OUTSTANDING VERSATILITY

NSV12P
NSV12P(I)
NSV16P
NSV16P(I)
NSV16P(S)

SPECIFICATIONS

PLATFORM STACKER TRUCKS 24V, 1.2 - 1.6 TONNES

CAT®

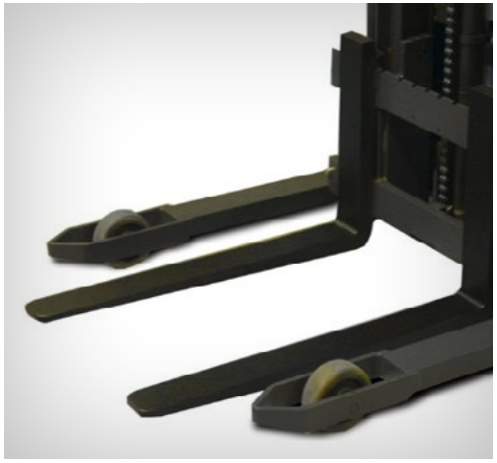
ADAPTABLE POWER FOR DIVERSE ROLES

AS WELL AS STACKING UP TO 5.4 METRES, THESE VERSATILE PLATFORM STACKERS CAN BE USED IN PEDESTRIAN OR RIDE-ON MODE FOR INTERNAL TRANSPORT OVER ALL DISTANCES. THEY ARE ADAPTABLE TO A DIVERSITY OF APPLICATIONS IN NARROW SPACES, INCLUDING OCCASIONAL ORDER PICKING.

The NSV12P offers a 1.2 tonne capacity, for lighter duties, but is equipped to the same high standard as the other models. The NSV12P(I) is the 1.2 tonne truck fitted with the optional Initial lift feature.

The NSV16P handles loads up to 1.6 tonnes. In addition to the options applicable to all models, this stacker can be fitted with wide straddle legs if required (optional).

When specified with the optional Initial lift feature, the NSV16P(I) can raise its load legs to give extra ground clearance for travel on uneven floors and ramps. It can also handle two pallets at once, with one on the load legs and one on the forks.



The NSV16P(S), specified with the optional straddle feature, is ideal for handling extra-wide loads and bottom-boarded pallets. With load legs placed around the pallet, its forks are free to lift from ground level.

LOWER COST OF OWNERSHIP

- Weatherproofed sensors (IP65 or IP67), long service intervals and fast access features – including removable motor cover – reduce maintenance needs and improve uptime.
- PIN code login prevents unauthorised truck use.
- Onboard computer simplifies fault diagnostics, truck and battery condition monitoring, and setting of driver-specific parameters.
- BDI (battery discharge indicator) helps prevent damaging deep discharge and supports optimal timing of battery changes.

UNMATCHED PRODUCTIVITY

- Latest AC drive motor technology delivers higher torque, faster travel (8.5 km/h) and easier control, for top-class performance.
- Tapered fork profile enables faster pallet entry in racking or block stacking.
- Compact dimensions and easy, precise controllability allow rapid manoeuvring, even in the tightest spaces.
- Platform folds flat against chassis when not needed, to save space.
- Li-ion battery option makes continuous operation possible, without battery changes, using fast opportunity charging during short breaks.
- When fitted with the optional Straddle feature, NSV16P(S) can handle closed pallets and wider loads (and wide straddle option is available on NSV16P).
- With the initial lift option, NSV12P(I) and NSV16P(I) allow operation on uneven floors, on ramps and as double pallet handlers.

