

NTD13N3
NTD15N3



FLEXIBLY PRODUCTIVE

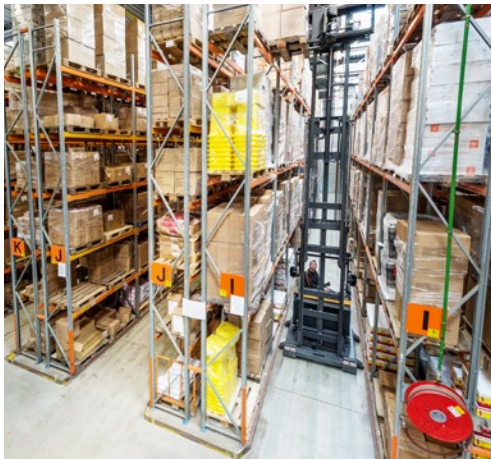
SPECIFICATIONS

MAN-DOWN VNA TRUCKS 48V, 1.25 - 1.5 TONNES



CUT COSTS AND RACK UP EFFICIENCY WITH TWO TRUCKS IN ONE

THIS SOLUTION COMBINES THE STORAGE-MAXIMISING EFFICIENCY OF A VNA (VERY NARROW AISLE) TURRET TRUCK WITH THE FREEDOM AND VERSATILITY OF A REACH TRUCK. IT NOT ONLY OPTIMISES PRODUCTIVITY IN THE AISLES BUT RAPIDLY TRANSPORTS GOODS TO AND FROM THE RACKING.



There is now no need for feeder trucks or P&D (pick-up and deposit) stations at aisle ends, as our man-down VNA models take care of transport as well as stacking and retrieval. This saves on fleet size, driver numbers and time, while increasing storage space.

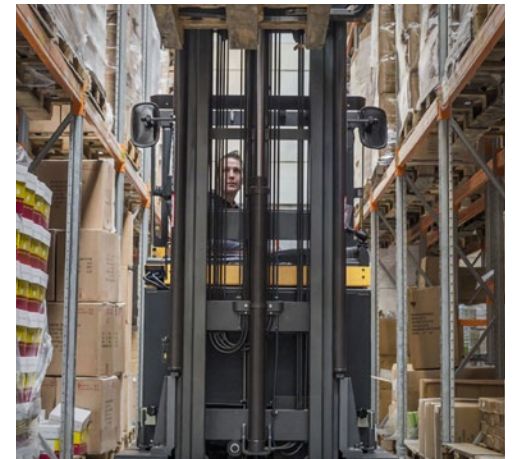


Wire or rail guidance* allows the operator to drive quickly, and to lift and lower safely while travelling, in aisles little wider than the truck. Pallets can be handled on either side of the aisle thanks to a swivelling reach fork assembly.

* Image shows angled rollers for 'low profile' rail guidance, available through CSM.



Precise control is assured by *Palm Steering* and a multifunctional joystick. The left and right armrests are adjustable, along with floor height, for a perfect fit. The weight-adjusted seat gives a relaxed driving position and tilts to reduce strain when viewing loads at height.



Output is enhanced by market-leading drive and hydraulic performance, together with superior ergonomics and an excellent all-round view. The wide range of optional aids includes a position light laser system and a fork camera with RLED display.

LOWER COST OF OWNERSHIP

- Robust construction minimises damage and wear, even in demanding multi-shift operations.
- Heavy duty drive wheel is highly durable and easy to maintain, with a larger diameter, extra width and unique tread design which increase grip and stability as well as lifetime.
- User-friendly display encourages correct use of truck.
- PIN code identification and programmability prevent unauthorised use and allow matching of truck performance settings to driver experience and application.
- Auto log-off option avoids wasting power when truck is idle.
- Fast service access to systems and components reduces downtime.

