



# ERP70-90VNL

SPEC SHEET

7,000 - 9,000 kg

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VNL Series

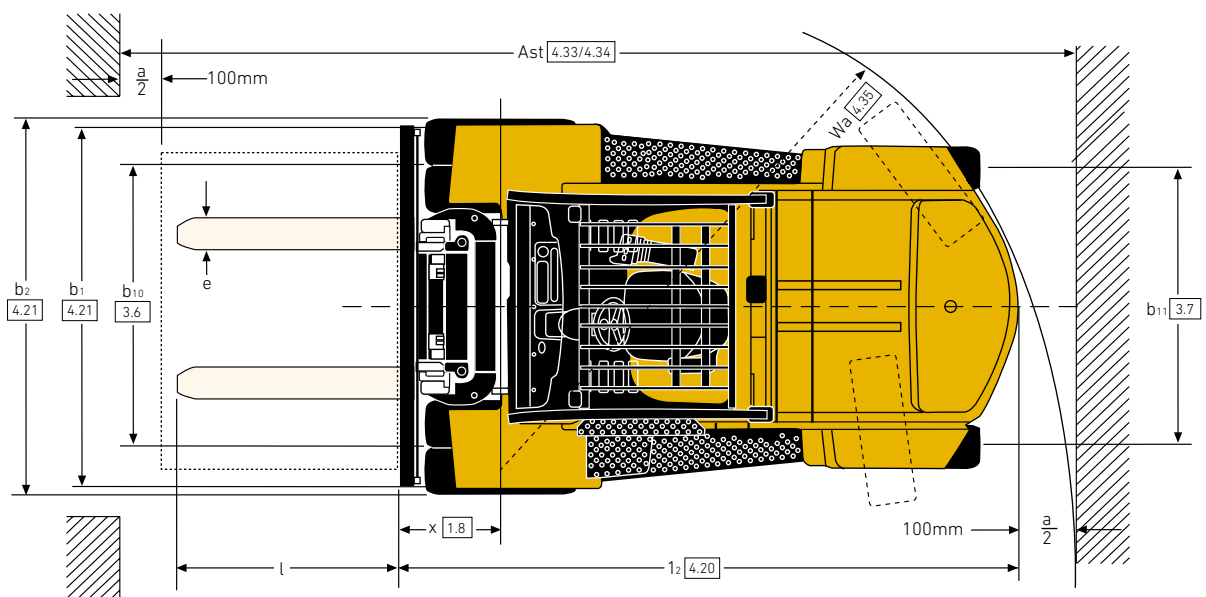