SAFETY AND ERGONOMICS

- Ergonomic tiller head, shaped to suit all hand sizes, features large, easily reached lift/lower, speed and other controls, for highly controllable operation even when wearing gloves.
- Keypad and display on tiller arm speed up truck activation, setting selection and availability of information such as battery status.
- Cast-iron platform safely resists deformation, provides excellent cushioned comfort and has a low step height for easy on-off access.
- Platform angle encourages drivers to bend their knees, creating a relaxed standing position which makes use of the body's natural suspension.
- The optional cushioned, comfortable side guards (optional) are quick and simple to fold out or in – one-handed and without leaving the platform – for protection and access.
- Fixed platform options offer extra safety and comfort with a choice of barrier designs and entry/exit points.
- Electronic power steering option avoids physical connection between the tiller arm and drive wheel, to prevent transmission of bumps, twists and turns to the driver's hand, wrist and arm.
- Progressive steering adjusts sensitivity according to speed and tiller angle, while resistance and feedback from the drive wheel help further in optimising the driving experience (if power steering option selected).
- Overhead guard option ensures safe working at heights above 1.8 m, without having to leave the platform or fold down the side bars.

STANDARD EQUIPMENT AND OPTIONS

	NSV12P	NSV12P(I)	NSV16P	NSV16P(I)	NSV16P(S)
GENERAL					
Micro-computer incl. hour meter and battery indicator with cutout (ATC T4)	●	●	●	●	●
PIN code login 100 codes	●	●	●	●	●
Foldable platform	●	●	●	●	●
Foldable sidebars	○	○	○	○	○
Short tiller arm with display and keypad	●	●	●	●	●
Chill store design, down to 1°C, with rust-protected axles	●	●	●	●	●
Speed regulated lift motor	●	●	●	●	●
Proportional valve for lowering, controlled by rocker switch on tiller head	●	●	●	●	●
Polyurethane wheels	●	●	●	●	●
Single load wheel polyurtehane	●	●	–	–	●
Tandem load wheels polyurethane	○	○	●	●	○
Battery rollers	●	●	●	●	●
Li-ion batteries	○	○	○	○	○
ENVIRONMENT					
Cold store design, 0C° to -35C°	○	○	○	○	○
DRIVE AND LIFT CONTROLS					
Heavy duty tiller head - with key switch entry	○	○	○	○	○
Tiller arm - adjustable in length	○	○	○	○	○
Tiller up drive	○	○	○	○	○
WHEEL OPTIONS					
Polyurethane traction and load wheels	●	●	●	●	●
Power friction traction wheel	○	○	○	○	○
Non-marking drive wheeel	○	○	○	○	○
Anti-static drive wheel	○	○	○	○	○
OTHER OPTIONS					
Driver-protected platform rear entry	○	○	○	○	○
Driver-protected platform side entry	○	○	○	○	○
Power steering	○	○	○	○	○
Overhead guard	○	○	○	○	○
Load backrest low or high	○	○	○	○	○
Key switch entry	○	○	○	○	○
12V DC power socket	○	○	○	○	○
Equipment bar	○	○	○	○	○
Writing desk incl. RAM C holder	○	○	○	○	○
Equipment bar holder RAM system size C	○	○	○	○	○
Equipment bar holder RAM system size C, 2 pcs	○	○	○	○	○
Equipment bar holder RAM size D	○	○	○	○	○
Special RAL colour	○	○	○	○	○

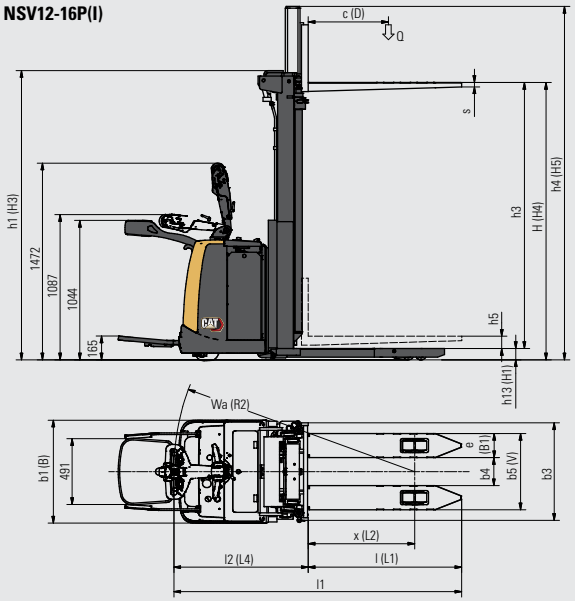
The optional Initial lift (I) or Straddle (S) features are shown in brackets. These are not separate models.

