



**N020N2  
N020N2P**

**N025N2  
N025N2P**

**N020N2X  
N020N2XP**

**N012N2F  
N012N2FP**

# ENERGISE YOUR OPERATION

**PRELIMINARY SPECIFICATIONS**

**LOW LEVEL ORDER PICKER 24V, 1.2 - 2.5 TONNES**



# PEAK PRODUCTIVITY AT LOWER HEIGHTS

THE NO\_N2 RANGE OF LOW-LEVEL ORDER PICKERS IS ALL ABOUT MAKING BEST USE OF ENERGY. AS WELL AS DELIVERING THE BEST ENERGY EFFICIENCY IN THE MARKET, ITS DESIGN MAXIMISES YOUR DRIVER'S ENERGY AND TRANSMITS FULL POWER TO YOUR WAREHOUSE OPERATION.



Building on the Responsive Drive System (RDS) technology pioneered in recent Cat® electric counterbalance trucks, the order pickers react rapidly to operator steering behaviour and travel speed.



Their unique intelligent curve control constantly adjusts steering sensitivity, cornering speed and turning angle limitation to meet changing needs. The latest generation of controllers and software also optimises acceleration, traction, regenerative braking and other characteristics for smooth, safe, confident and enjoyable driving.



Along with its innovative, adjustable, effortless steering wheel and integrated ergonomic controls, each truck helps energise its user with a triple-suspension floor, comfortable backrest and plenty of unobstructed space.



Easy walk-through access and 'flying start' drive add further time economy, while low power consumption and durable construction reduce operating costs.



The NO20N2X/N2XP can carry two Europallets or three roll cages (optionally 4 roll cages on 2850mm forks) on its scissor-lifting forks. The forks raise the load section to a height of 855mm for ergonomic order picking with reduced stretching and straining for the operator.

## LOWER COST OF OWNERSHIP

- Integrated single-unit motor and gear design adds reliability and delivers the best energy efficiency in the market.
- Simplified one-piece main frame, with welded steel construction, is durable and trouble-free.
- New design for fork carriage, linkages and levers reduces wear and roller damage, and avoids any space-taking linkage protrusion into the operator compartment.
- Forks are wide and reinforced for durability, while the fork carriage's smooth, flat front face prevents cutting or trapping of goods by sharp edges.
- Simple and quick accessibility of systems and components for checks and servicing minimises downtime and bills.
- Display of service hours and battery status encourages correct maintenance.
- Optional Li-Ion battery offering longer life, longer runtime and lower maintenance costs over traditional lead-acid batteries.

## UNMATCHED PRODUCTIVITY

- Unique intelligent curve control reacts rapidly to operator steering behaviour and travel speed – adjusting sensitivity, cornering speed and angle limitation to meet changing needs.
- Steering control characteristics are modified when reversing, to allow for driver's sideways position and one-handed operation.
- Advanced traction control ensures smooth, rapid acceleration and prevents wheelspin and related wear when driving on slippery surfaces or carrying heavy loads.
- Deceleration rate and stopping distance are easy to control and predict, for perfect positioning, and are programmable using TruckTool.
- ECO and PRO driving modes can be chosen according to the operator and application, and customised settings can be applied to meet more specific requirements.
- Walk-by-side operation can be controlled via the steering wheel, with angles limited for safety, to improve view of fork ends (optional side-mounted controls are available).
- 'Flying start' function allows operator to begin acceleration from walk-beside position, before stepping onto the presence-detecting floor mat, for quicker access to drive.
- Spacious and unobstructed operator compartment, with non-slip mat, low step height and no tripping hazards, ensures quick walkthrough access.
- Bevelled fork tips and tandem load wheels enable rapid pallet and picking cage entry with less chance of damage.
- Class-leading fork lift height (up to 220 mm even in lowest-lifting models) enhances ground clearance of pallets and picking cages, for fast, safe handling on loading docks and ramps.

