

# NR-EA/NDR-EA Reach Trucks

3,000 • 3,500 • 4,000 • 4,500 lbs

**Yale® NR/NDR-EA** reach trucks combine the latest technology with improved performance to effectively meet the demands of high density warehousing.

**Operator's compartment** features a new movement forward in ergonomic design. The NR/NDR-EA offers two (2) operator compartments, the side-stance and the fore/aft stance compartments. The fully padded operator's compartment provides back and hip support. The noticeable non-pedal large floor has room for movement and is equipped with an Operator Presence Switch.

**The side stance** operator compartment has a large backrest pad with integral lumbar and armrest support. Mounted to the armrest pad is the multi-function control assembly. The multi-function control assembly is adjustable 3 inches in and out. The control handle is ergonomically designed with an integral palm rest and can be comfortably operated. The handle provides conveniently located controls for forward/reverse, lift/lower, 2-speed reach/retract, tilt, horn and optional sideshift.

**The fore/aft stance** compartment provides a support point for the operator when facing in either direction. The multi-function handle assembly is a new single axis design and is mounted on the side pad assembly. The single axis design provides additional dynamic support point for operator when facing forward. The optional Aft Travel Control Handle with Laser Operator Detection provides speed & direction control when the operator is facing aft.

**CANbus Technology** streamlines digital communications between truck systems through one main master controller. Dash display and traction controller are controlled via the CANbus network. The CANbus controller reduces wiring and electrical connections, resulting in improved reliability and improved visibility through the mast.

**AC Motors** include traction and main hydraulics. AC motor technology delivers high motor efficiency, braking torques, and powerful acceleration. A speed sensor built into the motor provides feedback to the

control system, allowing motor speed and direction to be continuously monitored. A thermal protection system controls the power delivered to the motor. In addition, increased motor maintenance interval is achieved through the brushless design of the auxiliary hydraulics and steer motors.

**Drive unit** uses a double gear reduction drive train with permanently lubricated steer bearing.

**Yale Hi-Vis mast** is available in triplex configurations for various heights. The trunnion mounted mast design provides for good load distribution and allows for easy service. The hydraulic cylinder incorporates a chrome plated rod for corrosion resistance. The cylinders are easily serviced and provide integral cushioning for excellent mast channel staging. Velocity fuses are provided to control lowering in the event of hydraulic failure. A manual lowering valve is standard.

**Brake** is spring applied and electrically released. Mounted above the drive motor and controlled by the Vehicle System Manager (VSM), the assembly provides emergency stopping and parking brake for the truck.

**Vehicle System Manager (VSM)** is an electronic module that monitors all truck functions. The VSM is the CANbus network master node and includes the vehicle application software. Built with input/output capability, the system monitors inputs from the operator, vehicle performance and simultaneously adjusting the vehicle operation for the best performance.

**Dash display** Two dash displays are offered with the truck, the standard display and the premium display. The standard display provides status, warning, and fault messages to the operator. The display has input for operator to change drive mode from rabbit through turtle. It also provides setup and diagnostic menus for service technician. Hour meters for truck, traction, hoist, and auxiliary systems are also accessible through the menus. The optional premium display has all the same features as the standard display. In addition, the display provides larger text output, an integrated operator check list and maintenance reminder.

**Console covers** are thermally formed. The covers are easy to remove, providing access to main electrical components.

**Reach mechanism** includes strong rear frame weldment and inner arm weldment cross-members. The open carriage design and optimal hose routing provide good visibility. The two speed reach/retract cylinders are fully cushioned for smooth operation. Non-filled points have grease fittings for lubrication. Dual tilt cylinders are used to evenly distribute the load.

**Hydraulic** functions of the truck are managed by the VSM. The system employs an electro-hydraulic system which provides low noise, low heat and speed adjustment. Lift speed is adjusted by varying

	CAPACITY			
NR	—	3500	4000	4500
NDR	3000	3500*	—	—

\* 3500 lb @ 24" fork height. (Shuttle & transport application)

motor speed rather than opening a proportional valve. Lowering function is provided via regenerative lowering. Efficient design and the use of O-ring face seals have allowed significant reduction of hydraulic fittings reducing potential leak points. The hydraulic fluid reservoir is baffled to prevent foaming and is located away from the operator for heat reduction. A strainer and 10 micron spin-on filter are standard.

**Frame** features a fixed drive unit mounting with spring loaded caster assembly to compensate for uneven floors. It also incorporates thick plates, strong rear frame, and mast connections for enhanced durability. The frame is available in various battery compartment sizes based on truck capacity. The frame is available in 14.5 inches and 16.5 inches for the 3500 lb. and 4000 lb. trucks. The 16.5, 18.5 and 21.5 inch battery compartments are available for the 4500 lb. models.

**All wiring** is numbered for easy trouble-shooting and meets the UL 583 requirements. Sealed electrical connectors are used throughout the truck. Electrical connections are provided for convenient field installation of electric options.