● Standard ○ Option

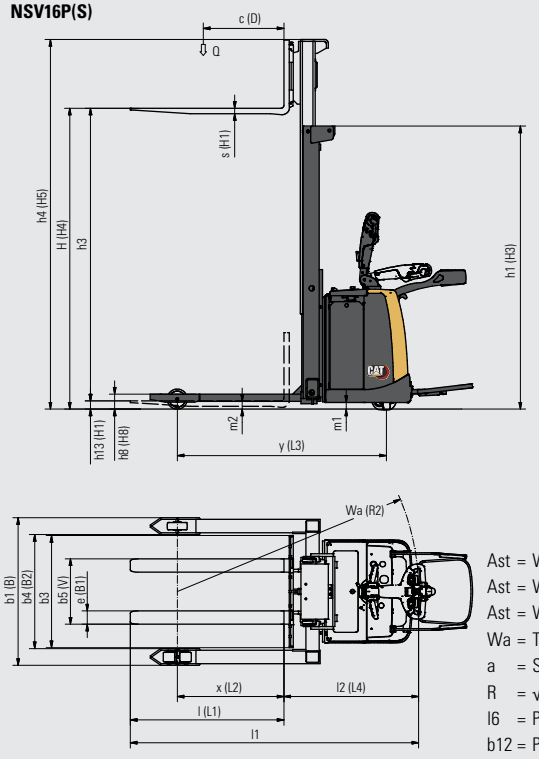
	Characteristics			Cat Lift Trucks	Cat Lift Trucks	Cat Lift Trucks	Cat Lift Trucks	Cat Lift Trucks
				NSV12P	**NSV12P(I)**	**NSV16P**	**NSV16P(I)**	**NSV16P(S)**
1.1	Manufacturer			Battery	Battery	Battery	Battery	Battery
1.2	Manufacturer's model designation			Pedestrian/stand-on	Pedestrian/stand-on	Pedestrian/stand-on	Pedestrian/stand-on	Pedestrian/stand-on
1.3	Power source							
1.4	Operator type							
1.5	Load capacity	Q	(kg)	1250	1250	1600	1600	1600
1.6	Load centre distance	c	(mm)	600	600	600	600	600
1.8	Load wheel axle to fork face (forks lowered)	x	(mm)	750	750	800	800	800
1.9	Wheelbase	y	(mm)	1412	1646	1529	1501	1565
2.0	**Weight**							
2.1	Truck weight without load, with maximum battery weight		kg	1317 h13+h3=4200	1317 h13+h3=4200	1230 h13+h3=3600	1230 h13+h3=3600	1230 h13+h3=3600
2.2	Axle loadings with nominal load & maximum battery weight, drive / load side		kg	1130/1457	1130/1457	738/1085	738/1085	930/2030
2.3	Axle loadings without load & with maximum battery weight, drive / load side		kg	924/403	924/403	930/350	930/350	940/420
3.0	**Wheels, Drive Train**							
3.1	Tyres: PT = Power Thane, Vul = Vulkollan, P = Polyurethane, N = Nylon, R = Rubber drive / load side			PT	PT	Vul / Vul	Vul / Vul	Vul / Vul
3.2	Tyre dimensions, drive side		(mm)	230x70	230x70	230x90	230x90	230x90
3.3	Tyre dimensions, load side		(mm)	85x99	85x99	85x70	85x70	85x70
3.4	Castor wheel dimensions (diameter x width)		(mm)	140x60	140x60	140x60	140x60	140x60
3.5	Number of wheels, load / drive side (x = driven)			1x+1/2	1x+1/2	1x+1/4	1x+1/4	2+1x/4
3.6	Track width (centre of tyres), drive side	b10	(mm)	501	501	501	501	550
3.7	Track width (centre of tyres), load side	b11	(mm)	380	380	390	980/1180	980/1180
4.0	**Dimensions**							
4.2b	Height	h1	(mm)	see tables	see tables	see tables	see tables	see tables
4.3	Free lift	h2	(mm)	see tables	see tables	see tables	see tables	see tables
4.4	Lift height	h3	(mm)	see tables	see tables	see tables	see tables	see tables
4.5	Height with mast extended	h4	(mm)	see tables	see tables	see tables	see tables	see tables
4.6	Initial lift	h5	(mm)	-	110	-	110	-
4.7	Height to top of overhead guard	h6	(mm)	2288	2288			
4.8	Seat or stand height	h7	(mm)	165	165	165	165	145
4.9	Height of tiller arm / steering console (min/max)	h14	(mm)	1090/1470	1090/1470	1090/1470	1090/1470	1141/1341
4.10	Height of support legs	h8	(mm)	82	82	80	80	-
4.15	Fork height, fully lowered	h13	(mm)	90	90	85	85	75
4.19	Overall length	l1	(mm)	2107	2216 / 2622	2140/2524 (l=1150)	2185/2569 (l=1150)	2175 / 2559 (l=1150)
4.20	Length to fork face	l2	(mm)	907	1016 / 1422	990/1374	1035/1419	887 / 1343