UNMATCHED PRODUCTIVITY

- Compact dimensions and reach truck levels of mobility enable fast manoeuvring outside the aisles, for rapid transport of goods to and from the VNA racking with no need for feeder trucks or P&D stations.
- Swivel fork assembly rotates through 180 degrees, allowing pallet stacking and retrieval on either side of the aisle without turning the truck around.
- Wire guidance option permits fast performance in very narrow aisles, including safe lifting while driving, without the obstruction, debris accumulation and relatively high installation expense of guide rails.
- Rail guidance option permits fast performance in even narrower aisles, including safe lifting while driving, without the power supply dependency and electronic sensor expense of wire guidance.
- 360-degree steering option enables fluid turning without stopping to change direction.
- Market-leading travel speed (14 km/h) and optimised hydraulic attachment speed come as standard.

SAFETY AND ERGONOMICS

- *Palm Steering* on adjustable floating armrest offers relaxed driving position and operation with minimal movement, effort or strain – ideal if driver is seated for long periods.
- Multifunctional joystick with adjustable armrest fits hand perfectly, positions all hydraulic controls optimally, minimises effort and enables precise individual and simultaneous actions.
- Optional fingertip hydraulic controls with adjustable armrest ensure ergonomically perfect hand positioning, anatomical support and free movement.
- Position light option aligns red laser beam with rack markings for quick and accurate fork positioning in relation to pallets.
- End-of-aisle braking system option prevents full-speed exit into transfer aisles, where other trucks and pedestrians could be passing.
- Automatic drive speed control slows truck down if forks are raised above 500 mm outside the guided aisle, to increase stability for manoeuvring while transporting loads.
- Electrically adjustable floor height combines with adjustment of armrests and seat to give the perfect fit for each driver.
- Tilting seat can be angled backwards by 18 degrees, to reduce strain when viewing and handling loads at height, and is adapted to the driver's weight.
- Tapered seat backrest enables easier turning of body – with less strain – toward driving direction.
- Spacious driver's compartment with high roof safely and comfortably accommodates users of all sizes.
- Excellent all-round view is enabled by design of mast, overhead bars, pillars and chassis.
- Mast-mounted mirrors give full visibility of fork tips when handling pallets at lowest levels.
- Transparent overhead guard roof option gives unobstructed view of forks and load when handling at height and protects driver from both small and large falling objects.
- Intuitive display keeps drivers fully informed and is optimally positioned and angled for clear viewing.
- Direction control is switched using accelerator pedal, leaving right hand free to concentrate on hydraulic functions.
- Automotive pedal layout is intuitive to car drivers, while 'dead man' safety switch is effortlessly activated by the weight of the left foot.
- Smooth entry and exit are aided by ergonomic grab handles and low intermediate step with non-slip surface.
- Optional blue or red point safety lights warn pedestrians and other drivers of truck's approach.

STANDARD EQUIPMENT AND OPTIONS

	NTD13N3	NTD15N3
GENERAL		
Automatic electric parking brake	●	●
Steering wheel angle indicator	●	●
Battery indicator with cut-out at 20% remaining battery level	●	●
Multifunctional colour display	●	●
Electrically adjustable floor height	●	●
Suspension seat with weight-controlled tilting high backrest	●	●
Max drive speed 14 km/h	●	●
Chill store design, down to +1°C	●	●
Paper storage and cup holder	●	●
Battery on steel rollers	●	●
Other RAL colour	○	○
MAST, FORKS AND CARRIAGE		
Tri-lateral fork head attachment	●	●
Side mirrors on mast	●	●
Lift stop with/without restart	○	○
Level selector	○	○
Level Assistance System (LAS)	○	○
Lift height indicator	○	○
Weight and height indication	○	○
Fork camera with RLED display	○	○
DRIVE AND LIFT CONTROLS		
<i>Palm Steering</i> with floating armrest, adjustable height and length	●	●
180-degree electric power steering	●	●
360-degree electric power steering	○	○
Midi steering wheel	○	○
Multifunctional joystick	●	●
Fingertip controls	○	○
Hands-free direction control (HFDC) in accelerator pedal	●	●
Hand-operated direction control	○	○
Active Spin Reduction (ASR)	○	○
Creep speed when forks above 500 mm while outside of guided aisle	●	●
Wire guidance	○	○
Rail guidance	○	○
End-of-Aisle (EoA) drive speed reduction or precise stop	○	○