**Additional features** include a bolt-on 36 inch (910 mm) high load backrest extension and 42 inch (1067 mm) long hook type forks as standard. All non-sealed friction points are equipped with grease fittings. The truck is painted gold, parchment, and black.

## Options

- Auto Fork Leveling
- Fork Height Display
- Fork Camera
- Shelf Height Selector
- Audible Alarm
  - Reverse Operated
  - Forward and Reverse Operation
  - Forward/Reverse and Lift/Lower Operation
- Visible Alarm
  - Amber Strobe (Continuous operation with Key-on)
  - Amber Strobe (Forward and Reverse Operation)
- Lights
  - Operator Desktop LED Light (OHG Mounted)
  - Dual Headlight 12 Volt (OHG Mounted)
  - Rear Worklight 12 Volt (OHG Mounted)
- Operator Compartment Rear Door
- Various Fork Lengths
- Various I.D. Outriggers
- Operator Overhead Fan
- Cooler/Freezer and Sub Zero Packages
- Sideshifter (Standard on the Double Reach)
- Various Load Wheels and Drive Tires
- Steer Caster – Electrically Steered
- Side Stance With Comfort Package
- Fore/Aft/Stance With Comfort Package
- Load weight display



Truck shown with optional equipment



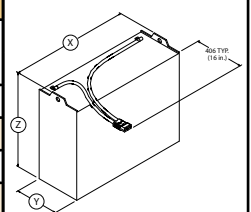
**MAST TABLES**

<b>NRO35-040EA &amp; NDR030EA - TRIPLEX HI-VIS MAST (5.5" STANDARD)</b>															
Overall Lowered Height		Fork Height Top of Forks		Free Lift		Overall Height (Mast Extended) Highest Point with 36" High LBR		Overhead Guard Height to Top		Operator Clearance		Head Length (Length to Face of Forks)			
												14.5" B.C.		16.5" B.C.	
in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	Single Reach	Double Reach	Single Reach	Double Reach
87	2210	191	4851	48	1219	230	5842	86.5	2197	75.3	1913	52.12	58.02	54.12	60.02
91	2311	203	5156	52	1321	242	6147	90.5	2299	79.3	2014	52.12	58.02	54.12	60.02
95	2413	212	5385	56	1422	251	6375	94.5	2400	83.3	2116	52.12	58.02	54.12	60.02
101	2565	227	5766	62	1575	266	6756	91	2311	79.8	2027	52.12	58.02	54.12	60.02
107	2718	242	6147	68	1727	281	7137	91	2311	79.8	2027	52.12	58.02	54.12	60.02
110	2794	251	6375	71	1803	290	7366	91	2311	79.8	2027	52.12	58.02	54.12	60.02
119	3023	272	6909	80	2032	311	7899	91	2311	79.8	2027	52.12	58.02	54.12	60.02