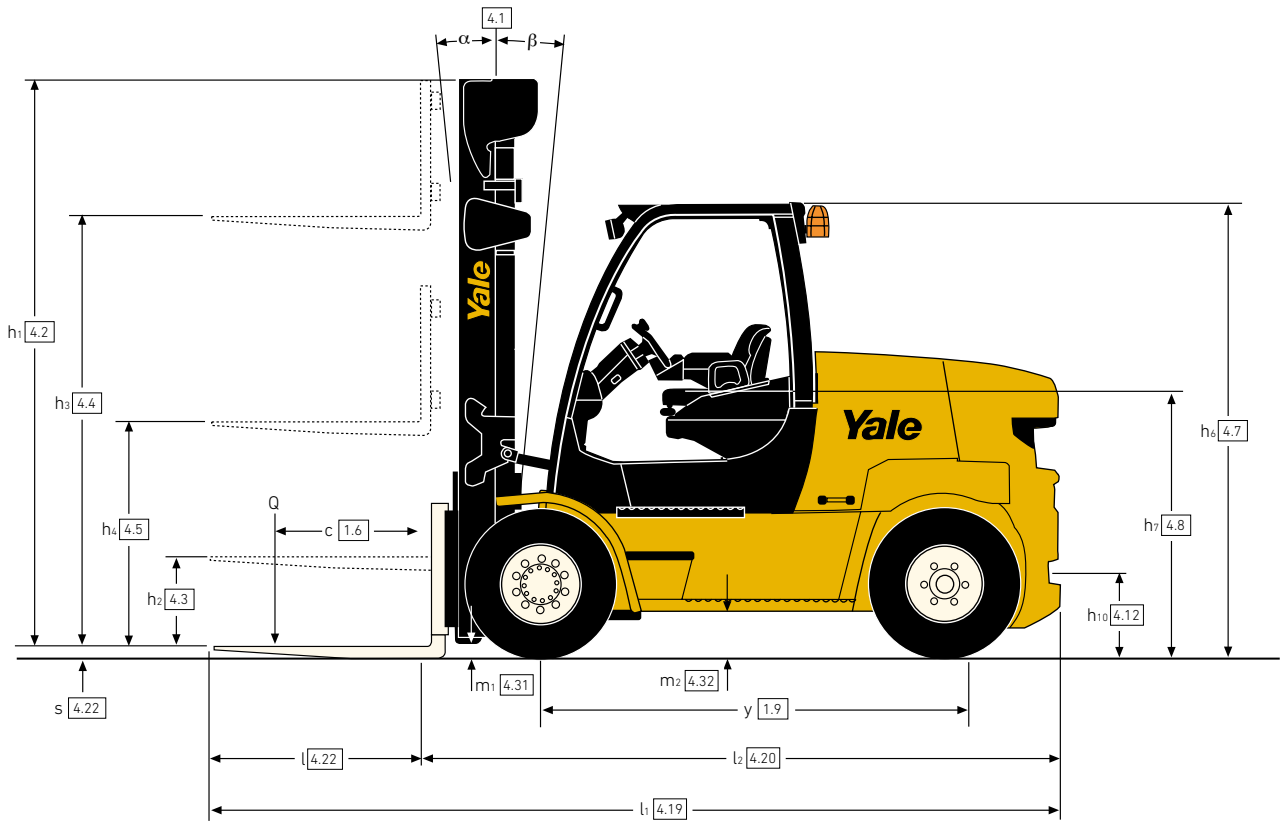
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Electric Forklift Trucks



