

VNL series

7,000kg / 8,000kg / 9,000kg

Electric Lift Truck



- Lithium-ion battery
- High efficiency electric truck
- Near-ICE performance
- Zero emissions
- High efficient drive train
- Agile and highly controllable

J	1.1	Manufacturer		Yale	Yale
I	1.2	Manufacturer's type designation		ERP 70SVNL	ERP70SVNL9
ı	1.3	Drive: electric (battery or mains), diesel, petrol		Electric (battery)	Electric (battery)
	1.4	Operation: hand, pedestrian, standing, seated, order-picker		Seated	Seated
l	1.5	Rated load/rated capacity	Q (kg)	7000	7000
	1.6	Load centre distance	c (mm)	600	900
l	1.8	Load distance, centre to drive axle to fork	x (mm)	609	614
	1.9	Wheelbase	y (mm)	2235	2235
I	2.1	Service weight (max. battery)	kg	10902	11979
weignts	2.2	Axle loading, laden front/rear (max. battery)	kg	15193 / 2710	16583 / 2396
ļ	2.3	Axle loading, unladen front/rear (max. battery)	kg	4406 / 2496	4843 / 7136
l	3.1	Tyres: P = Pneumatic, C = Cushion, SE = Superelastic		Р	P
ı	3.2	Tyre size, front		8.25 x 15 14PR	8.25 x 15 14PR
ı	3.3	Tyre size, rear		8.25 x 15 14PR	8.25 x 15 14PR
ı	3.5	Number of wheels, front/rear (x = driven)		4X/2	4X/2
ı	3.6	Tread, front, standard/wide tread	b10 (mm)	1847	1847
4	3.7	Tread, rear	b ₁₁ (mm)	1536	1536
1	4.1	Tilt of mast/fork carriage, forward / backward	degrees	5 / 10	5/9
-1	4.2	Height, mast lowered (1)	h ₁ (mm)	2540	2712
ı	4.3	Free lift (1)	h ₂ (mm)	100	0
-1	4.4	Lift (1)	hs (mm)	2940	3000
- 1	4.5	Height, mast extended (2)	h4 (mm)	4040	4225
-1	4.7	Height to top of overhead guard (3)	he (mm)	2531	2531
- 1	4.7.1	Height to top of cab	he (mm)	2549	2549
ı	4.8	Seat height relating to SIP	h ₇ (mm)	1547	1547
	4.19	Overall length	lı (mm)	4695	4770
		Length to face of forks	l2 (mm)	3495	3570
	4.21	Overall width	b1/b2 (mm)	2082 / 1784	2082 / 1784
	4.22	Fork dimensions ISO 2331	s/e/l (mm)	60 / 150 / 1200	65 / 200 / 1200
	4.23	Fork carriage ISO 2328, class/type, A/B	la - ()	IVA	IVA
-1		Fork carriage width	b3 (mm)	1980	2030
- 1	4.31	Ground clearance, laden, below mast (1)	m1 (mm)	125	175
		Ground clearance, at centre of wheelbase	m2 (mm)	246	246
	4.33	Load dimensions b12 x l6 crossways	b ₁₂ x l ₆ (mm)	1000 x 1200	1000 x 1200
		Aisle width with predetermined load dimensions (10)	Ast (mm)	4889	4959
		Aisle width with pallets 800 wide x 1200 long (10)	Ast (mm)	5089	5159
		Turning radius Internal turning radius (6)	Wa (mm)	3080 -90	3145 -90
+		Travel speed laden/unladen (5)	b13 (mm)	24.0 / 24.0	
-1	5.1	Travel speed laden/unladen, backwards (5)	km/h	24.0 / 24.0	24.0 / 24.0 24.0 / 24.0
- 1	5.1.1	Lift speed laden/unladen (5)	km/h		0.41 / 0.46
	5.2	Lowering speed laden/unladen	m/sec	0.43 / 0.66 0.58 / 0.53	0.41 / 0.46
	5.3	Drawbar pull laden/unladen, @ 1.6km/hr ⁽⁵⁾	m/sec		
-1	5.5 5.6	Max. drawbar pull laden/unladen,	N N	48871 / 25907 49547 / 25907	48871 / 28506 49547 / 28506
	5.6	Gradeability laden/unladen, @ 1.6km/hr ⁽⁶⁾	%	30 / 24	28 / 24
		Max. gradeability laden/unladen (5)	%	30 / 24	28 / 24
- 1	5.8	Acceleration time, laden/unladen (to 30m) (5)		9.15 / 8.76	-/-
-1	5.9	Service brake	sec	Hydraulic	Hydraulic
-	5.10	Drive motor rating S2 60min	kW	45	45
-1	6.1	Lift motor rating at S3 15%	kW	60.0	60.0
	6.2	Battery according to DIN 43531/35/36 A, B, C, no	r. v v	No	No
)	6.3	Battery voltage/nominal capacity (8)	V/Ah	350 / 192	350 / 192
	6.4	Battery weight		664	
	6.5	Energy consumption in accordance with VDI cycle	kg kWh/h	18.9	664
	6.6	Turnover output	t/h	-	-
-1	6.8	Energy consumption at turnover output	kWh in 1h (kWh/h)	_	-
+		Operating pressure for attachments	bar	173	173
	10.1	Oil volume for attachments	l/min	92.7	92.7
		Sound preasure level at drivers seat (With/without Cab) (9)		92.7 68 / 67	
,		Sound preasure level at drivers seat (with/without Cab) Sound power level during workcycle	dB(A) LPAZ		68 / 67
			dB LWAZ	-	-
		Guaranteed Sound Power 2001/14/EC	dB LWAZ	- Pin	Din
		Towing coupling type dard 2 stage LFL mast configuration Load Backrest Graph T @ 6, 7T @ 9 and 8T @ 6 capacities with BTA	es shown ⁽⁹⁾ With cab val	ues from 9T, without cab values	Pin Spec sheet truck based on: Standard Seat