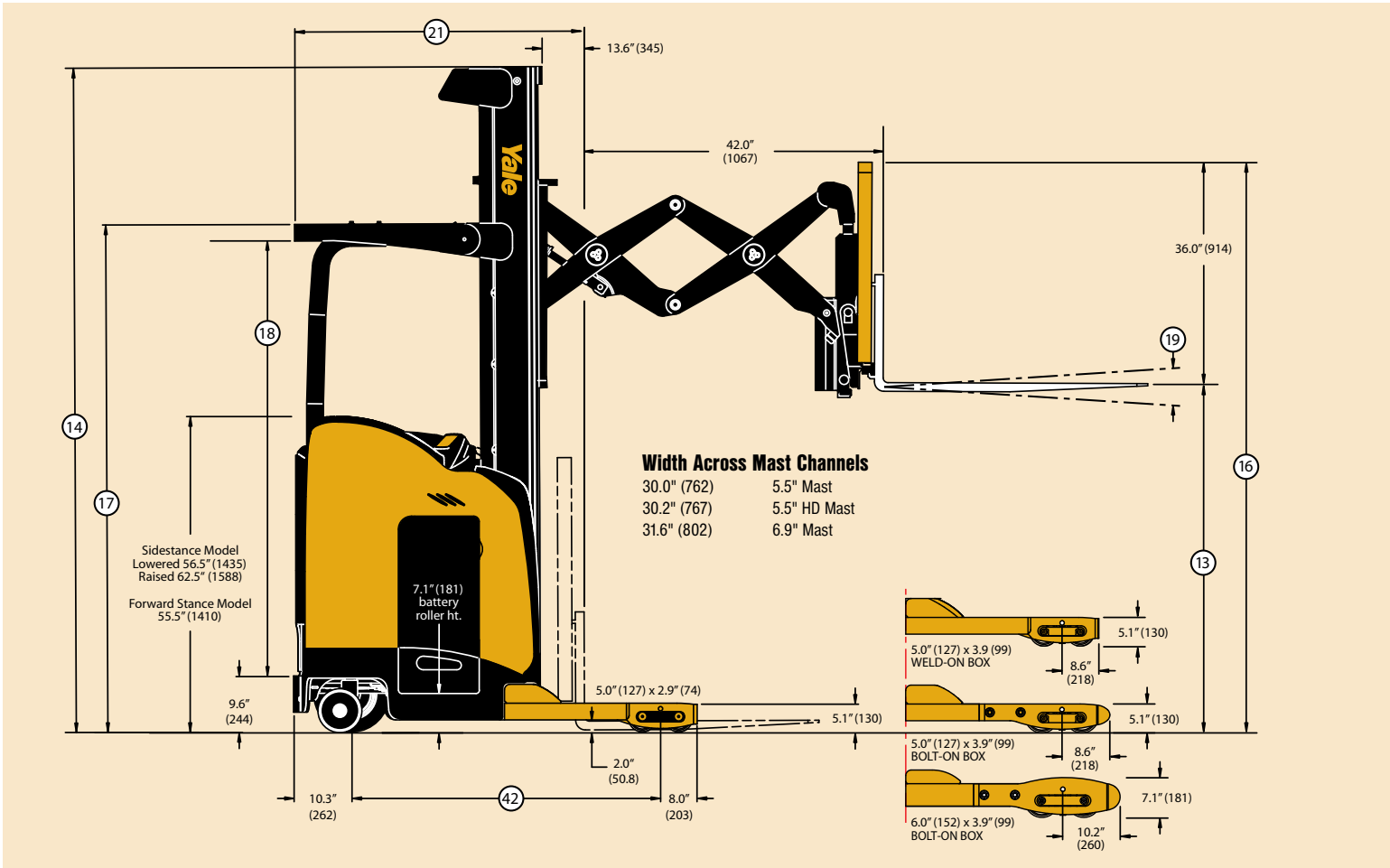
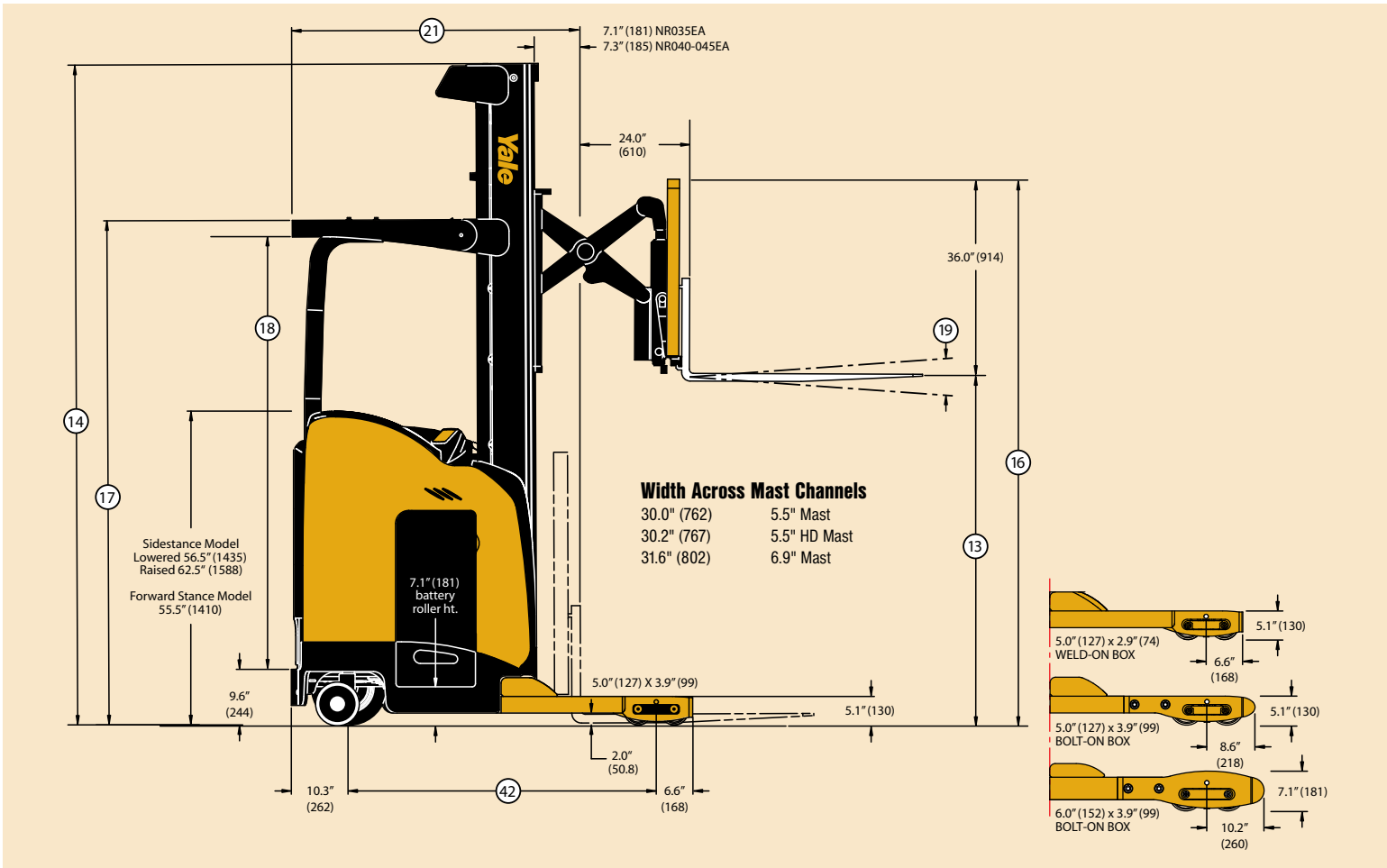
<b>NRO45EA &amp; NDR035EA - TRIPLEX HI-VIS MAST (5.5" HEAVY DUTY)</b>																			
Overall Lowered Height		Fork Height Top of Forks		Free Lift		Overall Height (Mast Extended) Highest Point w/36" High LBR		Overhead Guard Height to Top		Operator Clearance		Head Length (Length to Face of Forks)							
												14.5" B.C.		16.5" B.C.		18.5" B.C.		21.5" B.C.	
in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	Single Reach	Double Reach	Single Reach	Double Reach	Single Reach	Double Reach	Single Reach	Double Reach
95	2413	212	5385	56	1422	251	6375	94.5	2400	83.3	2116	55.47	61.38	57.47	63.38	59.47	65.38	62.47	68.38
101	2565	224	5690	62	1575	263	6680	91	2311	79.8	2027	55.47	61.38	57.47	63.38	59.47	65.38	62.47	68.38
107	2718	239	6071	68	1727	278	7061	91	2311	79.8	2027	55.47	61.38	57.47	63.38	59.47	65.38	62.47	68.38
110	2794	245	6223	71	1803	284	7214	91	2311	79.8	2027	55.47	61.38	57.47	63.38	59.47	65.38	62.47	68.38
119	3023	266	6756	80	2032	305	7747	91	2311	79.8	2027	55.47	61.38	57.47	63.38	59.47	65.38	62.47	68.38
125	3175	278	7061	86	2184	317	8052	91	2311	79.8	2027	55.47	61.38	57.47	63.38	59.47	65.38	62.47	68.38
131	3327	293	7442	92	2337	332	8433	91	2311	79.8	2027	55.47	61.38	57.47	63.38	59.47	65.38	62.47	68.38