# TRUCK DIMENSIONS – VNL SERIES

$$A_{st} = Wa + R + a = Wa + ((\sqrt{l_6 + x})^2 + (b_{12}/2 - b_{13})^2) + a$$



## VDI 2198 – GENERAL SPECIFICATIONS – VNL SERIES

		Yale			
		ERP 70SVNL	ERP 70SVNL9	ERP 80SVNL	
<b>GENERAL</b>	1.1	Manufacturer			
	1.2	Model designation			
	1.3	Drive	Electric (battery)		
	1.4	Operation	Seated		
	1.5	Rated load/rated capacity	7000		
	1.6	Load centre distance	600	900	8000
	1.8	Load distance, centre to drive axle to fork	609	614	
	1.9	Wheelbase	2235	2235	
	<b>WEIGHT</b>	2.1	Service weight (max. battery)	10902	
2.2		Axle loading, laden front/rear (max. battery)	15193 / 2710	16583 / 2396	17187 / 2793
2.3		Axle loading, unladen front/rear (max. battery)	4406 / 2496	4843 / 7136	4843 / 7136
<b>TYRES</b>	3.1	Tyres front/rear	Pneumatic		
	3.2	Tyre size, front	8.25 x 15 14PR		
	3.3	Tyre size, rear	8.25 x 15 14PR		
	3.5	Number of wheels, front/rear (x = driven)	4X/2		
	3.6	Tread, front, standard/wide tread	b <sub>10</sub> (mm) 1847		
	3.7	Tread, rear	b <sub>11</sub> (mm) 1536		
	<b>DIMENSIONS</b>	4.1	Tilt of mast/fork carriage, forward / backward	(°) 5 / 10 5 / 9	
4.2		Height, mast lowered <sup>(1)</sup>	h <sub>1</sub> (mm) 2540 2712		
4.3		Free lift <sup>(1)</sup>	h <sub>2</sub> (mm) 100		
4.4		Lift <sup>(1)</sup>	h <sub>3</sub> (mm) 2940 3000		
4.5		Height, mast extended <sup>(2)</sup>	h <sub>4</sub> (mm) 4040 4225		
4.7		Height to top of overhead guard <sup>(3)</sup>	h <sub>6</sub> (mm) 2531		
4.7.1		Height to top of cab	h <sub>6</sub> (mm) 2549		
4.8		Seat height relating to SIP	h <sub>7</sub> (mm) 1547		
4.19		Overall length	l <sub>1</sub> (mm) 4695 4770		
4.20		Length to face of forks	l <sub>2</sub> (mm) 3495 3570		
4.21		Overall width	b <sub>1</sub> /b <sub>2</sub> (mm) 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	IVA		
4.24		Fork carriage width	b <sub>3</sub> (mm) 1980 2030		
4.31		Ground clearance, laden, below mast <sup>(1)</sup>	m <sub>1</sub> (mm) 125 175		
4.32		Ground clearance, at centre of wheelbase	m <sub>2</sub> (mm) 246		
4.33		Load dimensions b <sub>12</sub> x l <sub>6</sub> crossways	b <sub>12</sub> x l <sub>6</sub> (mm) 1000 x 1200		
4.34		Aisle width with predetermined load dimensions <sup>(10)</sup>	A <sub>st</sub> (mm) 4889 4959		
4.34.1		Aisle width with pallets 800 wide x 1200 long <sup>(10)</sup>	A <sub>st</sub> (mm) 5089 5159		
4.35		Turning radius	W <sub>a</sub> (mm) 3080 3145		
4.36		Internal turning radius <sup>(6)</sup>	b <sub>13</sub> (mm) -90		
<b>PERFORMANCE</b>	5.1	Travel speed laden/unladen <sup>(5)</sup>	km/h 24.0 / 24.0		
	5.1.1	Travel speed laden/unladen, backwards <sup>(5)</sup>	km/h 24.0 / 24.0		
	5.2	Lift speed laden/unladen <sup>(5)</sup>	m/sec 0.43 / 0.66 0.41 / 0.46 0.40 / 0.46		
	5.3	Lowering speed laden/unladen	m/sec 0.58 / 0.53 0.41 / 0.37		
	5.5	Drawbar pull laden/unladen, @ 1.6km/hr <sup>(5)</sup>	N 48871 / 25907 48871 / 28506		
	5.6	Max. drawbar pull laden/unladen	N 49547 / 25907 49547 / 28506		
	5.7	Gradeability laden/unladen, @ 1.6km/hr <sup>(5)</sup>	% 30 / 24 28 / 24 26 / 24		
	5.8	Max. gradeability laden/unladen <sup>(5)</sup>	% 30 / 24 28 / 24 27 / 24		
	5.9	Acceleration time, laden/unladen (to 30m) <sup>(5)</sup>	sec 9.15 / 8.76 - / -		
	5.10	Service brake	Hydraulic		
<b>ELECTRIC</b>	6.1	Drive motor rating S2 60min	kW 45		
	6.2	Lift motor rating at S3 15%	kW 60.0		
	6.3	Battery according to DIN 43531/35/36 A, B, C, no	No		
	6.4	Battery voltage/nominal capacity <sup>(8)</sup>	V/Ah 350 / 192		
	6.5	Battery weight	kg 664		
	6.6	Energy consumption in accordance with VDI cycle	kWh/h 18.9 -		
	6.7	Turnover output	t/h -		
	6.8	Energy consumption at turnover output	kWh in 1h (kWh/h) -		
<b>OTHER</b>	10.1	Operating pressure for attachments	bar 173		
	10.2	Oil volume for attachments	l/min 92.7		
	10.7	Sound pressure level at drivers seat (With/without Cab) <sup>(9)</sup>	dB(A) LPAZ 68 / 67		
	10.7.1	Sound power level during workcycle	dB LWAZ -		
	10.7.2	Guaranteed Sound Power 2001/14/EC	dB LWAZ -		
	10.8	Towing coupling type	Pin		