Palm Steering



Optional midi steering wheel



Multifunctional joystick

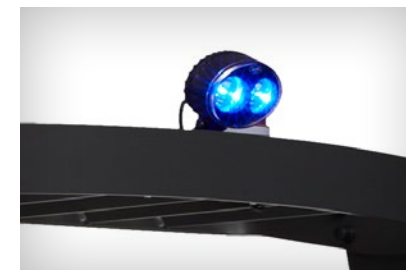


Optional wire guidance (sensor)

● Standard ○ Option

STANDARD EQUIPMENT AND OPTIONS

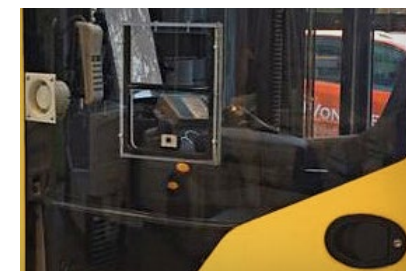
	NTD13N3	NTD15N3
ELECTRIC		
Blue/red point safety light, towards forward driving direction	○	○
Position light laser system	○	○
Automatic log-off	○	○
Battery level audible warning	○	○
Working lights LED	○	○
Working lights LED for heated cabin	○	○
Warning light on overhead guard	○	○
Warning light for heated cabin	○	○
Key switch entry	○	○
12V connector	○	○
Converter 48 - 12V	○	○
Radio with MP3	○	○
Service alarm	○	○
OHG AND CABIN		
Heated cabin	○	○
Window opening in heated cabin door	○	○
Two-way intercom for heated cabin	○	○
Transparent overhead guard roof	○	○
Metal mesh on overhead guard	○	○
PVC seat	○	○
Heated seat – fabric	○	○
Heated seat – PVC	○	○
Headrest for seat	○	○
Rear view mirror	○	○
Equipment bar (accessory rack)	○	○
Writing desk	○	○
Equipment holder, RAM system size C	○	○
Equipment holder, RAM system size C, 2 pcs	○	○
Equipment holder, RAM system size D	○	○
WHEEL OPTIONS		
Vulkollan® traction wheel 95 Shore	●	●
Tractothan® traction wheel 93 Shore	○	○
Load wheels Ø 200mm	●	●
ENVIRONMENT		
Chill store design, down to +1°C	○	○
Cold store design, 0°C to -35°C	○	○



