are 20 degrees dead zone area.
SPAC CONFIG	OFF									**0**	**0-1**	Which type of traction controller is used on a truck. 0 = AC1-SSL, 1 = Combi AC
SET MODEL:												
SYSTEM CONFIG	1									**2**		factory setting
AUTO REQ TYPE	0									**0**		factory setting
CONNECTED TO	EPS									**EPS**		2 = traction, 6 = steering
MODEL TYPE	x									**x**		factory setting
ADJUSTMENTS:												
ADJUSTMENT #01	0									**0**		factory setting
SET CURRENT	0									**0**		factory setting
ADJUSTMENT #02	x									**90**		factory setting
ADJUSTMENT #03	x									**x**		factory setting
ADJUSTMENT #04	x									**x**		factory setting
SET BATTERY TYPE	24V									**24V**		factory setting
SET SAT. FREQ.	78 Hz									**78Hz**		factory setting
OVERSAT FREQ.	1 Hz									**1Hz**		factory setting
MAXIMUM SLIP	5,00 Hz									**5Hz**		factory setting
AUX VOLTAGE #1	x									**x**		factory setting
AUX VOLTAGE #2	x									**x**		factory setting
NO LOAD CURRENT	13 A									**13A**		factory setting
ZERO SP POT	x									x		teaching of the zero point of wheel
SET STEER 0-POS.	x									**x**		straight ahead adjustment
SET MIN FB POT	x									**x**		teaching of the maximum anti-clockwise angle
SET MAX FB POT	x									**x**		teaching of the maximum clockwise angle
SPECIAL ADJUST:												
SET TEMPERATURE	x									**x**		factory setting
HIGH ADDRESS	0									**0**		factory setting
DEBUG OUTPUT	15									**15**		factory setting
MAX SP SLOPE	9									**9**		factory setting
HARDWARE SETTINGS:												
MAXIMUM CURRENT	50 A									**50A**		factory setting
CAN BUS	PRESENT									**PRESENT**		factory setting
SET HI RESOL AD	1									**1**		factory setting

	TRUCK TYPES						
	NSV12N / NSV12NI	**NPV20ND**	**NSV16N**	**NSV16NI**	**Default**	**Adjustment range**	**NOTE!**
EV1 OPEN DELAY	**1**	**1**	**1**	**1**	**1**	**0,1-5**	Not used
EV1 CLOSE DELAY	**2**	**2**	**2**	**2**	**2**	**0,1-5**	Not used
START LOWER RED.	**10**	**10**	**10**	**10**	**10**	**1-100**	Lower speed reduction starting point on mast stage delay.
DUAL PUMP DEL	**LEVEL = 2**	**LEVEL = 2**	**LEVEL = 2**	**LEVEL = 2**	**LEVEL = 2**	**0-9**	Dual pump delay. Pump controller tries to drive pump motor with maximum current. If current stays on maximum value this time --> only one pump is used.
CONFIG MENU/ SET MODEL:							
MODEL TYPE	5	5	5	5	5	5	*2 = traction, 5 = pump, 6 = steering, 10 = encoder-card*
SET OPTIONS:							
HOUR COUNTER	**RUNNING**	**RUNNING**	**RUNNING**	**RUNNING**	**RUNNING**		factory set
EVP TYPE	**DIGITAL**	**DIGITAL**	**ANALOG**	**ANALOG**	**ANALOG**		Proportional valve type, analog = proportional valvei, digital = on/off valve
EV1 TYPE	**DIGITAL**	**DIGITAL**	**DIGITAL**	**DIGITAL**	**DIGITAL**		Proportional valve type, analog = proportional valvei, digital = on/off valve
SET TEMPERATURE	**NONE**	**NONE**	**NONE**	**NONE**	**NONE**		factory set
SIDE STABILIZER	**ABSENT**	**ABSENT**	**ABSENT**	**ABSENT**	**ABSENT**	**ABSENT / PRESENT**	PRESENT = Side stabilizers in use ABSENT = No sid stabilizers
AUX OUTPUT #6	**LEVEL = 3**	**LEVEL = 3**	**LEVEL = 3**	**LEVEL = 3**	**LEVEL = 3**	**0-7**	Output XA1/14 0 = Not used 1 = Traction forward active 2 = traction backward active 3 = Traction active 4 = Lift active 5 = Lower active 6 = Lift/lower active 7 = Traction and lift/lower active
AUX OUTPUT #5	**LEVEL = 9**	**LEVEL = 9**	**LEVEL = 9**	**LEVEL = 9**	**LEVEL = 9**	**0-9**	Output XA1/32 0 = not used 1 = Traction forward active 2 = traction backward active 3 = Traction active 4 = Lift active 5 = Lower active 6 = Lift/lower active 7 = Traction and lift/lower active
DUAL PUMP	**ABSENT**	**ABSENT**	**ABSENT**	**ABSENT**	**ABSENT**	**ABSENT / PRESENT**	PRESENT = Dual pump in use, ABSENT = Dual pump not used
AUTO INIT LOWER	**NONE / OPTION #1**	**NONE**	**NONE**	**OPTION#1**	**OPTION#1**	**NONE, OPTION#1, OPTION#2**	Automatic initial lower from input XA1/20. NONE = not used, OPTION#1 = automatic initial lower, OPTION#2 = manual initial lower.