- Range includes a variety of rising fork (F) and rising operator platform (P) models for different applications.
- The NO20N2X features 2375mm long forks on a scissor-lifting mechanism that can carry two europallets or three rollcages at once (Optionally 4 roll cages on 2850mm forks).
- The NO20N2XP features a rising operator platform that lifts to 1000mm for picking at heights of up to 2.5m, reducing stretching and straining for the operator.

## SAFETY AND ERGONOMICS

- High-comfort, triple-suspension floor offers floating structure to dampen shocks and vibrations, sideways dampening to relax knees and ankles, and thick state-of-the-art matting to reduce microvibration.
- Angled footrest minimises strain for seated (see options) and tall operators.
- Optimised backrest shape and height give maximum walk-through access width at hip level, easy passage for operators carrying goods, and a secure leaning position during turns.
- Innovative steering wheel, with vibration damping, is effortless to operate with either hand and can be adjusted for height and angle to maximise comfort.
- Ergonomically shaped accelerator triggers and other controls, integrated into steering wheel, are easily reached by operator without releasing grip.
- Top-of-steering-wheel hand positioning choice enables comfortable and controlled reversing with reduced twisting of shoulders and wrists.
- Regenerative braking, optimised to eliminate swaying effect at full stop, combines with hill hold function and anti-lock brakes to aid smooth operation, confidence and safety in all conditions.
- Storage space for operator equipment is provided in a rear compartment and in trays at the front (optional).



# STANDARD EQUIPMENT AND OPTIONS

	N020N2	N020N2P	N025N2	N025N2P	N020N2X	N020N2XP	N012N2F	N012N2FP
<b>GENERAL</b>								
Multifunctional steering wheel (electric 200°)	●	●	●	●	●	●	●	●
Power ON/OFF by Key switch	●	●	●	●	●	●	●	●
Hour meter & BDI	●	●	●	●	●	●	●	●
ECO/PRO mode	●	●	●	●	●	●	●	●
Drive speed reduction in curves	●	●	●	●	●	●	●	●
Maximum drive speed adjusted according to load weight	●	●	●	●	●	●	●	●
Floor mat acting as dead man's pedal	●	●	●	●	●	●	●	●
Crane battery change	●	●	●	●	●	●	●	●
Polyurethane wheels	●	●	●	●	●	●	●	●
Tandem load wheels polyurethane	●	●	●	●	●	●	●	●
Suspended operator's platform	●	●	●	●	●	●	●	●
Simultaneously driving and lifting of the forks	●	●	●	●	●	●	●	●
Hill hold	●	●	●	●	●	●	●	●
Automatic parking brake	●	●	●	●	●	●	●	●
Lifting driver's platform, h=1000 mm (N020N2P/25N2P, N012N2FP, N020N2XP)	—	●	—	●	—	●	—	●
Lift height (h3 + h13) 220 mm (N020N2/25N2, N020N2P/25N2P)	●	●	●	●	—	—	—	—
Lift height (h3 + h13) 850 mm (N012N2F, N012N2FP)	—	—	—	—	—	—	●	●
Lift height (h3 + h13) 855 mm (N020N2X, N020N2XP)	—	—	—	—	●	●	—	—
Simultaneous driving and lifting of the driver's platform	—	●	—	●	—	●	—	●
Drive speed reduction when platform raised (4 km/h)	—	●	—	●	—	●	—	●
Drive speed reduction when forks raised (lift height > 300 mm)	—	—	—	—	●	●	●	●
<b>POWER SOURCE</b>								
Li-Ion battery	○	○	○	○	○	○	○	○
Lead-acid battery	○	○	○	○	○	○	○	○
<b>ENVIRONMENT</b>								
Cold store design, 0C° to -35C°	○	○	○	○	○	○	○	○
<b>DRIVE / LIFT CONTROLS</b>								
Walk beside drive button in backrest, FWD/BWD	○	○	○	○	○	○	○	○
Buttons for lift/lower on sides of backrest	○	○	○	○	○	○	○	○
<b>SAFETY</b>								
Blue point safety light towards driving direction (forks trailing)	○	○	○	○	○	○	○	○
Driving light towards driving direction (forks trailing)	○	○	○	○	○	○	○	○
Warning strobe, yellow	○	○	○	○	○	○	○	○
Drive alarm (programmable)	○	○	○	○	○	○	○	○
Fire extinguisher	○	○	○	○	○	○	○	○
<b>WHEEL OPTIONS</b>								
Polyurethane traction and load wheels	●	●	●	●	●	●	●	●
Power friction traction wheel	○	○	○	○	○	○	○	○
<b>COLOUR</b>								
Special RAL colour on front machinery steel cover	○	○	○	○	○	○	○	○