(1) For standard 2 stage LFL mast configuration

(2) Without Load Backrest

(3) Overhead guard only, no cab

(4) Under mast channels

(5) Extended shift off (max. performance)

(6) 7T @ 6, 7T @ 9 and 8T @ 6 capacities shown with BTA

(7) Integrated Li-Ion Battery does not conform to standard DIN battery box dimensions

(8) Nominal values

(9) With cab values from 9T, without cab values from 7T

(10) Includes 200mm aisle clearance

## VDI 2198 – GENERAL SPECIFICATIONS – VNL SERIES

		Yale		
		ERP 80VNL9	ERP 90VNL	
<b>GENERAL</b>	1.1	Manufacturer		
	1.2	Model designation		
	1.3	Drive	Electric (battery)	
	1.4	Operation	Seated	
	1.5	Rated load/rated capacity	8000	9000
	1.6	Load centre distance	900	
	1.8	Load distance, centre to drive axle to fork	663.5	613.5
	1.9	Wheelbase	2450	
	<b>WEIGHT</b>	2.1	Service weight (max. battery)	12265
2.2		Axle loading, laden front/rear (max. battery)	18428 / 1836	18440 / 2083
2.3		Axle loading, unladen front/rear (max. battery)	5323 / 6942	4983 / 6541
<b>TYRES</b>	3.1	Tyres front/rear	Pneumatic	
	3.2	Tyre size, front	8.25 x 15 14PR	
	3.3	Tyre size, rear	8.25 x 15 14PR	
	3.5	Number of wheels, front/rear (x = driven)	4X/2	
	3.6	Tread, front, standard/wide tread	2003	
	3.7	Tread, rear	1536	
	<b>DIMENSIONS</b>	4.1	Tilt of mast/fork carriage, forward / backward	(°) 5 / 9
4.2		Height, mast lowered <sup>(1)</sup>	3462	2712
4.3		Free lift <sup>(1)</sup>	0	
4.4		Lift <sup>(1)</sup>	4500	3000
4.5		Height, mast extended <sup>(2)</sup>	5899	4225
4.7		Height to top of overhead guard <sup>(3)</sup>	2531	
4.7.1		Height to top of cab	2549	
4.8		Seat height relating to SIP	1558	1547
4.19		Overall length	5238	
4.20		Length to face of forks	4038	
4.21		Overall width	2239 / 1771	
4.22		Fork dimensions ISO 2331	65 / 200 / 1200	
4.23		Fork carriage ISO 2328, class/type, A/B	IVA	
4.24		Fork carriage width	2030	
4.31		Ground clearance, laden, below mast <sup>(1)</sup>	175	
4.32		Ground clearance, at centre of wheelbase	253	
4.33		Load dimensions b <sub>12</sub> x l <sub>6</sub> crossways	1000 x 1200	
4.34		Aisle width with predetermined load dimensions <sup>(10)</sup>	5658	5537
4.34.1		Aisle width with pallets 800 wide x 1200 long <sup>(10)</sup>	5858	5737
4.35		Turning radius	3794	
4.36		Internal turning radius <sup>(6)</sup>	362	
<b>PERFORMANCE</b>	5.1	Travel speed laden/unladen <sup>(5)</sup>	21.0 / 21.0	
	5.1.1	Travel speed laden/unladen, backwards <sup>(5)</sup>	21.0 / 21.0	
	5.2	Lift speed laden/unladen <sup>(5)</sup>	0.32 / 0.41	0.36 / 0.46
	5.3	Lowering speed laden/unladen	0.38 / 0.33	
	5.5	Drawbar pull laden/unladen, @ 1.6km/hr <sup>(5)</sup>	48933 / 31331	48933 / 29330
	5.6	Max. drawbar pull laden/unladen	49430 / 31331	49430 / 29330
	5.7	Gradeability laden/unladen, @ 1.6km/hr <sup>(5)</sup>	26 / 26	
	5.8	Max. gradeability laden/unladen <sup>(5)</sup>	26 / 26	
	5.9	Acceleration time, laden/unladen (to 30m) <sup>(5)</sup>	8.88 / 7.69	- / -
	5.10	Service brake	Hydraulic	
<b>ELECTRIC</b>	6.1	Drive motor rating S2 60min	45	
	6.2	Lift motor rating at S3 15%	60.0	
	6.3	Battery according to DIN 43531/35/36 A, B, C, no	No	
	6.4	Battery voltage/nominal capacity <sup>(8)</sup>	350 / 192	
	6.5	Battery weight	664	
	6.6	Energy consumption in accordance with VDI cycle	20.6	-
	6.7	Turnover output	-	
	6.8	Energy consumption at turnover output	-	
<b>OTHER</b>	10.1	Operating pressure for attachments	173	
	10.2	Oil volume for attachments	92.7	
	10.7	Sound pressure level at drivers seat (With/without Cab) <sup>(9)</sup>	68 / 67	
	10.7.1	Sound power level during workcycle	-	
	10.7.2	Guaranteed Sound Power 2001/14/EC	-	
	10.8	Towing coupling type	Pin	