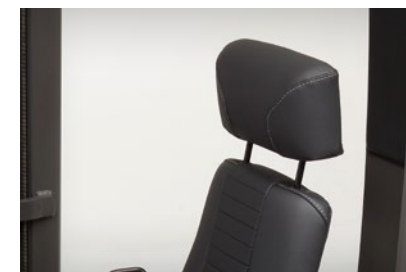
Optional blue point safety light



Optional transparent overhead guard roof



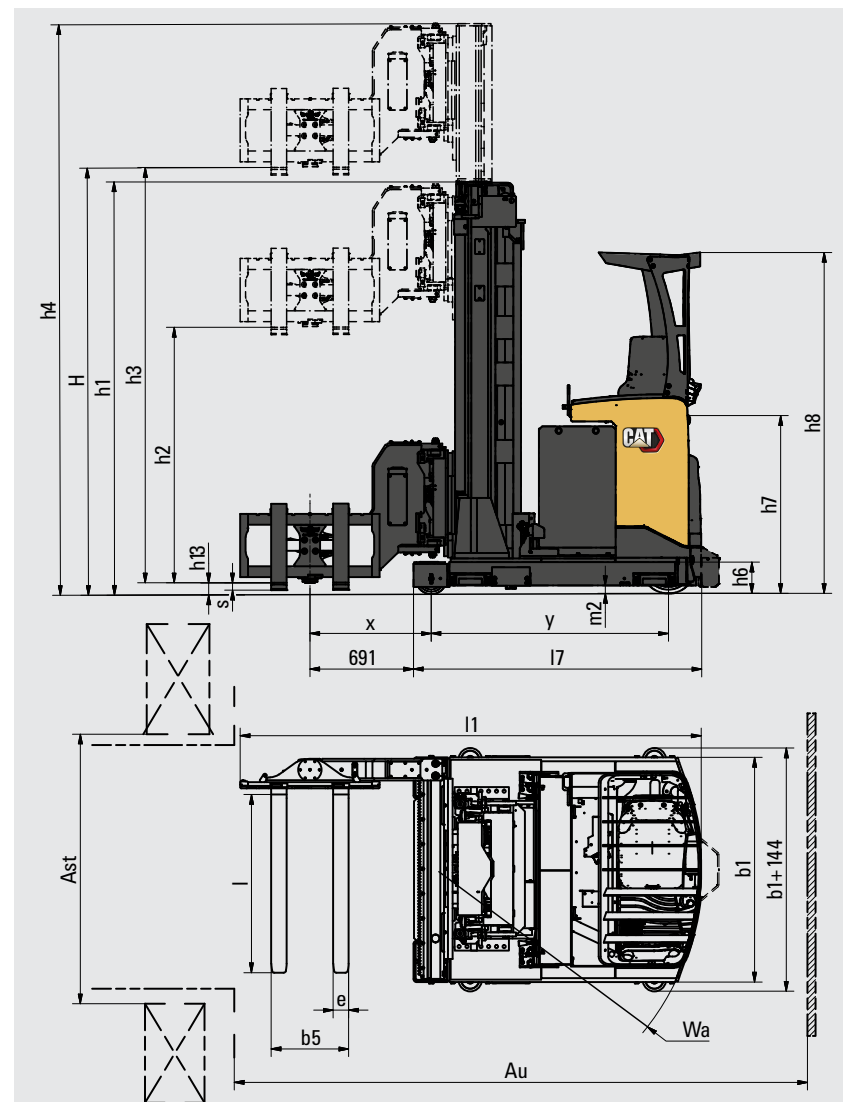
Optional two-way intercom and opening window for heated cabin