Standard



Option

# STANDARD EQUIPMENT AND OPTIONS

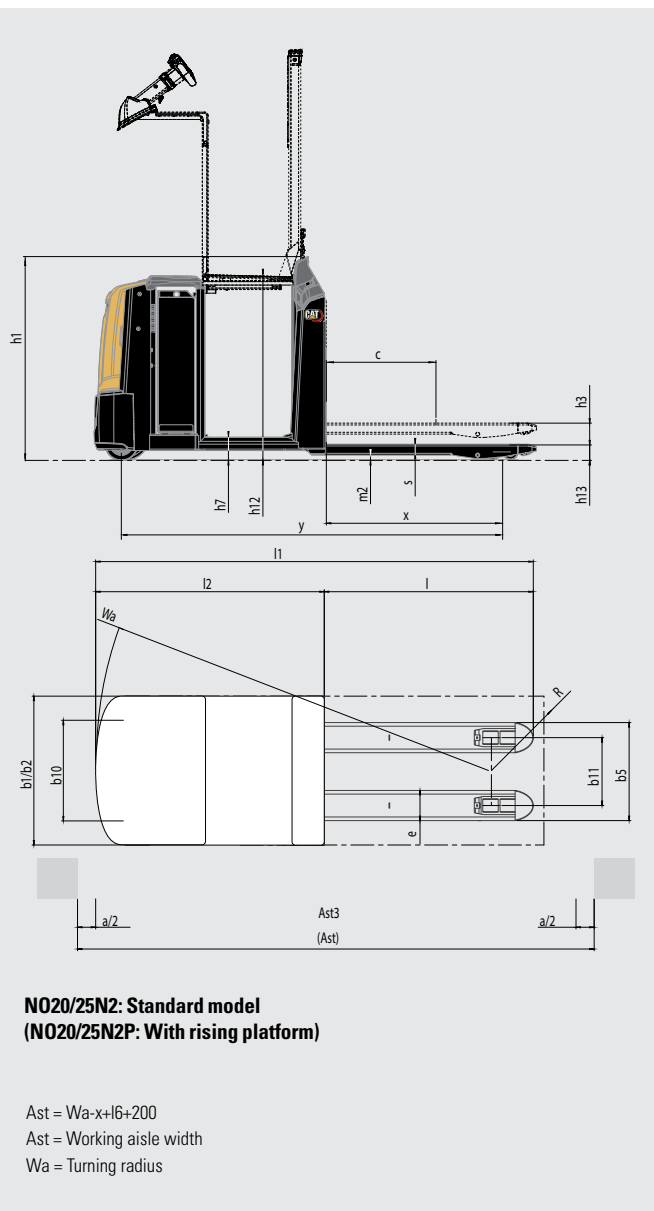
OTHER OPTIONS	N020N2	N020N2P	N025N2	N025N2P	N020N2X	N020N2XP	N012N2F	N012N2FP
High drive speed 13 km/h (without load)	○	○	●	●	●	●	●	●
PIN code access with BDI display	○	○	○	○	○	○	○	○
PIN code access with colour display	○	○	○	○	○	○	○	○
Colour display without PIN code access	○	○	○	○	○	○	○	○
Walk beside drive button in backrest, FWD/BWD	○	○	○	○	○	○	○	○
Buttons for lift/lower on sides of backrest	○	○	○	○	○	○	○	○
Accessory rail in front	○	—	○	—	○	—	○	—
Picking tray, for N020/25N2P, N012N2FP and N020N2XP models only. Max. 50 kg	—	○	—	○	—	○	—	○
Scanner holder	○	○	○	○	○	○	○	○
Equipment holder (RAM mountings)	○	○	○	○	○	○	○	○
Wrapping holder	○	○	○	○	○	○	○	○
Load backrest	○	○	○	○	○	○	○	○
Rear grab handle on backrest	○	—	○	—	○	—	—	—
Foot switch for lowering the driver's platform	—	○	—	○	—	○	—	○
Sideways battery change	○	○	○	○	○	○	○	○
Clipboard, A4	○	○	○	○	○	○	○	○
Front storage boxes	○	—	○	—	○	—	○	—
Storage folder on bottom of the platform	○	—	○	—	○	—	○	—
Entry and exit rollers for crosswise pallet handling	○	○	○	○	—	—	—	—
Back cushion, tiltable to seat position for back & feet rest. Adjustable in height.	○	—	○	—	○	—	○	—
Power supply, 12 V	○	○	○	○	○	○	○	○
Power supply, USB 5 V	○	○	○	○	○	○	○	○
Heavy duty front nylon strip covered bumper	○	○	○	○	○	○	○	○
Raised front guard plate	○	○	○	○	○	○	○	○