Spec sheet truck based on: Standard Seat Standard Overhead Guard Extended Shift on 2 stage LFL Mast:  
 7T: 2940mm bottom of forks, standard  
 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.**

## MAST DIMENSIONS – ERP 70SVNL

Maximum Fork Height (Top of Forks) (mm)	Overall Lowered height (mm)	Overall Extended height (mm)		Free lift height (Top of Forks) (mm)	Back Tilt	Without Sideshift	With Integral Sideshift	With Hang-on Sideshift and Fork Positioner
		With LBR	Without LBR			600mm Load centre (kg)		
<b>2-Stage Limited Free-Lift (LFL) Mast</b>								
3000	2516	4417	100	10		7000	6830	6500
3400	2716	4817	100	10		7000	6810	6490
4400	3216	5817	100	10		7000	6770	6450
5400	3716	6817	100	10		7000	6730	6420
6000	4116	7417	100	10		6830	6530	6230
<b>3-Stage Full Free-Lift (FFL) Mast</b>								
4700	2576	6118	1425	6		7000	6510	6210
5600	2876	7018	1725	6		6920	6410	6120
6200	3126	7618	1975	6		6750	6210	5930

**Note:** To calculate truck capacities with alternative truck specifications to the ones shown in the above tables, please use the WWRP software.

## MAST DIMENSIONS – ERP 70SVNL9, ERP 80SVNL, ERP 90VNL

Maximum Fork Height (Top of Forks) (mm)	Overall Lowered height (mm)	Overall Extended height (mm)		Free lift height (Top of Forks) (mm)	Back Tilt	Without Sideshift			
		With LBR	Without LBR			Capacity at max. height, 600mm Load centre (kg)			
						ERP 70SVNL9 F80 Mast	ERP 80SVNL F80 Mast	ERP 80VNL9 F90 Mast	ERP 90VNL F80 Mast
<b>2-Stage Limited Free-Lift (LFL) Mast</b>									
3065	2712	4350	0	9		7000	8000	8000	9000
3565	2962	4850	0	9		7000	8000	8000	9000
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
<b>3-Stage Full Free-Lift (FFL) Mast</b>									
4615	2702	6077	1565	6		7000	8000	8000	9000
5515	3002	6977	1865	6		7000	8000	7760	8820
5965	3152	7427	2015	6		6950	7940	7630	8270

**Note:** To calculate truck capacities with alternative truck specifications to the ones shown in the above tables, please use the WWRP software.