Yale	Yale	Yale		Manufacturer	1.1	~
ERP80SVNL	ERP80VNL9	ERP90VNL		Manufacturer's type designation	1.2	Distinguishing mark
Electric (battery)	Electric (battery)	Electric (battery)		Drive: electric (battery or mains), diesel, petrol	1.3	ו פר
Seated	Seated	Seated		Operation: hand, pedestrian, standing, seated, order-picker	1.4	shir
8000	8000	9000	Q (kg)	Rated load/rated capacity	1.5	gui
600	900	600	c (mm)	Load centre distance	1.6	stin
614	663.5	613.5	x (mm)	Load distance, centre to drive axle to fork	1.8	۵
2235	2450	2450	y (mm)	Wheelbase	1.9	
11979	12265	11524	kg	Service weight (max. battery)	2.1	Weights
17187 / 2793	18428 / 1836	18440 / 2083	kg	Axle loading, laden front/rear (max. battery)	2.2	/eig
4843 / 7136	5323 / 6942	4983 / 6541	kg	Axle loading, unladen front/rear (max. battery)	2.3	>
Р	Р	Р		Tyres: P = pneumatic, C = cushion, SE = Superelastic	3.1	S
8.25 x 15 14PR	8.25 x 15 14PR	8.25 x 15 14PR		Tyre size, front	3.2	Tyres/chassis
8.25 x 15 14PR	8.25 x 15 14PR	8.25 x 15 14PR		Tyre size, rear	3.3	cha
4X/2	4X/2	4X/2		Number of wheels, front/rear (x = driven)	3.5	es/
1847	2003	2003	b10 (mm)	Tread, front, standard/wide tread	3.6	₹
1536	1536	1536	b ₁₁ (mm)	Tread, rear	3.7	
5/9	5/9	5/9	degrees	Tilt of mast/fork carriage, forward /backward	4.1	
2712	3462	2712	h ₁ (mm)	Height, mast lowered (1)	4.2	
0	0	0	h ₂ (mm)	Free lift (1)	4.3	
3000	4500	3000	hз (mm)	Lift (1)	4.4	
4225	5899	4225	h4 (mm)	Height, mast extended (2)	4.5	
2531	2531	2531	he (mm)	Height to top of overhead guard (3)	4.7	
2549	2549	2549	he (mm)	Height to top of cab	4.7.1	
1547	1558	1547	h ₇ (mm)	Seat height relating to SIP	4.8	
4770	5238	5238	I ₁ (mm)	Overall length	4.19	"
3570	4038	4038	l2 (mm)	Length to face of forks	4.20	Dimensions
2082 / 1784	2239 / 1771	2239 / 1771	b1/b2 (mm)	Overall width	4.21	usi
65 / 200 / 1200	65 / 200 / 1200	65 / 200 / 1200	s/e/I (mm)	Fork dimensions ISO 2331	4.22	<u>Ĕ</u>
IVA	IVA	IVA	,	Fork carriage ISO 2328, class/type, A/B	4.23	_
2030	2030	2030	bз (mm)	Fork carriage width	4.24	
175	175	175	m1 (mm)	Ground clearance, laden, below mast (1)	4.31	
246	253	253	m ₂ (mm)	Ground clearance, at centre of wheelbase	4.32	