● Standard ○ Option



Characteristics		
1.1	Manufacturer	
1.2	Manufacturer's model designation	
1.3	Power source	
1.4	Operator type	
1.5	Load capacity	Q (kg)
1.6	Load center distance	c (mm)
1.8	Load wheel axle to fork face (forks lowered)	x (mm)
1.9	Wheelbase	y (mm)
Weight		
2.1	Truck weight without load, with maximum battery weight	(kg)
2.2	Axle loadings with nominal load & maximum battery weight, drive/load side	(kg)
2.3	Axle loadings without load & with maximum battery weight, drive/load side	(kg)
Wheels, Drive Train		
3.1	Tyres: PT=Power Thane, Vul=Vulkollan, P=Polyurethane, N=Nylon, R=Rubber drive/load side	
3.2	Tyre dimensions, drive side	(mm)
3.3	Tyre dimensions, load side	(mm)
3.4	Castor wheel dimensions (diameter x width)	(mm)
3.5	Number of wheels, load/drive side (x=driven)	
3.6	Track width (center of tyres), drive side	b10 (mm)
3.7	Track width (center of tyres), load side	b11 (mm)
Dimensions		
4.2a	Height	h1 (mm)
4.4	Lift height	h3 (mm)
4.5	Height with mast extended	h4 (mm)
4.8	Seat- or stand height	h7 (mm)
4.14	Platform height, raised	h12 (mm)
4.15	Fork height, fully lowered	h13 (mm)
4.19	Overall length	l1 (mm)
4.20	Length to fork face	l2 (mm)
4.21	Overall width	b1/b2 (mm)
4.22	Fork dimensions (thickness, width, length)	s / e / l (mm)
4.25	Outside width over forks (minimum/maximum)	b5 (mm)
4.32	Ground clearance at center of wheelbase, (forks lowered)	m2 (mm)
4.34a	Working aisle width (Ast) with 800 x 1200 mm pallets, load lengthwise	Ast (mm)
4.35	Turning radius	Wa (mm)
Performance		
5.1	Travel speed, with/without load	km/h
5.2	Lifting speed, with/without load	m/s
5.3	Lowering speed, with/without load	m/s
5.7	Gradeability, with/without load	%
5.10	Service brake	
Electric motors		
6.1	Drive motor capacity (60 min. short duty)	kW
6.2	Lift motor output at 15% duty factor	kW
6.4	Battery voltage/capacity at 5-hour discharge	V /Ah
6.5	Battery weight	kg
6.6a	Energy consumption according to EN16796	kWh/h
Miscellaneous		
8.1	Type of drive control	
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)
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)
10.7.2	Whole-body vibration (EN 13 059:2002)	
10.7.3	Hand-arm vibration (EN 13 059:2002)	