## MAST DIMENSIONS – ERP 70SVNL9, ERP 80SVNL, ERP 90VNL

Maximum Fork Height (Top of Forks) (mm)	Overall Lowered height (mm)	Overall Extended height (mm)		Free lift height (Top of Forks) (mm)	Back Tilt	With carriage + Sideshift			
		With LBR	Without LBR			Capacity at max. height, 600mm Load centre (kg)			
						ERP 70SVNL9 F80 Mast	ERP 80SVNL F80 Mast	ERP 80VNL9 F90 Mast	ERP 90VNL F80 Mast
<b>2-Stage Limited Free-Lift (LFL) Mast</b>									
3065	2712	4350	0	9		6600	8000	7600	8500
3565	2962	4850	0	9		6590	8000	7590	8490
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
<b>3-Stage Full Free-Lift (FFL) Mast</b>									
4615	2702	6077	1565	6		6580	8000	7570	8500
5515	3002	6977	1865	6		6560	8000	7320	8310
5965	3152	7427	2015	6		6510	7940	7180	7780

**Note:** To calculate truck capacities with alternative truck specifications to the ones shown in the above tables, please use the WWRP software.

## MAST DIMENSIONS – ERP 70SVNL9, ERP 80SVNL, ERP 90VNL

Maximum Fork Height (Top of Forks) (mm)	Overall Lowered height (mm)	Overall Extended height (mm)		Free lift height (Top of Forks) (mm)	Back Tilt	With carriage + Sideshift			
		With LBR	Without LBR			Capacity at max. height, 600mm Load centre (kg)			
						ERP 70SVNL9 F80 Mast	ERP 80SVNL F80 Mast	ERP 80VNL9 F90 Mast	ERP 90VNL F80 Mast
<b>2-Stage Limited Free-Lift (LFL) Mast</b>									
3065	2712	4350	0	9		6560	8000	7580	8460
3565	2962	4850	0	9		6550	8000	7560	8440
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
<b>3-Stage Full Free-Lift (FFL) Mast</b>									
4615	2702	6077	1565	6		6560	8000	7550	8470
5515	3002	6977	1865	6		6540	8000	7290	8280
5965	3152	7427	2015	6		6480	7940	7150	7750

**Note:** To calculate truck capacities with alternative truck specifications to the ones shown in the above tables, please use the WWRP software.

## MAST DIMENSIONS – ERP 80VNL9

Maximum Fork Height (Top of Forks) (mm)	Overall Lowered height (mm)	Overall Extended height (mm)	Free lift height (Top of Forks) (mm)	Back Tilt
		With LBR	Without LBR	
<b>2-Stage Limited Free-Lift (LFL) Mast</b>				
3065	2712	4398	0	9
3565	2962	4898	0	9
4565	3462	5898	0	9
5565	3962	6898	0	9
6065	4212	7398	0	9
<b>3-Stage Full Free-Lift (FFL) Mast</b>				
4615	2712	6125	1405	6
5515	3012	7025	1705	6
5965	3162	7475	1855	6

**Note:** To calculate truck capacities with alternative truck specifications to the ones shown in the above tables, please use the WWRP software.

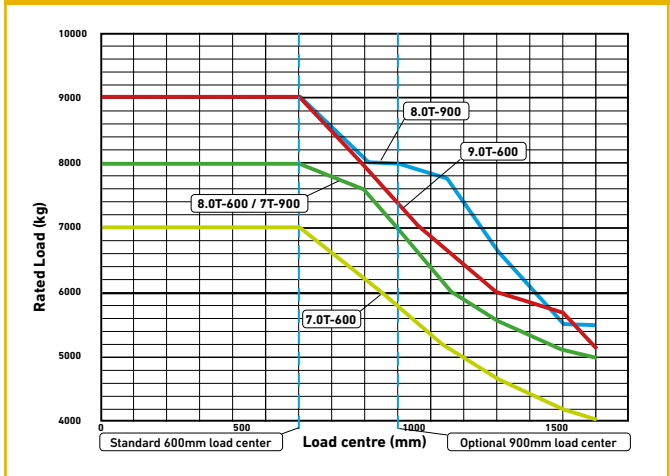
### TRUCK CONFIGURATION

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
2030mm Standard Hook Carriage with Load Backrest (7T @ 9, 8-9T capacity)
1980mm Standard Hook Carriage with Load Backrest (7T capacity)