1000 x 1200	1000 x 1200	1000 x 1200	b ₁₂ x l ₆ (mm)	Load dimensions b ₁₂ x l ₆ crossways	4.33	
4959	5658	5537	Ast (mm)	Aisle width with predetermined load dimmensions (10)	4.34	
5159	5858	5737	Ast (mm)	Aisle width with pallets 800 wide x 1200 long (10)	4.34.1	
3145	3794	3794	Wa (mm)	Turning radius	4.35	
-90	362	362	b ₁₃ (mm)	Internal turning radius (6)	4.36	
24.0 / 24.0	21.0 / 21.0	21.0 / 21.0	km/h	Travel speed laden/unladen (5)	5.1	
24.0 / 24.0	21.0 / 21.0	21.0 / 21.0	km/h	Travel speed laden/unladen, backwards (5)	5.1.1	
0.40 / 0.46	0.32 / 0.41	0.36 / 0.46	m/sec	Lift speed laden/unladen (5)	5.2	
0.41 / 0.37	0.38 / 0.33	0.38 / 0.33	m/sec	Lowering speed laden/unladen	5.3	dat
48871 / 28506	48933 / 31331	48933 / 29330	N	, , ,		Ge
49547 / 28506	49430 / 31331	49430 / 29330	N	Drawbar pull laden/unladen, @ 1.6km/hr (5)	5.5	Jan
26 / 24	26 / 26	26 / 26	%	Max. drawbar pull laden/unladen, Gradeability laden/unladen, @ 1.6km/hr (5)	5.6	E G
27 / 24	26 / 26	26 / 26		,	5.7	Performance data
-/-	8.88 / 7.69	-/-	%	Max. gradeability laden/unladen (5)	5.8	"
			sec	Acceleration time, laden/unladen (to 30m) (5)	5.9	
Hydraulic	Hydraulic	Hydraulic	14144	Service brake	5.10	
45	45	45	kW	Drive motor rating S2 60min	6.1	
60.0	60.0	60.0	kW	Lift motor rating at S3 15% Retten/ seconding to DIN 43531/35/36 A. R. C. no.	6.2	e.
No	No	No	1//21	Battery according to DIN 43531/35/36 A, B, C, no	6.3	Electric engine
350 / 192	350 / 192	350 / 192	V/Ah	Battery voltage/nominal capacity8	6.4	c e
664	664	664	kg	Battery weight	6.5	otri
-	20.6	-	kWh/h	Energy consumption in accordance with VDI cycle	6.6	Ele
-	-	-	t/h	Turnover output	6.7	_
-	-	-	kWh in 1h (kWh/h)		6.8	_
173	173	173	bar	Operating pressure for attachments	10.1	ō
92.7	92.7	92.7	I/min	Oil volume for attachments	10.2	engine
68 / 67	68 / 67	68 / 67	dB(A) LPAZ	Sound preasure level at drivers seat (With/without Cab) (9)	10.7	e
-	-	-	dB LWAZ	Sound power level during workcycle	10.7.1	Electric
-	-	-	dB LWAZ	Guaranteed Sound Power 2001/14/EC	10.7.2	Elec
Pin	Pin	Pin		Towing coupling type	10.8	
7T: 2940mm bottom of 7T @ 9 3000mm bottom		I values are nominal values a bject to tolerances. For furt		Lift trucks illustrated may feature optional equipment.		