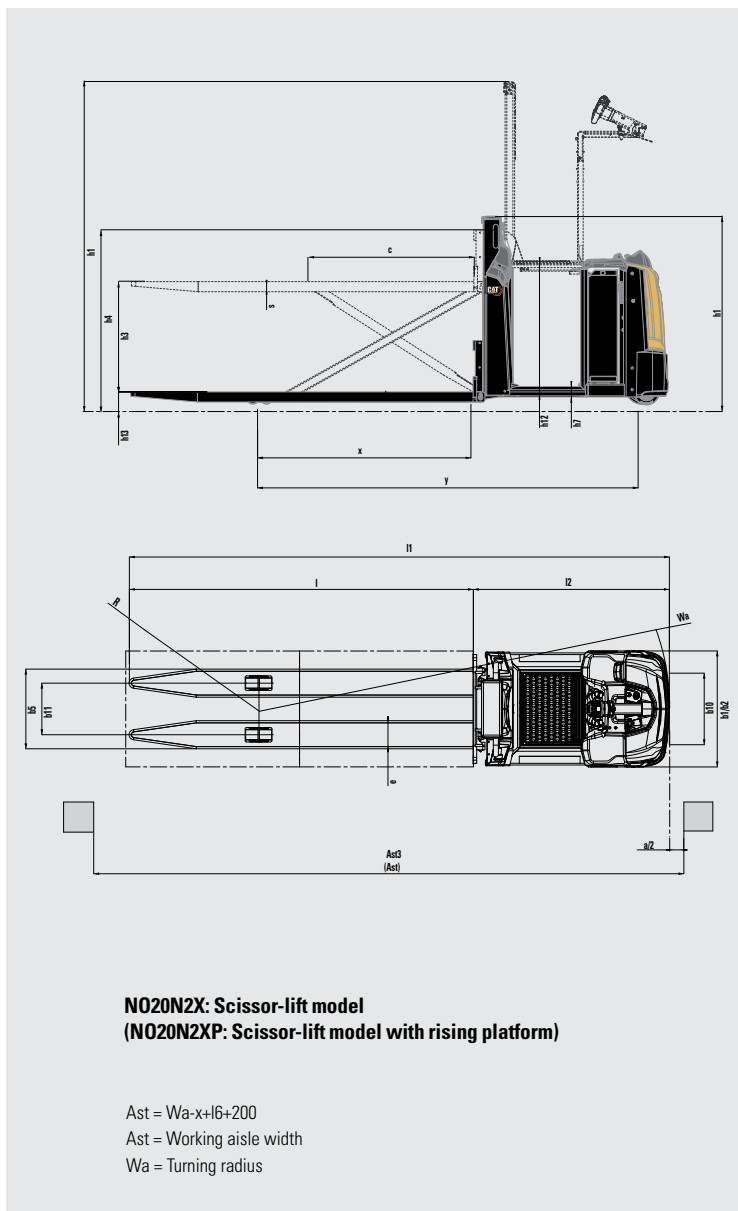
Cat Lift Trucks	Cat Lift Trucks	Cat Lift Trucks	Cat Lift Trucks
N020N2	N020N2P	N025N2	N025N2P
Battery	Battery	Battery	Battery
Stand-on	Stand-on	Stand-on	Stand-on
2000	2000	2500	2500
600	600	600	600
960	960	960	960
2054 <sup>5)</sup>	2054 <sup>5)</sup>	2054 <sup>5)</sup>	2054 <sup>5)</sup>
1079 <sup>1)</sup>	1215 <sup>1)</sup>	1079 <sup>1)</sup>	1215 <sup>1)</sup>
1082 / 1997	1130 / 2085	1178 / 2401	1223 / 2492
829 / 250	913 / 302	829 / 250	913 / 302
Vul/ Vul	Vul/ Vul	Vul/ Vul	Vul/ Vul
ø250	ø250	ø250	ø250
ø85	ø85	ø85	ø85
ø180 × 65	ø180 × 65	ø180 × 65	ø180 × 65
4 / 1 x 1	4 / 1 x 1	4 / 1 x 1	4 / 1 x 1
494	494	494	494
365	365	365	365
1173	1394/ 2244	1173	1394/ 2244
135	135	135	135
-	-	-	-
123	150	123	150
-	1000	-	1000
85	85	85	85
2421 <sup>5)</sup>	2421 <sup>5)</sup>	2421 <sup>5)</sup>	2421 <sup>5)</sup>
1271 <sup>5)</sup>	1271 <sup>5)</sup>	1271 <sup>5)</sup>	1271 <sup>5)</sup>
800	800	800	800
6 / 175 / 900 - 3600	60 / 175 / 900 - 3600	60 / 175 / 900 - 3600	60 / 175 / 900 - 3600
480/ 660	480/ 660	480/ 660	480/ 660
25	25	25	25
2898 <sup>5)</sup>	2898 <sup>5)</sup>	2898 <sup>5)</sup>	2898 <sup>5)</sup>
2231 <sup>5)</sup>	2231 <sup>5)</sup>	2231 <sup>5)</sup>	2231 <sup>5)</sup>
9.0 / 9.0 (opt 9 / 13)	9.0 / 9.0 (opt 9 / 13)	9.0 / 13.0	9.0 / 13.0
0.04 / 0.05	0.04 / 0.05	0.03 / 0.05	0.03 / 0.05
0.05 / 0.03	0.05 / 0.03	0.05 / 0.03	0.05 / 0.03
7 / 15	7 / 15	7 / 15	7 / 15
Electric	Electric	Electric	Electric
2.6	2.6	2.6	2.6
1.2	1.2	1.2	1.2
24 / 465 - 620	24 / 465 - 620	24 / 465 - 620	24 / 465 - 620
366 - 493	366 - 493	366 - 493	366 - 493
0.37	0.37	0.4	0.4
Stepless	Stepless	Stepless	Stepless
62 <sup>3)</sup>	62 <sup>3)</sup>	62 <sup>3)</sup>	62 <sup>3)</sup>
73 / 62 / - <sup>3)</sup>	73 / 62 / - <sup>3)</sup>	73 / 62 / - <sup>3)</sup>	73 / 62 / - <sup>3)</sup>
0.6	0.6	0.6	0.6
< 2.5	< 2.5	< 2.5	< 2.5