	TRUCK TYPES						
	NSV12N, NSV12NI	**NPV20ND**	**NPV20ND Fast Drive**	**NSV16N NSV16NI**	**Default**	**Adjustment Range**	**NOTE.**
MAX LOAD WEIGHT	62	82	82	82	62	**0-255**	Maximum load teached value for the load weight display. Value is calculated by function x/5000*255 where x = maximum lifting capacity
AUXILIARY TIME	0,8	0,8	0,8	0,8	0,8	**0,1-5s**	Brake delay, for how long time truck is held in place with motor until brake is released
TOP ABS HEIGHT	50	50	50	50	50	**0-255**	Encoder based total lift stop. 1 step = 40 pulses. 1 pulse = 3,65mm
HEIGHT REDUCTION	50	50	50	50	50	**0-255**	0 = driving speed reduced to 2,5 km/h. Over the free lift area driving speed reduction curve selection. 1 = rough speed reduction, When setted same as TOP ABS HEIGHT --> no speed reduction
AUX FUNCTION 7	LEVEL = 0	LEVEL = 0	LEVEL = 0	LEVEL = 0	LEVEL = 0	**0-9**	EMB TIME DELAY,Brake delay on ramp.
SET OPTIONS:							
TILLER SWITCH	HANDLE	HANDLE	HANDLE	HANDLE	HANDLE	**HANDLE / SEAT**	factory set
HOUR COUNTER	RUNNING	RUNNING	RUNNING	RUNNING	RUNNING	**0**	factory set
BATTERY CHECK	LEVEL = 2	LEVEL = 2	LEVEL = 2	LEVEL = 2	LEVEL = 2	**0-2**	0 = disabled, 1 = lift cut out, 2 = travel speed reduction to 2,5km/h
STOP ON RAMP	ON	ON	ON	ON	ON	**ON / OFF**	ON = truck stays at ramp OFF = truck does not hold it still at ramp
AUX OUTPUT #1	BRAKE	BRAKE	BRAKE	BRAKE	BRAKE	**0**	factory set
SET MOT.TEMPERAT	ANALOG	ANALOG	ANALOG	ANALOG	ANALOG	**0**	factory set
QUICK INVERSION	BELLY	BELLY	BELLY	BELLY	BELLY	**0**	*not used*
AUX FUNCTION 10	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	**ABSENT / PRESENT**	Belly switch functionality absent = "normal" , present =also on platform
CAN ENCODER	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	**ABSENT / PRESENT**	ON = Mast encoder card present, OFF = Mast encoder card disabled.
EPS	OFF	OFF	OFF	OFF	OFF	**ON / OFF**	ON = EPS present OFF = EPS not in use
BELLY START OPT	ABSENT	ABSENT	ABSENT	ABSENT	ABSENT	**ABSENT / PRESENT**	not used

Repairs and structural modifications

Do not modify the truck without the manufacturer's express permission. Do not add or remove, weld or bend any parts, as the modifications could affect the operation of the truck and might weaken its construction.