7T @ 9 3000mm bottom of forks, standard 8T @ 6 3000mm bottom of forks, standard 8T @ 9 4500mm bottom of forks, standard 9T: 3000mm bottom of forks, standard All values are nominal values and they are subject to tolerances. For further information, please contact the manufacturer.

Yale products might be subject to change without notice.

Values may vary with alternative configurations.

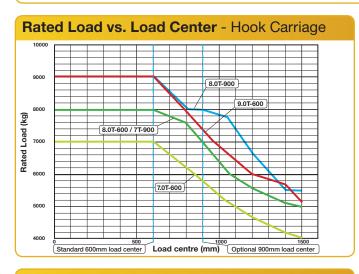
ERP 7	ERP 70SVNL Mast details and capacity ratings (kg)								
Model					ERP70SVNL				
Drive tyres	Drive tyres						25x15/14-Ply Dual Pneuma	tic	
Mast type			Back Tilt	Without Sideshift	With Integral Sideshift	With Hang-on Sideshift and Fork Positioner			
	(mm)	(mm)	(mm)	(mm)		600mm Load centre (kg)			
	3000	2516	4417	100	10	7000	6830	6500	
0.01	3400	2716	4817	100	10	7000	6810	6490	
2 Stage LFL	4400	3216	5817	100	10	7000	6770	6450	
	5400	3716	6817	100	10	7000	6730	6420	
	6000	4116	7417	100	10	6830	6530	6230	
0.01	4700	2576	6118	1425	6	7000	6510	6210	
3 Stage FFL	5600	2876	7018	1725	6	6920	6410	6120	
	6200	3126	7618	1975	6	6750	6210	5930	
							cities with alternative truck spec the WWRP software.	ifications to the ones shown in	

ERP 70	ERP 70SVNL9, ERP 80SVNL, ERP 90VNL Mast details and capacity ratings (kg)								
Model					E	RP70SVNL9, ERP 8	OSVNL, ERP 90VNL		
Drive tyres	Drive tyres						8.25x15/14-Ply [Dual Pneumatic	
Mast	Mast Maximum Overall			Overall Free lift Back			Without	Sideshift	
type	Fork Height		Extended height (mm)	height (Top of Forks) (mm)	Tilt	Capacity at max. height, 600mm Load centre (kg)			
	(Top of Forks) (mm)					ERP70SVNL9 F80 Mast	ERP80SVNL F80 Mast	ERP80VNL9 F90 Mast	ERP90VNL F80 Mast
	3065	2712	4350	0	9	7000	8000	8000	9000
	3565	2962	4850	0	9	7000	8000	8000	9000
2 Stage LFL	4565	3462	5850	0	9	7000	8000	8000	9000
	5565	3962	6850	0	9	7000	8000	7910	8700
	6065	4212	7350	0	9	6760	7730	7760	8080
0.01	4615	2702	6077	1565	6	7000	8000	8000	9000
3 Stage LFL	5515	3002	6977	1865	6	7000	8000	7760	8820
	5965	3152	7427	2015	6	6950	7940	7630	8270
With LBR Without LBR Note: To calculate truck capacities with alternative truck specifications to the ones sh the above tables, please use the WWRP software.						s to the ones shown in			

Model					E	RP70SVNL9, ERP 8	OSVNL, ERP 90VNL		
Drive tyres						8.25x15/14-Ply D	ual Pneumatic		
Mast	Maximum	Overall	Overall	Free lift	Back	With carriage + sideshift Capacity at max. height, 600mm Load centre (kg)			
type	Fork Height	Lowered height (mm)		height (Top of Forks) (mm)	Tilt				
	(Top of Forks) (mm)					ERP70SVNL9 F80 Mast	ERP80SVNL F80 Mast	ERP80VNL9 F90 Mast	ERP90VNL F80 Mast
	3065	2712	4350	0	9	6600	8000	7600	8500
	3565	2962	4850	0	9	6590	8000	7590	8490
2 Stage LFL	4565	3462	5850	0	9	6570	8000	7550	8470
	5565	3962	6850	0	9	6550	8000	7440	8170
	6065	4212	7350	0	9	6320	7730	7280	7580
	4615	2702	6077	1565	6	6580	8000	7570	8500
3 Stage LFL	5515	3002	6977	1865	6	6560	8000	7320	8310
	5965	3152	7427	2015	6	6510	7940	7180	7780
			With LBR	Without LBR			k capacities with alterna se use the WWRP softwa		to the ones shown