4.21	Overall width	b1/b2	(mm)	770	770	770	770	1105/1305
4.22	Fork dimensions (thickness, width, length)	s / e / l	(mm)	65/180/1200,1000	65/180/1200,1000	65/180/1150,1000	65/180/1200,1000	40/100/1150,1000,800
4.24	Fork carriage width	b3	(mm)	590	590	730	730	840
4.25	Outside width over forks (minimum / maximum)	b5	(mm)	570	570	570	570	216/773
4.26	Inner width of support legs	b4	(mm)	210	210	265	235	855/1055
4.32	Ground clearance at centre of wheelbase, (forks lowered)	m2	(mm)	28	28	25	25	38
4.33c	Working aisle width (Ast) with 1000 x 1200 mm pallets, load crosswise, platform up/down	Ast	(mm)	2526 / 2909	2515 / 2935	2535/2920 (l=1000)	2604/2979 (l=1000)	2547 / 2931(l=1000)
4.33d	Working aisle width (Ast3) with 1000 x 1200 mm pallets, load crosswise, platform up/down	Ast3	(mm)			-	-	-
4.34c	Working aisle width (Ast) with 800 x 1200 mm pallets, load lengthwise, platform up/down	Ast	(mm)	2479 / 2862	2537 / 2957	2557/2942 (l=1150)	2538/2913 (l=1150)	2593 / 2977 (l=1150)
4.34d	Working aisle width (Ast3) with 800 x 1200 mm pallets, load lengthwise, platform up/down	Ast3	(mm)	2325 / 2708	2515 / 2935	2390/2775	2372/2747	2579 / 2963
4.35	Turning radius	Wa	(mm)	1675 / 2058	1865 / 2285	1790/2175	1172/2147	1826 / 2210
5.0	**Performance**							
5.1	Travel speed, with / without load		km / h	6/6	6/6	8.5/8.5	8.5/8.5	8.5/8.5
5.2	Lifting speed, with / without load		m / s	0.13 / 0.26	0.13 / 0.26	0.16/0.33	0.16/0.33	0.13/0.23
5.3	Lowering speed, with / without load		m / s	0.33 / 0.21	0.33 / 0.21	0.39/0.31	0.39/0.31	0.20/0.12
5.7	Gradeability, with / without load		%	7 / 9	7 / 9			
5.8	Maximum gradeability with / without load		%	7 / 9	9.9 / 21.4	7	14.6/26.5	10/10
5.9	Acceleration time (10 metres) with / without load		s	7.9 / 7.5	7.9 / 7.5	6.6/5.6	6.6/5.6	6.6/5.6
5.10	Service brakes (mechanical / hydraulic / electric / pneumatic)			Electric	Electric	Electric	Electric	Electric
6.0	**Electric motors**							
6.1	Drive motor capacity (60 min. short duty)		kW	1.3	1.3	2.2	2.2	2
6.2	Lift motor output at 15% duty factor		kW	1	1	3,6	3,6	3
6.3	Battery to DIN			no	no	NA	NA	NA
6.4	Battery voltage/capacity at 5-hour discharge		V / Ah	24V / 220Ah-400Ah	24V / 220Ah-400Ah	24V/220Ah-400Ah	24V/220Ah-400Ah	24V/375Ah
6.5	Battery weight		kg	250-370	250-370	250-370	250-370	285
6.6b	Energy consumption according to VDI 60 cycle		kWh / h			1.138	1.138	1.138
8.0	**Miscellaneous**							
8.1	Type of drive control			Stepless	Stepless	Stepless	Stepless	Stepless
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)	62.8				
10.7.1	Level of noise at the ear level of the driver according to EN 12 053:2001 and EN ISO 4871, drive/lift/idle LpAZ		dB (A)			67.5	67.5	67.5