<b>NRO45EA &amp; NDR035EA - TRIPLEX HI-VIS MAST (6.9")</b>																	
Overall Lowered Height		Fork Height Top of Forks		Free Lift		Overall Height (Mast Extended) Highest Point w/36" High LBR		Overhead Guard Height to Top		Operator Clearance		Head Length (Length to Face of Forks)					
												16.5" B.C.		18.5" B.C.		21.5" B.C.	
in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	Single Reach	Double Reach	Single Reach	Double Reach	Single Reach	Double Reach
119	3023	272	6909	80	2032	311	7899	91	2311	79.8	2027	57.59	63.50	59.60	65.50	62.59	68.50
125	3175	287	7290	86	2184	326	8280	91	2311	79.8	2027	57.59	63.50	59.60	65.50	62.59	68.50
131	3327	302	7671	92	2337	341	8661	91	2311	79.8	2027	57.59	63.50	59.60	65.50	62.59	68.50
138	3505	320	8128	99	2515	359	9119	91	2311	79.8	2027	57.59	63.50	59.60	65.50	62.59	68.50
143	3632	332	8433	104	2642	371	9423	91	2311	79.8	2027	57.59	63.50	59.60	65.50	62.59	68.50
146	3708	341	8661	107	2718	380	9652	91	2311	79.8	2027	57.59	63.50	59.60	65.50	62.59	68.50
157	3988	368	9347	118	2997	407	10338	91	2311	79.8	2027	57.59	63.50	59.60	65.50	62.59	68.50
170	4318	401	10185	131	3327	440	11176	91	2311	79.8	2027	57.59	63.50	59.60	65.50	62.59	68.50
179	4547	422	10719	140	3556	461	11709	91	2311	79.8	2027	57.59	63.50	59.60	65.50	62.59	68.50