### THE RATINGS ARE COMPUTED USING FORK LENGTHS AS BELOW:

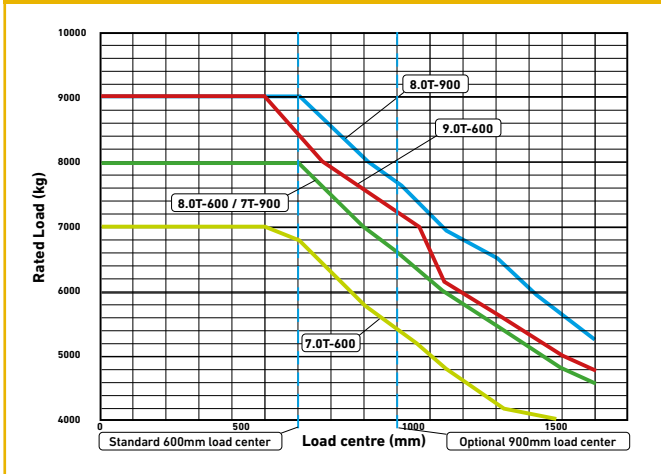
	Load Centre (mm)	Fork Length (mm)
All models	500 to 700	1200
	Over 700 to 1000	1500
	Over 1000 to 1200	1800
	Over 1200	2400

### RATED LOAD VS. LOAD CENTER – HOOK CARRIAGE



**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.

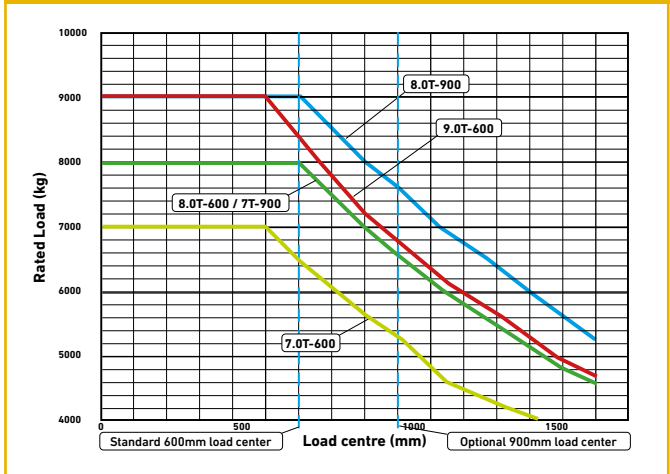
### RATED LOAD VS. LOAD CENTER – INTEGRAL SIDESHIFT



**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.

All values are nominal values and they are subject to tolerances.

### RATED LOAD VS. LOAD CENTER – INTEGRAL SIDESHIFT FORK POSITIONER



\*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.



# About Yale®

Yale Materials Handling Corporation is one of the oldest manufacturers of lift trucks in the world. We've been in the business of lifting since 1875 and we apply that experience to help customers solve materials handling challenges. Our full line of lift trucks range in capacity from 1 to 16 tonne and are powered by internal combustion engines or electric options. Yale also offers robotic solutions, telemetry, fleet management, parts, financing and training. From traditional lift truck equipment to emerging technologies, our goal, every day, is to work with our nationwide dealer network to continually improve and provide the solutions you need, when and how you need them.

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- Beverage
- Cold & Frozen Foods
- Food Distribution
- Food Processing
- Furniture & Furnishings
- Health & Pharma
- Home Centres
- Retail
- E-Commerce

## Yale Lift Truck Technologies


Centennial House  
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**Notice:** Care must be exercised when handling elevated loads. Operators must be trained and must read, understand and follow the instructions contained in the Operating Manual. Consult your Yale® Dealer if any of the information shown is critical to your application.

Publication part no. 220991900 Rev.00 (0323DMS) EN