ERP 70SVNL9, ERP 80SVNL, ERP 90VNL Mast details and capacity ratings (kg)									
Model					E	RP70SVNL9, ERP 8	OSVNL, ERP 90VNL		
Drive tyres						8.25x15/14-Ply [Dual Pneumatic		
Mast	Maximum	Overall	Overall	Free lift	Back Tilt	With carriage + sideshifting hook fork positioner Capacity at max. height, 600mm Load centre (kg)			
type	Fork Height	height he	Extended	height (Top of Forks) (mm)					
	(Top of Forks) (mm)		height (mm)			ERP70SVNL9 F80 Mast	ERP80SVNL F80 Mast	ERP80VNL9 F90 Mast	ERP90VNL F80 Mast
	3065	2712	4350	0	9	6560	8000	7580	8460
	3565	2962	4850	0	9	6550	8000	7560	8440
2 Stage LFL	4565	3462	5850	0	9	6530	8000	7530	8420
	5565	3962	6850	0	9	6510	8000	7410	8130
	6065	4212	7350	0	9	6290	7730	7260	7530
	4615	2702	6077	1565	6	6560	8000	7550	8470
3 Stage LFL	5515	3002	6977	1865	6	6540	8000	7290	8280
	5965	3152	7427	2015	6	6480	7940	7150	7750
			With LBR	Without LBR			k capacities with alternates use the WWRP software		to the ones shown in

ERP80VNL9 Mast details and capacity ratings (kg) - Superelastic tyres Model Drive tyres Mast Overall Overall Free lift Back Maximum type Fork Height Lowered Extended height Tilt (Top of Forks) height height (Top of Forks) (mm) (mm) (mm) (mm) 3065 4398 0 9 2712 9 3565 2962 4898 0 2 Stage LFL 4565 3462 5898 0 9 9 5565 3962 6898 0 4212 9 6065 7398 0 4615 2712 6125 1405 6 3 Stage 5515 3012 7025 1705 6 LFL 5965 3162 7475 1855 6 With LBR Without LBR Note: To calculate truck capacities with alternative truck specifications to the ones shown in



Truck Configuration

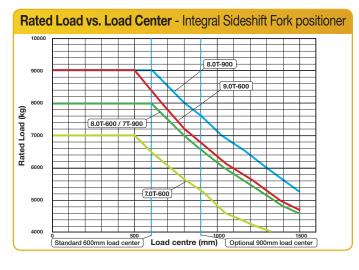
2-stage LFL F70 mast at HNHL (5400mm MFH) 7.0T - 600 models
2-stage LFL F80 mast at HNHL (5565mm MFH) 8.0T - 600 models
2-stage LFL F80 mast at HNHL (4565 mm MFH) 9.0T - 600 models
2-stage LFL F90 mast at HNHL (4565 mm MFH) 8.0T - 900 models
2-stage LFL F90 mast at HNHL (5565mm MFH) 7.0T - 900 models
2-stage LFL F90 mast at HNHL (5565mm MFH) 7.0T - 900 models
2030mm Standard Hook Carriage with Load Backrest (7T @ 9, 8-9T capacity)

Note: Special forks with higher load ratings are required to obtain full truck ratings on load centers greater than 900mm on 8T @ 900mm, greater than 1200mm on 9T and greater than 600mm on 7T.