Some options affect VDI measurements, these options are shown between brackets '()', and are not separate models.

NSV12-16P(I)



NSV16P(S)



Ast = Wa + R + a

Ast = Wa + $\sqrt{(l6 - x)^2 + (b12 / 2)^2}$ + a

Ast = Working aisle width

Wa = Turning radius

a = Safety clearance 2 x 100 mm

R = $\sqrt{(l6 - x)^2 + (b12 / 2)^2}$

l6 = Pallet length (800 or 1000 mm)

b12 = Pallet width (1200 mm)

NSV12P(I)			
Mast Type	h3+h13 mm	h1* mm	h2+h13 mm
Duplex Without Free Lift (DS)	2690	1845	80
	2990	1995	80
	3290	2150	80
	3590	2300	80
	4190	2600	80

NSV12P(I)			
Mast Type	h3+h13 mm	h1* mm	h2+h13 mm
Duplex With Free Lift (DEV)	2690	1845	1433
	2990	1995	1583
	3290	2150	1738
	3590	2300	1888
	4190	2600	2188

* With Initial Lift (I): h1 + 110mm when support legs in upper position

NSV16P(I,S)			
Mast Type	h3+h13 mm	h1* mm	h2+h13 mm
Duplex Without Free Lift (DS)	1670	1390	130
	2400	1755	130
	2900	2005	130
	3200	2155	130
	3600	2355	130
	3800	2455	130
	4200	2655	130
	4350	-	
	4800	-	
	5400	-	

NSV16P(I,S)			
Mast Type	h3+h13 mm	h1* mm	h2+h13 mm
Duplex With Free Lift (DEV)	1670	1385	835
	2400	1750	1200
	2900	2000	1450
	3200	2150	1600
	3600	2350	1800
	3800	2450	1900
	4200	2650	2100
Triplex With Free Lift (TREV)	3600	1750	1270
	4350	2000	1520
	4800	2150	1670
	5400	2350	1870

* With Initial Lift (I): h1 + 110mm when support legs in upper position; with Straddle (S): h1 - 30mm

Some options affect VDI measurements, these options are shown between brackets '()', and are not separate models.

Mast Performance and Capacity

h1 Height with mast lowered
h2 Standard free lift
h3 Lift height
h4 Height with mast raised
h5 Full free lift
Q Lifting capacity, rated load
c Load centre (distance)

LI-ION BATTERIES

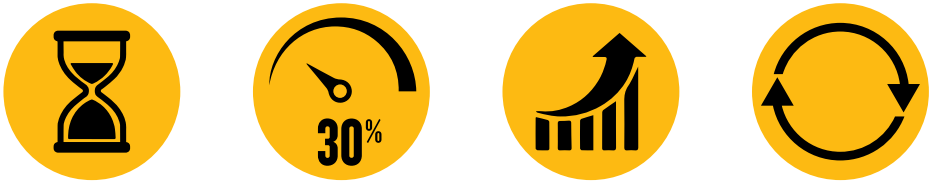
CONSIDER THE BENEFITS OF LI-ION BATTERY TECHNOLOGY