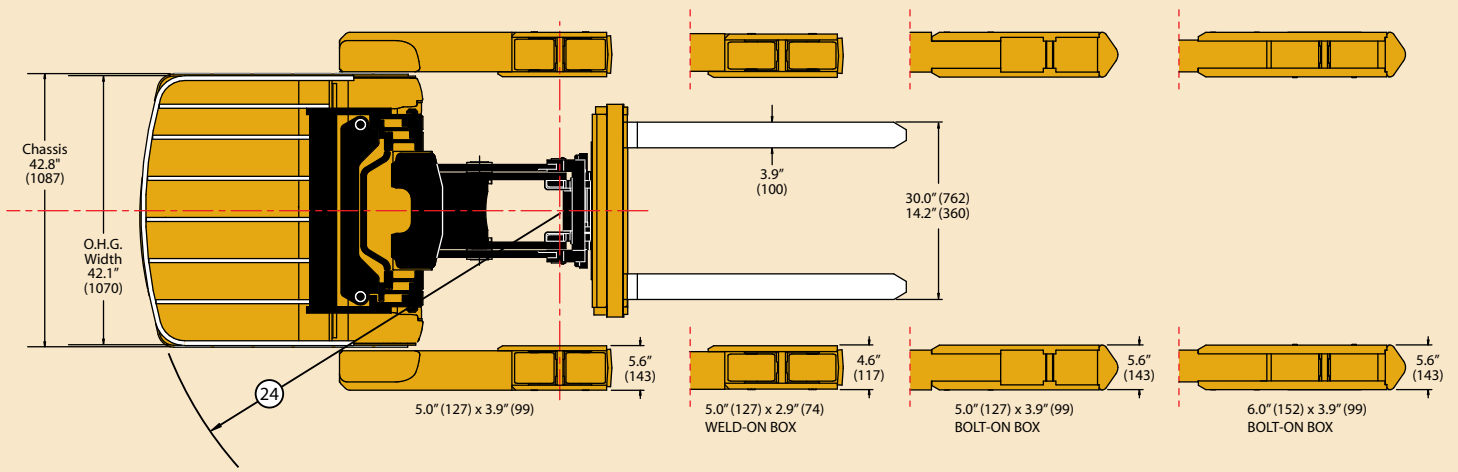
<b>BATTERY SPECIFICATIONS</b>									
Battery Compartment Size	Battery Voltage	Capacity 6 Hour Rate		Battery Dimensions			Min Batt Weight	Max Batt Weight	
				"X" Max.	"Y" Max.	"Z" Max.			
		amp hr	kw hr	in. (mm)	in. (mm)	in. (mm)	lb. (kg)	lb. (kg)	
14.5"	36	775	27.2	38.8 (985)	14.25 (362)	31.0 (788)	1600 (726)	2100 (953)	
16.5"	36	930	32.6	38.8 (985)	16.25 (413)	31.0 (788)	1850 (839)	2350 (1066)	
18.5"	36	1085	38.1	38.8 (985)	18.25 (464)	31.0 (788)	2200 (998)	2800 (1270)	
21.5"	36	1240	43.5	38.8 (985)	21.25 (540)	31.0 (788)	2500 (1134)	3100 (1406)	



Battery Connector: 36V - Gray; Position "B"      Manufacturers Standard Cable Size Not to Exceed 4/0 AWG  
 Battery compartment is designed to accommodate standard wet cell batteries with fixed lifting eyes and no cover.  
 Contact Applications Engineering to verify compatibility/fit when using maintenance free, covered or non-standard batteries.



Circled dimensions correspond to the line numbers on the tabulated chart inside the spec sheet. Dimensions are in inches (millimeters).