1) Forks 540 × 1150, battery 620 Ah  
2) Forks 540 × 1150/ lift 1200mm, battery 620 Ah  
3) Inaccuracy of 4 dB(A)  
4) Fork carriage length 2375 mm  
5) With 620Ah battery + 100mm

Characteristics		
1.1	Manufacturer	
1.2	Manufacturer's model designation	
1.3	Power source	
1.4	Operator type	
1.5	Load capacity	Q (kg)
1.6	Load center distance	c (mm)
1.8	Load wheel axle to fork face (forks lowered)	x (mm)
1.9	Wheelbase	y (mm)
Weight		
2.1	Truck weight without load, with maximum battery weight	(kg)
2.2	Axle loadings with nominal load & maximum battery weight, drive/load side	(kg)
2.3	Axle loadings without load & with maximum battery weight, drive/load side	(kg)
Wheels, Drive Train		
3.1	Tyres: PT=Power Thane, Vul=Vulkollan, P=Polyurethane, N=Nylon, R=Rubber drive/load side	
3.2	Tyre dimensions, drive side	(mm)
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3.6	Track width (center of tyres), drive side	b10 (mm)
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4.25	Outside width over forks (minimum/maximum)	b5 (mm)
4.32	Ground clearance at center of wheelbase, (forks lowered)	m2 (mm)
4.34a	Working aisle width (Ast) with 800 x 1200 mm pallets, load lengthwise	Ast (mm)
4.35	Turning radius	Wa (mm)
Performance		
5.1	Travel speed, with/without load	km/h
5.2	Lifting speed, with/without load	m/s
5.3	Lowering speed, with/without load	m/s
5.7	Gradeability, with/without load	%
5.10	Service brake	
Electric motors		
6.1	Drive motor capacity (60 min. short duty)	kW
6.2	Lift motor output at 15% duty factor	kW
6.4	Battery voltage/capacity at 5-hour discharge	V /Ah
6.5	Battery weight	kg
6.6	Energy consumption according to EN16796	kWh/h
Miscellaneous		
8.1	Type of drive control	
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)
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)
10.7.2	Whole-body vibration (EN 13 059:2002)	
10.7.3	Hand-arm vibration (EN 13 059:2002)	