Optional headrest for seat

● Standard ○ Option

Characteristics			Cat Lift Trucks	
1.1	Manufacturer		NTD13N3	NTD15N3
1.2	Manufacturer's model designation		Battery	Battery
1.3	Power source		Sit-on	Sit-on
1.4	Operator type		1250	1500
1.5	Load capacity	Q (kg)	400 - 600	400 - 600
1.6	Load centre distance	c (mm)	1534	1534
1.9	Wheelbase	y (mm)		
Weight				
2.1b	Truck weight without load, with maximum battery weight	kg	6674	6674
2.3	Axle loadings without load & with maximum battery weight, drive / load side	kg	2804 / 3870	2804 / 3870
Wheels, Drive Train				
3.1	Tyres: PT = Power Thane, Vul = Vulkollan, P = Polyurethane, N = Nylon, R = Rubber drive / load side		Vul	Vul
3.2	Tyre dimensions, drive side	(mm)	355 x 155	355 x 155
3.3	Tyre dimensions, load side	(mm)	200 x 110	200 x 110
3.5	Number of wheels, load / drive side (x = driven)		4 / 1x	4 / 1x
3.7	Track width (centre of tyres), load side	b11 (mm)	1312	1312
Dimensions				
4.2a	Height with mast lowered	h1 (mm)	See table	See table
4.3	Free lift	h2 (mm)	See table	See table
4.4	Lift height	h3G + h13(mm)	See table	See table
4.5	Height with mast extended	h4 (mm)	See table	See table
4.7	Height to top of overhead guard	h6 (mm)	2205	2205
4.8	Seat or stand height	h7 (mm)	1077	1077
4.10	Height of support legs	h8 (mm)	230	230
4.15	Fork height, fully lowered	h13 (mm)	65	65
4.19	Overall length	l1 (mm)	3010 ¹⁾	3010 ¹⁾
4.21	Overall width	b1 (mm)	1450 ²⁾	1450 ²⁾
4.22	Fork dimensions (thickness, width, length)	s / e / l (mm)	40 / 100 / 800, 1000, 1150	40 / 100 / 800, 1000, 1150
4.24	Fork carriage width	b3 (mm)	900	900
4.25	Outside width over forks (minimum-maximum)	b5 (mm)	520 / 710	520 / 710
4.27	Width over guide rollers (minimum-maximum)	b6 (mm)	1594	1594
4.32	Ground clearance at centre of wheelbase, (forks lowered)	m2 (mm)	55 ¹⁾	55 ¹⁾
4.33a	Working aisle width (Ast) with 1000 x 1200 mm pallets, load crosswise	Ast (mm)	1640 ¹⁾	1640 ¹⁾
4.34a	Working aisle width (Ast) with 800 x 1200 mm pallets, load lengthwise	Ast (mm)	1640 ¹⁾	1640 ¹⁾
4.35	Turning radius	Wa (mm)	1753 ¹⁾	1753 ¹⁾
4.37	Truck length including support legs	l7 (mm)	1866 ¹⁾	1866 ¹⁾
4.41	Transfer aisle width (pallet 1000 x 1200 mm lengthwise & 200 mm clearance)	Au (mm)	3700 ¹⁾	3700 ¹⁾
Performance				
5.1	Travel speed, with / without load	km / h	12 ³⁾	12 ³⁾
5.2	Lifting speed, with / without load	m / s	0.38 / 0.47	0.34 / 0.47
5.3	Lowering speed, with / without load	m / s	0.57 / 0.54	0.57 / 0.54
5.7	Gradeability, with / without load	%	4.9 / 5.8	4.7 / 5.8
5.8	Maximum gradeability with / without load	%	10.4 / 12.3	10.4 / 12.3
5.9	Acceleration time (10 metres) with / without load	s	6.5 / 5.5	6.0 / 5.5
5.10	Service brake		Electric	Electric
Electric motors				
6.1	Drive motor capacity (60 min. short duty)	kW	7.2	7.2
6.2	Lift motor output at 15% duty factor	kW	15	15
6.3	Battery to DIN		43531C	43531C
6.4	Battery voltage/capacity at 5-hour discharge	V / Ah	48 / 620 - 930	48 / 620 - 930
6.5	Battery weight	kg	1240 - 1567	1240 - 1567
Miscellaneous				
8.1	Type of drive control		Electronic	Electronic
10.1	Maximum operating pressure for attachments	bar	150	150
10.2	Oil flow for attachments	l / min	15	15
10.7	Level of noise at the ear level of the driver according to EN 12 053:2001 and EN ISO 4871 in work LpAZ	dB (A)	62.1	62.1



- Value dependent on guidance system used.
See table on next page for Wire Guidance and Rail Guidance values.
- Wire Guided: widest point of truck is 1470 mm
Rail Guided: widest point of truck is the width over the guide rollers (standard is 1594 mm)
- Unguided mode.
For Wire Guided and Rail Guided values see table on next page.

Wire Guidance

Dimensions			NTD13N3	NTD15N3
4.19	Overall length	l1 (mm)	3116	3116
4.33	Working aisle width (Ast) with 1000 x 1200 mm pallets, load crosswise	Ast (mm)	1700	1700
4.34	Working aisle width (Ast) with 800 x 1200 mm pallets, load lengthwise	Ast (mm)	1700	1700
4.35	Turning radius	Wa (mm)	1858	1858
4.37	Truck length including support legs	l7 (mm)	1972	1972
4.41	Transfer aisle width (pallet 1000 x 1200 mm lengthwise & 200 mm clearance)	Au (mm)	4200	4200
Performance				
5.1	Travel speed, with / without load	km / h	9	9