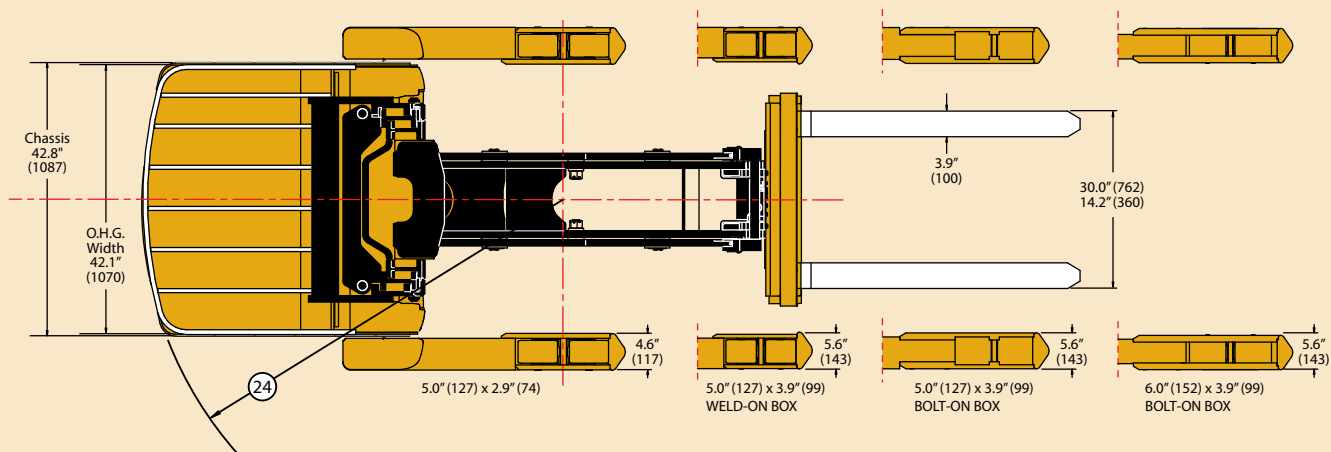


GENERAL	1	Manufacturer	Manufacturer's Name	
	2	Model Designation	Manufacturer's Model Designation	
	3	Model Configuration	Wheel Base Designation <sup>2</sup>	
	4	Rated Capacity	Load Capacity	lbs.
	5	Load Center	Distance	in.
	6	Power type	Electric, Diesel, LPG	
	7	Operator type	Pedestrian, Stand, Seated Rider	
	8	Tire type	Load / Caster / Drive	
	9	Wheels (x = driven)	Load / Drive	
WT.	10	Truck Weight	without Battery (approximate)	lbs.
	11	Axle Loading - Front / Rear with Assembly Retracted		
	12		Static with Rated Load and Max. Wt. Battery	lbs.
	13		Standard Lift (Max Fork Height)	in. (mm)
	14		Standard Mast Lowered (OALH)	in. (mm)
	15	Mast Triplex Hi-Vis	Freelift (Max Fork Height)	in. (mm)
	16		Standard Mast Extended w/ LBR	in. (mm)
	17		Top of OHG	in. (mm)
	18		Operator Clearance	in. (mm)
	19	Carriage	Tilt Angle (forward / back)	degrees °
	20	Forks	Standard (length x width x thickness)	in.
	DIMENSIONS	21	Headlength to Face of Forks <sup>1</sup>	All - Battery Compartments
22		Outrigger ID		in.
23		Battery Compartment Size - Length x Width x Height	14.5" Battery Compartment	in.
			16.5" Battery Compartment	in.
			18.5" Battery Compartment	in.
			21.5" Battery Compartment	in.
24		Turning Radius - Minimum Outside <sup>1</sup>	14.5" Battery Compartment	in.
			16.5" Battery Compartment	in.
			18.5" Battery Compartment	in.
			21.5" Battery Compartment	in.
25	Aisle Width - Zero Clearance - Right Angle Stack <sup>1</sup>		see chart	
PERFORMANCE	26	Stability - Comply with ANSI		
	27			
	28	Travel Speed	Rearward (chasis first) - Empty / Rated Load	mph
	29		Forward ( forks first) - Empty / Rated Load	mph
	30			
	31		Empty	ft/min
	32		2000	ft/min
	33	Lift Speeds - Standard / Optional	3000	ft/min
	34		3500	ft/min
	35		4000	ft/min
36		4500	ft/min	
37	Lowering Speeds - Standard / Optional	Empty	ft/min	
38		Rated Load	ft/min	
WHEELS & TIRES	39	Size - front load wheels (tandem articulating)	Standard	
	40	Size - drive tire / dual casters		
	41		Standard	
	42	Wheel Base	14.5" Battery Compartment	in.
			16.5" Battery Compartment	in.
		18.5" Battery Compartment	in.	
		21.5" Battery Compartment	in.	
43	Brakes, service / parking	Method of Control		
44		Method of Operation		
ELECTRIC	45	Battery, type		
	46		Traction motor rating (60 minute rating)	hp (kw)
	47		Hoist motor rating (5 minute rating)	hp (kw)
	48	Electric Motors	Traction motor control method	
	49		Hoist motor control method	
	50		Number of speeds	

<sup>1</sup> Single Reach - add 1" for Sideshift, Double Reach is standard with Sideshift

<sup>2</sup> Short or Long Wheelbase is determined by Mast Height

<sup>3</sup> Travel Speed will be reduced to 6.8 / 5.8 (Empty / Rated Load) with MFHs above 341" in the Rearward and Forward direction.