The ratings are computed using fork lengths as below:

	Load Centre (mm)	Fork Length (mm)		
	500 to 700	1200		
	Over 700 to 1000	1500		
All models	Over 1000 to 1200	1800		
	Over 1200	2400		

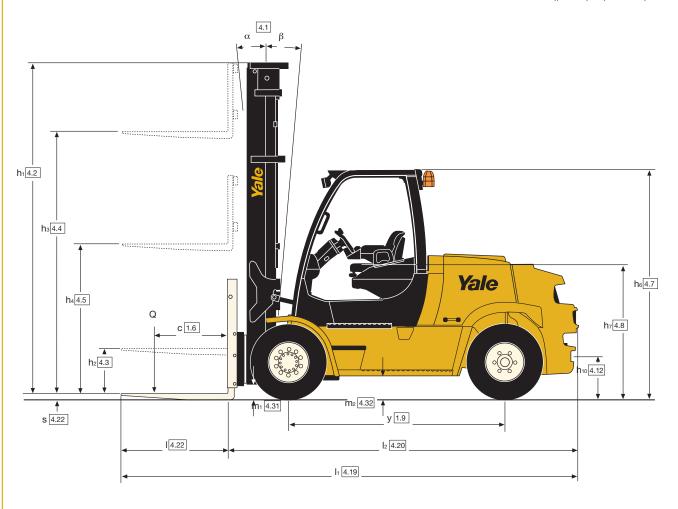
Note: Special forks with higher load ratings are required to obtain full truck ratings on load centers greater than 1050mm on 8T @ 900mm, greater than 600mm on 7T.

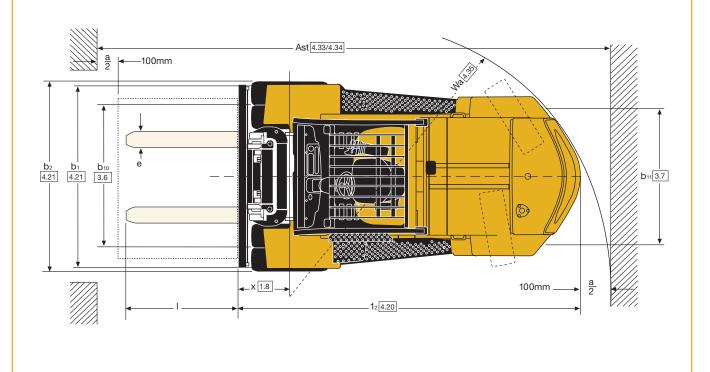


*Side Shift Fork Positioner for F70 mast is a Hang On type (HSSFP) **Note:** Special forks with higher load ratings are required to obtain full truck ratings on load centers greater than 1050mm on 8T @ 900mm, greater than 900mm on 7T.

Truck Dimensions

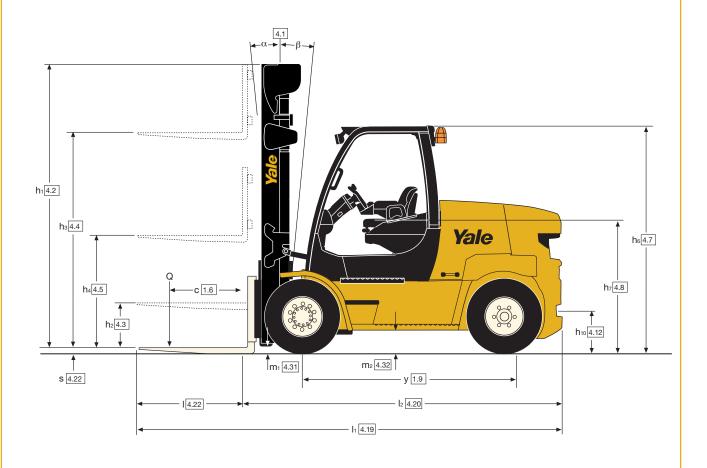
Ast = Wa + R + a = Wa +($(\sqrt{16} + x)^2 + (b_{12}/2 - b_{13})^2 + a$

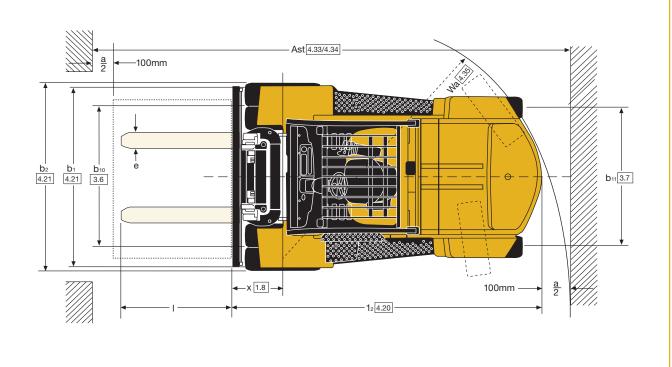




Truck Dimensions

Ast = Wa + R + a = Wa + $((\sqrt{16} + x)^2 + (b_{12}/2 - b_{13})^2 + a_{13})^2$





VNL series

Models: ERP70SVNL, ERP80SVNL, ERP80VNL9, ERP90VNL6



Yale Veracitor VNL Series

Designed to provide excellent performance optimized for lowest hourly cost of operation.