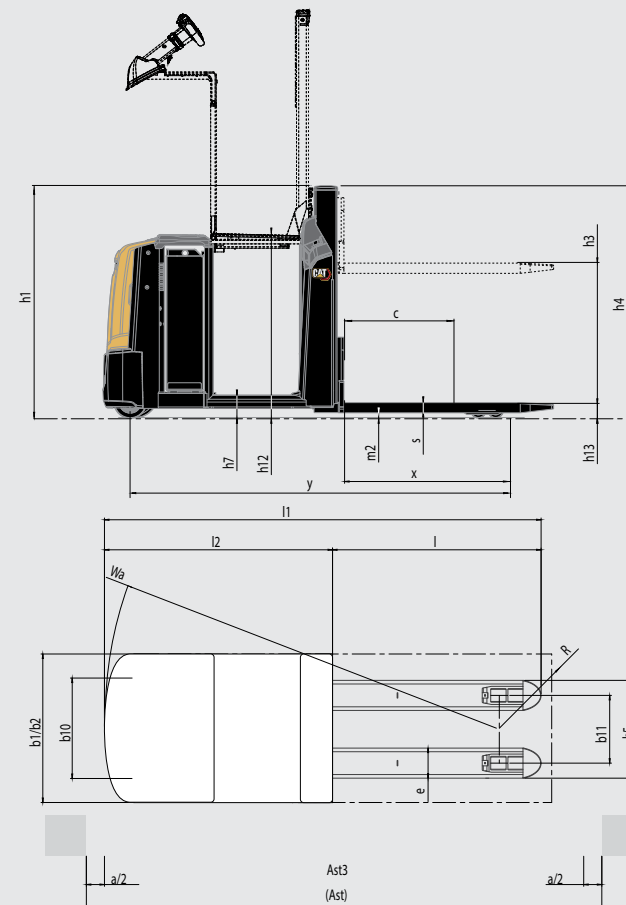
Cat Lift Trucks N020N2X	Cat Lift Trucks N020N2XP
Battery	Battery
Stand-on	Stand-on
2000	2000
1200	1200
1480	1480
2640 <sup>3)</sup>	2640 <sup>3)</sup>
1333 <sup>1)</sup>	1469 <sup>1)</sup>
1135 / 2220	1230 / 2261
929 / 404	1024 / 445
Vul/ Vul	Vul/ Vul
ø250	ø250
ø85	ø85
ø180 x 65	ø180 x 65
4 / 1 x 1	4 / 1 x 1
494	494
326 / 356	326 / 356
1173	1394/ 2244
765	765
1305	1305
123	150
-	1000
90	90
3728 <sup>4) 5)</sup>	3728 <sup>4) 5)</sup>
1353 <sup>4) 5)</sup>	1353 <sup>4) 5)</sup>
800	800
70 / 194 / 2375, 2850	70 / 194 / 2375, 2850
520/ 550	520/ 550
20	20
4074 <sup>4) 5)</sup>	4074 <sup>4) 5)</sup>
2833 <sup>3)</sup>	2833 <sup>3)</sup>
9.0 / 13.0	9.0 / 13.0
0.10 / 0.23	0.10 / 0.23
0.17 / 0.23	0.17 / 0.23
7 / 15	7 / 15
Electric	Electric
2.6	2.6
2.2	2.2
24 / 465 - 620	24 / 465 - 620
366 - 493	366 - 493
0.44	0.44
Stepless	Stepless
62 <sup>3)</sup>	62 <sup>3)</sup>
73 / 62 / - <sup>3)</sup>	73 / 62 / - <sup>3)</sup>
0.7	0.7