Yale®										1	GENERAL
NR035EA		NR040EA		NDR030EA		NR045EA		NDR035EA		2	
SWB		SWB		LWB	SWB	SWB		LWB	SWB	3	
3500 (1588)		4000 (1814)		3000 (1361)		4500 (2041)		3500 (1588)		4	
24 (610)		24 (610)		24 (610)		24 (610)		24 (610)		5	
Electric - 36 volt		Electric - 36 volt		Electric - 36 volt		Electric - 36 volt		Electric - 36 volt		6	
Stand		Stand		Stand		Stand		Stand		7	
Poly / Poly / Rubber		Poly / Poly / Rubber		Poly / Poly / Poly		Poly / Poly / Poly		Poly / Poly / Poly		8	
4 / 2 (1x)		4 / 2 (1x)		4 / 2 (1x)		4 / 2 (1x)		4 / 2 (1x)		9	
4950		5000		5250	N/A	5400		5650	N/A	10	
Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	11	
6750	3800	7400	3700	6300	4050	8400	3800	6700	4250	12	
See Mast Table		See Mast Table		See Mast Table		See Mast Table		See Mast Table		13	
3° Fwd / 4° Back		3° Fwd / 4° Back		3° Fwd / 4° Back		3° Fwd / 4° Back		3° Fwd / 4° Back		14	
1.60 x 3.9 x 42		1.80 x 3.9 x 42		1.60 x 3.9 x 42		1.80 x 3.9 x 42		1.60 x 3.9 x 42		15	
See Mast Table		See Mast Table		See Mast Table		See Mast Table		See Mast Table		16	
34"- 49" (1" increments)		34"- 49" (1" increments)		34"- 49" (1" increments)		34"- 49" (1" increments)		34"- 49" (1" increments)		17	
39.0 x 14.5 x 31.5		39.0 x 14.5 x 31.5		39.0 x 14.5 x 31.5		N/A		N/A		18	
39.0 x 16.5 x 31.5		39.0 x 16.5 x 31.5		39.0 x 16.5 x 31.5		39.0 x 16.5 x 31.5		39.0 x 16.5 x 31.5		19	
N/A		N/A		N/A		39.0 x 18.5 x 31.5		39.0 x 18.5 x 31.5		20	
N/A		N/A		N/A		39.0 x 21.5 x 31.5		39.0 x 21.5 x 31.5		21	
65.74		65.74		70.74	65.74	N/A		N/A		22	
67.74		67.74		72.74	67.74	67.90		72.90	67.90	23	
N/A		N/A		N/A		69.90		74.90	69.90	24	
N/A		N/A		N/A		72.90		77.90	72.90	25	
See "RAS" Table		See "RAS" Table		See "RAS" Table		See "RAS" Table		See "RAS" Table		26	
Yes		Yes		Yes		Yes		Yes		27	
Standard	Optional	Standard	Optional	Standard	Optional	Standard	Optional	Standard	Optional	28	
7.4/6.5	N/A	7.4/6.5	N/A	7.4/6.8	N/A	7.4/6.5 <sup>3</sup>	8.0/6.5 <sup>3</sup>	7.4/6.8 <sup>3</sup>	8.0/6.8 <sup>3</sup>	29	
7.4/6.5	N/A	7.4/6.0	N/A	7.4/6.8	N/A	7.4/5.8 <sup>3</sup>	8.0/5.8 <sup>3</sup>	7.4/6.5 <sup>3</sup>	8.0/6.5 <sup>3</sup>	30	
Standard	Optional	Standard	Optional	Standard	Optional	Standard	Optional	Standard	Optional	31	
100	N/A	100	114	100	114	114	130	114	130	32	
75	N/A	75	86	71	82	86	98	82	93	33	
69	N/A	69	78	65	73	78	90	73	85	34	
64	N/A	64	72	N/A	N/A	72	84	70	79	35	
N/A	N/A	60	68	N/A	N/A	68	78	N/A	N/A	36	
N/A	N/A	N/A	N/A	N/A	N/A	65	74	N/A	N/A	37	
95	N/A	95	N/A	95	N/A	105	105	105	105	38	
95	N/A	95	N/A	95	N/A	105	105	105	105	39	
5 x 3.9		5 x 3.9		5 x 2.9		5 x 3.9		5 x 2.9		40	
Drive	Caster	Drive	Caster	Drive	Caster	Drive	Caster	Drive	Caster	41	
12.0 x 5.5	7.9 x 2.2	12.0 x 5.5	7.9 x 2.2	12.0 x 5.5	7.9 x 2.2	13.5 x 5.5	7.9 x 2.2	13.5 x 5.5	7.9 x 2.2	42	
55.35		55.35		60.35	N/A	N/A		N/A		43	
57.36		57.36		62.36	N/A	57.36		62.36	57.36	44	
N/A		N/A		N/A		59.37		64.37	59.37	45	
N/A		N/A		N/A		62.36		67.36	62.36	46	
Foot		Foot		Foot		Foot		Foot		47	
Spring Apply / Electric Release		Spring Apply / Electric Release		Spring Apply / Electric Release		Spring Apply / Electric Release		Spring Apply / Electric Release		48	
Lead Acid		Lead Acid		Lead Acid		Lead Acid		Lead Acid		49	
7.5 (5.6)		7.5 (5.6)		7.5 (5.6)		7.5 (5.6)	8.7 (6.5)	7.5 (5.6)	8.7 (6.5)	50	
14.8 (11.0)		14.8 (11.0)	18.0 (13.4)	14.8 (11.0)	18.0 (13.4)	18.0 (13.4)	20.7 (15.4)	18.0 (13.4)	20.7 (15.4)		
Transistor		Transistor		Transistor		Transistor		Transistor			
Transistor		Transistor		Transistor		Transistor		Transistor			
Infinitely Variable		Infinitely Variable		Infinitely Variable		Infinitely Variable		Infinitely Variable			

GENERAL

WT.

DIMENSIONS

PERFORMANCE

WHEELS &amp; TIRES

ELECTRIC

**RIGHT ANGLE AISLE STACKING ("RAS" TABLE)**

Note: These are "Zero Clearance" aisles and require an additional 6" to 12" to be added to provide for easier maneuvering.