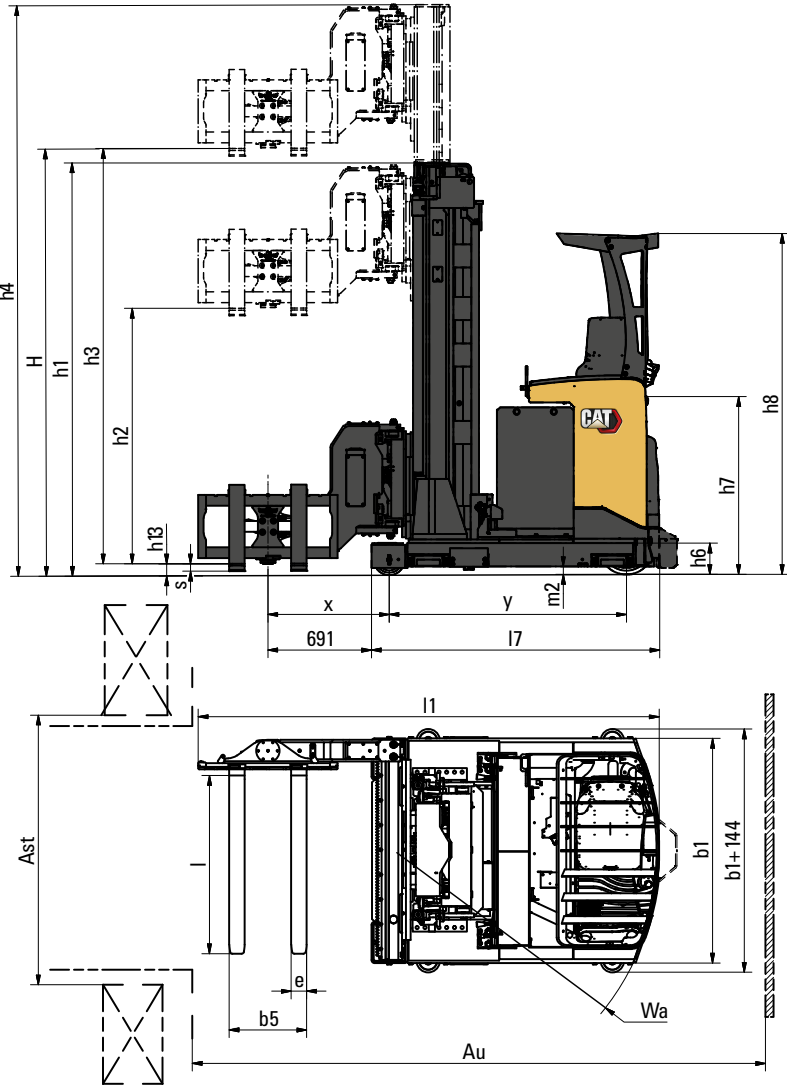
Rail Guidance

Dimensions			NTD13N3	NTD15N3
4.19	Overall length	l1 (mm)	3010	3010
4.31	Ground clearance (lowest point)	m1 (mm)	28	28
4.32	Ground clearance at centre of wheelbase (forks lowered)	m2 (mm)	55	55
4.33	Working aisle width (Ast) with 1000 x 1200 mm pallets, load crosswise	Ast (mm)	1640	1640
4.34	Working aisle width (Ast) with 800 x 1200 mm pallets, load lengthwise	Ast (mm)	1640	1640
4.35	Turning radius	Wa (mm)	1753	1753
4.37	Truck length including support legs	l7 (mm)	1866	1866
4.41	Transfer aisle width (pallet 1000 x 1200 mm lengthwise & 200 mm clearance)	Au (mm)	3700	3700
Performance				
5.1	Travel speed, with / without load	km / h	14	14

NTD13N3 - NTD15N3				
Mast Type	h3 + h13	h1	h2 + h13	h4
	mm	mm	mm	mm
T	4950	2670	1780	5840
	5400	2820	1930	6290
	5900	2987	2097	6790
	6600	3220	2330	7490
	7100	3387	2497	7990
	7600	3553	2663	8490
	7950	3670	2780	8840
	8550	3870	2980	9440
	9150	4070	3180	10040
	9750	4270	3380	10640
	10350	4470	3580	11240

Mast Performance and Capacity

T	Triplex mast
h1	Lowered mast height
h2 + h13	Free lift
h3 + h13	Lift height
h4	Raised mast height



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