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4.8	Seat- or stand height	h7 (mm)
4.10	Height of support legs	h8 (mm)
4.14	Platform height, raised	h12 (mm)
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4.35	Turning radius	Wa (mm)
Performance		
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5.7	Gradeability, with/without load	%
5.10	Service brake	
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6.2	Lift motor output at 15% duty factor	kW
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6.5	Battery weight	kg
6.6	Energy consumption according to EN 16796	kWh/h
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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)
10.7.2	Whole-body vibration (EN 13 059:2002)	
10.7.3	Hand-arm vibration ( EN 13 059:2002)	

Cat Lift Trucks	Cat Lift Trucks
<b>N012N2F</b>	<b>N012N2FP</b>
Battery	Battery
Stand-on	Stand-on
1200	1200
600	600
785	785
1929 <sup>5)</sup>	1929 <sup>5)</sup>
1220 <sup>2)</sup>	1356 <sup>2)</sup>
972/1448	1059/1497
853/367	940/416
Vul/ Vul	Vul/ Vul
ø250	ø250
ø85	ø85
ø180 × 65	ø180 × 65
4 / 1 x 1	4 / 1 x 1
494	494
355	355
1173	1394/ 2244
765 / 1115	765 / 1115
1275 / 1625	1275 / 1625
123	150
-	1000
85	85
2471 <sup>5)</sup>	2471 <sup>5)</sup>
1321 <sup>5)</sup>	1321 <sup>5)</sup>
800	800
56 / 186 / 950 - 1450	56 / 186 / 950 - 1450
540 / 570	540 / 570
25	25
2881 <sup>5)</sup>	2881 <sup>5)</sup>
2106 <sup>5)</sup>	2106 <sup>5)</sup>
9.0 / 9.0 (opt 9 / 13)	9.0 / 9.0 (opt 9 / 13)
0.20 / 0.41	0.20 / 0.41
0.30 / 0.36	0.30 / 0.36
7/ 15	7/ 15
Electric	Electric
2.6	2.6
2.2	2.2
24 / 465 - 620	24 / 465 - 620
366 - 493	366 - 493
0.37	0.37
Stepless	Stepless
62 <sup>3)</sup>	62 <sup>3)</sup>
73 / 62 / - <sup>3)</sup>	73 / 62 / - <sup>3)</sup>
0.6	0.6
< 2.5	< 2.5



**N012N2F: With rising forks**  
**(N012N2FP: With rising forks and platform)**

$$Ast = Wa - x + l6 + 200$$

Ast = Working aisle width

Wa = Turning radius

1) Forks 540 × 1150, battery 620 Ah

2) Forks 540 × 1150/ lift 1200mm, battery 620 Ah

3) Inaccuracy of 4 dB(A)

4) Fork carriage length 2375 mm

5) With 620Ah battery + 100mm

# LI-ION BATTERIES

## CONSIDER THE BENEFITS OF LI-ION 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.



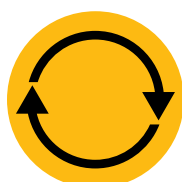
**LONGER  
LIFE**



**HIGHER  
EFFICIENCY**



**LONGER  
RUNTIME**



**CONSISTENT  
PERFORMANCE**



**FASTER  
CHARGING**



**NO  
MAINTENANCE**



**INBUILT  
PROTECTION**

### 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



### 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



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NOTE: Performance specifications may vary depending on standard manufacturing tolerances, vehicle condition, types of tyres, floor or surface conditions, applications, or operating environment. Trucks may be shown with non-standard options. Specific performance requirements and locally available configurations should be discussed with your Cat lift trucks Dealer. Cat Lift Trucks follows a policy of continual product improvement. For this reason, some materials, options and specifications could change without notice.

### 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.

Battery capacity, Ah	208	312
Charger capacity, Ah, 1 hour	100	300



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