LiION BATTERY TECHNOLOGY

Like all components on Cat® lift trucks, batteries are carefully chosen and specified for optimum compatibility with each individual truck and its application requirements. As a leader in forklift development, we are ready to adopt new component technologies as soon as they become genuinely cost-effective.

At present, the needs of most lift trucks are still met optimally by lead-acid batteries, but in some cases lithium-ion (Li-ion) batteries now offer a realistic alternative. This is especially true in high-energy, multi-shift, 24/7 operations.

In view of the improved performance and affordability of today's Li-ion batteries, we have introduced them as an option. They will be offered on particular trucks, whenever they make economic and practical sense for you and your business.



Will Li-ion work for you?

Li-ion batteries offer tremendous advantages over traditional lead-acid batteries. The big question is whether those benefits are sufficient – in your situation – to justify the large difference in purchase price. To answer this, you must consider their total cost of ownership (TCO). The key factors are summarised below.

Li-ion cost savings compared to lead-acid

These include savings on energy, equipment, labour and downtime.

- Longer life – 3 to 4 times lead-acid lifespan – reduces overall battery investment
- Higher efficiency – energy losses during charging and discharging are around 30% lower, so electricity consumption is reduced
- Longer runtime – thanks to higher energy capacity, lower losses and more efficient recovery of current from regenerative braking
- Consistently high performance – with a more constant voltage curve – maintains greater truck productivity, even toward the end of a shift
- Faster charging and opportunity charging – full charge within 1 to 2 hours – enables top-ups during short breaks, without damaging the battery or shortening its lifespan
- No battery changing – fast opportunity charges enable continuous operation with just one battery and minimise the need to buy, store and maintain spares
- No maintenance – the battery stays on board the truck for charging and there is no need for top-ups or electrolyte checks
- No gas – avoids the space, equipment and running costs of a battery room and ventilation system
- Inbuilt protection – intelligent battery management system (BMS) automatically prevents excessive discharge, charge, voltage and temperature, as well as virtually eliminating application errors

LI-ION BATTERIES

CONSIDER THE BENEFITS OF LI-ION BATTERY TECHNOLOGY

LiION BATTERY TECHNOLOGY

Li-ion extra costs compared to lead-acid

Li-ion battery purchase prices are higher – although they are coming down as production volumes increase. You may also need to invest in extra charging points and electrical infrastructure to support them.

Further advantages of Li-ion compared to lead-acid

Money should not be your only consideration. Li-ion batteries also have important safety and environmental benefits.

- Greater safety – no explosive gas, acid spills or regular battery lifting
- Smaller carbon footprint – better efficiency means less energy consumption, while longer life lowers the requirement for manufacture of additional batteries

Cat lift trucks with Li-ion

The necessary LIBAT option can be built into new trucks or retrofitted to your existing fleet using a fast and easy conversion kit. LIBAT ensures perfect integration of the Li-ion battery and lift truck. Along with the necessary cabling and connections, it includes a battery lock.

For extra peace of mind, Li-ion batteries come with the option of a service contract, full warranty and feedback on battery status. Data collected by the battery's inbuilt battery management system (BMS) is uploaded and analysed to help the dealer advise you on its condition and usage. The report may, for example, indicate a need for changes in your practices to improve efficiency and battery life.

Batteries and chargers with different capacities are available. Your dealer will identify the best combination for your needs.

NSV12/16P LI-ION BATTERY AND CHARGER	
Battery capacity, Ah	208 / 260
Charger capacity, A, 1 – 2,5 hour*	100 / 200

* Both values possible for 208Ah Li Ion battery, depending on charger.

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CAT®