NOTE *Only in the event that the truck manufacturer is no longer in business and there is no successor in the interest to the business, the user may arrange for a modification or alteration to a powered industrial truck, provided, however, that the user shall:*

- *arrange for the modification or alteration to be designed, tested and implemented by an engineer(s) expert in industrial trucks and their safety;*
- *maintain a permanent record of the design, test(s) and implementation of the modification or alteration;*
- *approve and make appropriate changes to the capacity plate(s), decals, tags and instruction handbook;*
- *affix a permanent and readily visible label to the truck stating the manner in which the truck has been modified or altered together with the date of the modification or alteration, and the name and address of the organization that accomplished the tasks.*

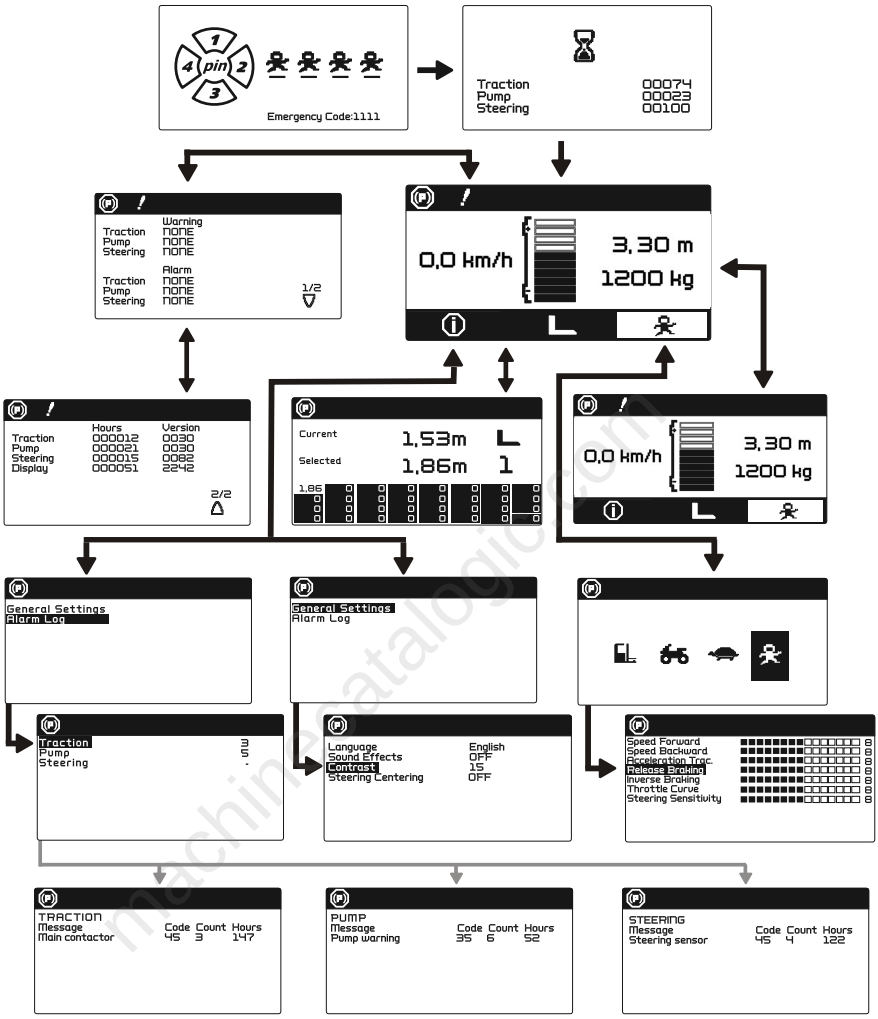
Overhead guard and load support (applies only to trucks with mast)

Trucks driven sitting or standing that are capable of lifting a load higher than 1.8 m must be equipped with an overhead guard. Modifications to the overhead guard that could possibly weaken its structure are not allowed. If it is possible for objects to fall through the openings in the overhead guard, the size of the openings must be reduced. Trucks used for transporting small objects or unstable loads must be equipped with a load support.

Driving on loading bridges

Always check the bearing capacity and the fastening of the bridge before loading or unloading. If you need to drive the truck onto another vehicle, ensure that the vehicle cannot move during this procedure. Do not drive to the edges of a loading bridge because there is always the risk of overturning.

Basic hierarchy of the display



Full Version Available

Caterpillar NSV16NS Stacker Operator Manual (SWHSU-00112)

Caterpillar NSV16NS Stacker operator manual, safety, controls, inspections, and battery care in searchable PDF. Instant PDF download.