



Operation & Maintenance Manual

NPV20N

NPV25NH

NO20NT

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12.4 Function configuration

We will describe two configurations depending on the MDI-PRC setting (see 12.4.1.15):

- 1) STANDARD version (MDI-PRC Absent)
- 2) MDI-PRC version (MDI-PRC Present). In this case the drive control communicates with a MDI-PRC through the CAN BUS.

They have different list of settings (the Standard version has a reduced settings list). In the next we refer to a complete settings that is the sum of the settings list of both the above configurations. When the setting refers to only one configuration, it will be specified in the description.

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SET POT BRK MIN	0,4	0,4	0,4	0,4					0,4	0	not in use
SET POT BRK MAX	4,5	4,5	4,5	4,5					4,5	0	not in use
MOTOR OVERTEMP	120	120	120	120					120	0	Factory setting
SET MOTOR TEMP.	0	0	0	0,0					0	0	Adjustment for the motor temperature sensor
SET BATTERY TYPE	24V	24V	24V	24V					24V	0	Factory setting
ADJUST BATTERY	0	0	0	0,0					0	0	Adjustment for the battery voltage measurement
THROTTLE 0 ZONE	13	13	13	13,0					13	0	Adjust throttle dead band
THROTTLE X POINT	54	54	54	54,0					54	0	Adjust throttle curve X point
THROTTLE Y POINT	25	25	25	25,0					25	0	Adjust throttle curve Y point
ADJUSTMENT #1	5	5	5	5,0					5	0	Adjust BDI upper curve
ADJUSTMENT #2	8	8	8	8,0					5	0	Adjust BDI lower curve
LOAD HM FROM MDI	OFF	OFF	OFF	OFF					OFF	0	Factory setting
CHECK UP DONE	OFF	OFF	OFF	OFF					OFF	0	Set to ON when periodic maintenance is done
CHECK UP TYPE	0	0	0	0					2	0-3	OP1= CHECK UP NEEDED warning on the hand set and MDIPRC after 300 hours OP2= Equal to OPTION#1 but Speed reduction after 340 hours OP3= Equal to OPTION#2 but the truck definitively stops after 380 hours

ATTENTION!

**REMEMBER PROGRAM VACC !!!
(ACCELERATOR CALIBRATION)**

LIMIT DEVICE	ON									ON	ON/OFF	Steering angle electrical 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 set 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

NPV20N, NPV25NH EPS ACO ALARM LIST

Alarm number	Alarm Name
06A01	High current
06A02	Power failure #1
06A03	Power failure #2
06A04	Power failure #3
06A05	Stby hi high
06A06	D line sensor ko
06A07	Q line sensor ko
06A08	Eeprom ko
06A09	Vmn not ok
06A10	High temperature
06A11	Data acquisition (during gain acq)
06A12	Logic failure #1
06A13	Logic failure #2
06A14	Logic failure #3
06A15	Logic failure #4
06A16	KS Closed
06A17	KM Closed
06A18	KS Open
06A19	KM Open
06A21	Micro slave
06A22	SP out of range
06A23	FB out of range
06A24	Micro slave ko
06A27	Gain eeprom ko
06A28	Can bus ko
06A38	Position error
06A39	Serial error #1
06A40	Micro slave #4
06A41	Slave comm error
06A42	No sync (slave error)
06A43	Current gain
06A44	Clock pal not ok (slave)
06A45	Steer sensor ko
06A46	Jerking Fb
06A47	Fb pot locked
06A48	Motor temperat
06A49	Motor locked
06A51	Micro slave #3
06A53	Input error #1

- Select menu: ADJUSTMENTS: go on to the: SET MIN FB POT and press ENTER, press also OUT and ENTER.
- Select menu: SET OPTIONS / LIMIT DEVICE = ON. Set SET OPTIONS / FEED BACK DEVICE = OPTION 2. Press also OUT and ENTER.
- Switch truck off and restart again.

FINETUNING THE STEERING ANGLE LIMITATIONS

- Turn drive unit totally to clockwise (Left) by using the tiller arm.
- Select menu: PARAMETERS and drop 1ST ANGLE COARSE parameter value so much that driving unit not touch to the limiter. Increase the 1ST ANGLE FINE parameter value so that driving unit touch lightly to the limiter.
- Select menu: PARAMETERS and drop 2ND ANGLE COARSE parameter value so much that driving unit not touch to the limiter. Increase the 2ND ANGLE FINE parameter value so that driving unit touch lightly to the limiter.
- Check that both sides are now limited correctly and driving unit stop movement just before the limiters.
- Press OUT and ENTER.

ADJUSTING DRIVING UNIT STRAIGHT POSITION BY DRIVING

- Set SET OPTIONS / TILLER DEAD ZONE = ON → Switch truck off and restart again. In the tiller arms center position must be about 20 degrees “dead zone”, where tiller arm turning doesn’t turn driving unit
- Select menu: ADJUSTMENTS / SET STEER 0-POS. Raising the value turns driving wheel to clockwise (left) and the other way round.
- Set truck and driving unit straight before to start test driving. Drive backwards and forwards and adjust SET STEER 0-POS parameter to get truck moving straight.
- When truck is moving straight. Switch truck off and restart again.
- TILLER DEAD ZONE parameter is now OFF-status and “dead zone” is not active. When tiller arm is in the center position, CHECK THAT TRUCK IS STILL MOVING STRAIGHT. Adjust again if needed.

TESTING AND CLEARING THE ALARMS

- Be sure that electric steering is still working and no alarms showed up.(ALARM STEER HAZARD it’s not a error code)
- Clear all errors from controllers alarm history what can came while teaching the steering.

*Select menu: ALARMS press ENTER press OUT press ENTER 2 times
Return to main menu and switch truck power off and disconnect the Zapi handset.*

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.

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Full Version Available

Caterpillar NO20NT Order Picker Operator Manual (SWHPU-00112)

Caterpillar NO20NT Order Picker operator manual, covers safe operation, controls, charging, and daily checks in PDF. Instant PDF download.

VIEW THE FULL MANUAL