<b>NR035/40EA</b>					
Truck with 14.5" Battery Compartment and 42" ID					
Triplex - 4" Between Loads					
Pallet Length (inches)	Pallet Width (inches)				
		36	40	44	48
	36	85	85	85	85
	40	87	87	86	86
	44	92	91	91	90
48	96	96	95	95	

Add 2" for 16.5" Battery Compartment  
Add 1" for Sideshift

<b>NR045EA</b>					
Truck with 16.5" Battery Compartment and 42" ID					
Triplex - 4" Between Loads					
Pallet Length (inches)	Pallet Width (inches)				
		36	40	44	48
	36	88	88	87	87
	40	93	92	92	91
	44	97	97	96	96
48	102	101	101	100	

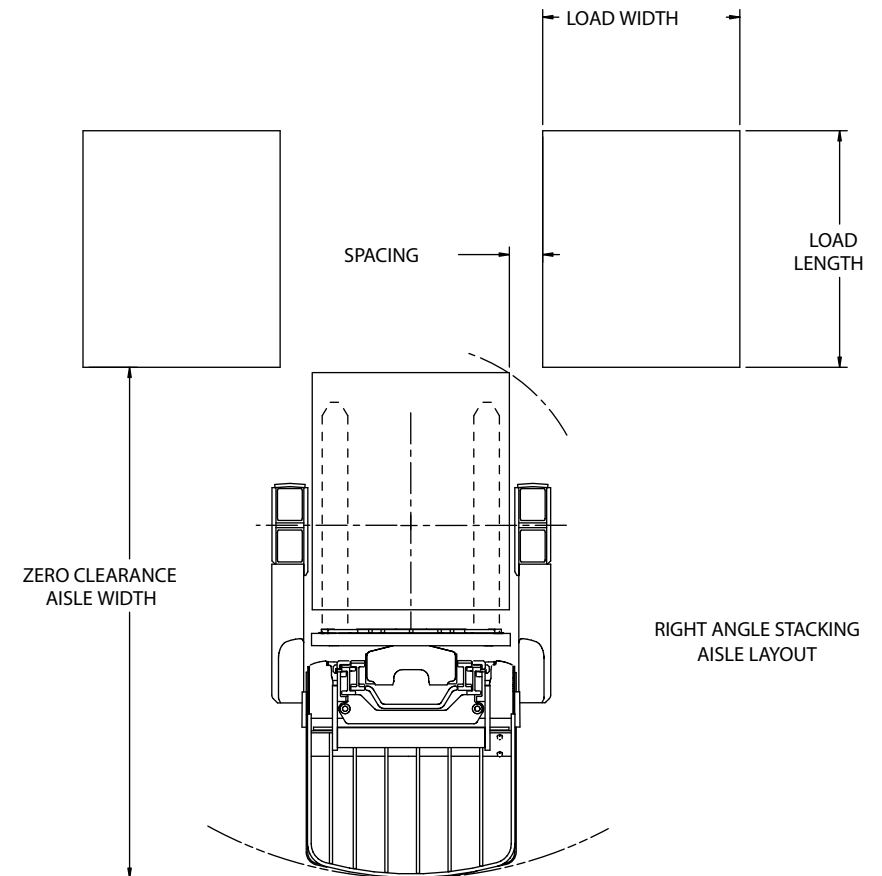
Add 2" for 18.5" Battery Compartment  
Add 5" for 21.5" Battery Compartment  
Add 1" for Sideshift

<b>NDR030EA</b>					
Truck with 14.5" Battery Compartment and 42" ID					
Triplex - 4" Between Loads					
Pallet Length (inches)	Pallet Width (inches)				
		36	40	44	48
	36	90	90	90	90
	40	91	91	91	91
	44	95	94	94	93
48	99	99	98	98	

Add 2" for 16.5" Battery Compartment  
Sideshift is Standard on Double Reach

<b>NDR035EA</b>					
Truck with 16.5" Battery Compartment and 42" ID					
Triplex - 4" Between Loads					
Pallet Length (inches)	Pallet Width (inches)				
		36	40	44	48
	36	92	91	91	91
	40	96	96	95	94
	44	101	100	100	99
48	105	105	104	104	

Add 2" for 18.5" Battery Compartment  
Add 5" for 21.5" Battery Compartment  
Sideshift is Standard on Double Reach



Truck performance may be affected by the condition of the vehicle, how it is equipped and the application. Consult your Yale® Industrial Truck Dealer if any of the information shown is critical to your application. Specifications are subject to change without notice.

This truck meets all design specifications of ANSI B56.1 Safety Standard for Powered Industrial Trucks at the time of manufacture. Classified by Underwriters' Laboratories, Inc. as to fire hazard only.

The Yale products included in this document may be covered by US patent 6,684,148 and other patents pending.

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Yale Materials Handling Corporation  
P.O. Box 7367, Greenville, North Carolina 27835-7367

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