Electric Motors with Lithium Ion Battery

Internal water-cooled Permanent Magnet technology in the traction and lift system motors enables best in class performance with excellent energy efficiency, with few energy losses.

Battery system

Truck complies with EU low-voltage directives.

Opportunity charging, even for short periods, gives extended run-time. Sufficient capacity to run intensive shifts, even to three-shift operation.

Fully charge (100%) from flat in under 2 hours, in typical environmental conditions, matched to 50kW charger. Li-ion battery is maintenance-free and

has 3 times the life of lead acid batteries

Drive Axle and Brakes

The maintenance-free Yale Continuous Stability Enhancement (CSE) augments lateral stability without compromising travel over uneven surfaces. The trucks feature auto generative braking that uses the electric motor to slow the truck, minimising wear on the oil immersed brakes. The regenerative braking system reduces maintenance and extends truck dependability.

Hydraulic Power Steering

Responsive control, eliminating mechanical linkages for reduced surface shocks and maintenance.

Centred, textured steering wheel has a spinner knob with four turns lock-to-lock. Steer cylinder is located within the the steer axle for protection.

Cast steel mounted on polymer bushings for excellent stability and axle articulation.

Chassis

The chassis uses a unitised 25mm thick frame structure with a low step height,

the Overhead Guard allows excellent visibility and reduced noise.

Operator's Compartment

AccuTouch minilevers are integrated into the right-side armrest for superior ergonomics. Automotive-style pedals have a large, single inch/brake pedal as standard with rubber floor mats to reduce noise and vibration, the floorplate can be easily removed for excellent service access. Low step height provides easy access and gull-wing doors and hand grips give easy access to battery compartment. The adjustable steering column allows for comfortable positioning by the operator.

A high accuracy state-of-charge indicator is installed in the cab display and on the

Intellix Vehicle System Management (VSM)

The VSM controller provides extensive monitoring and control of functions and systems. CANbus wiring, sealed connectors and Hall effect sensors reduces complexity for truck system communication.

Hydraulic System

Incorporates a multi-stage gear pump with a cast iron body. Protection from overloads via a lift circuit relief valve with a secondary one for tilt and auxiliary functions. Oil is double filtered, the hydraulic tank is integrated into the frame. Accutouch minilevers have an emergency lowering valve to allow lowering in the event of power loss.

Masts

Yale Simplex LFL and Triplex FFL masts are available with pre-lubed and sealed full radius load rollers that resist forward. rearward and lateral forces. Side-thrust wear pads allow for periodic adjustment for lateral clearances. The high strength steel rolled mast channels resist flaring of the mast channel. Wide hook-type carriages are standard (Pin type available), provide good visibility, allowing the fitting of a wide variety of forks and attachments.

Options

- Sideshifting fork positioner carriage
- Accumulator
- Keyless start (with auxillary key) switch)
- Return-to-set tilt
- Integral operator's cab
- Swivel, full air-suspension vinyl and cloth seats
- Foot directional control pedal
- Operator password
- Alarm reverse actuated 82-102 dB(A) - self adjusting
- Pedestrian Awareness Light
- LED amber strobe light keyswitch activated
- Solid, radial and non-marking tyres
- 3/4/5 function (1/2/3 aux.) hydraulic control valve
- 5° forward/6° backward tilt
- Fire extinguisher
- Lifting eyes
- Yale Vision telematics package feature a number of safety systems beyond those normally found on forklift trucks, including impact monitoring, GPS tracking and usage reporting
- Dual-pedal
- Reversing camera
- Charger.

Yale Europe Materials Handling

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