

N30-45ZR₂/ZDR₂ SERIES

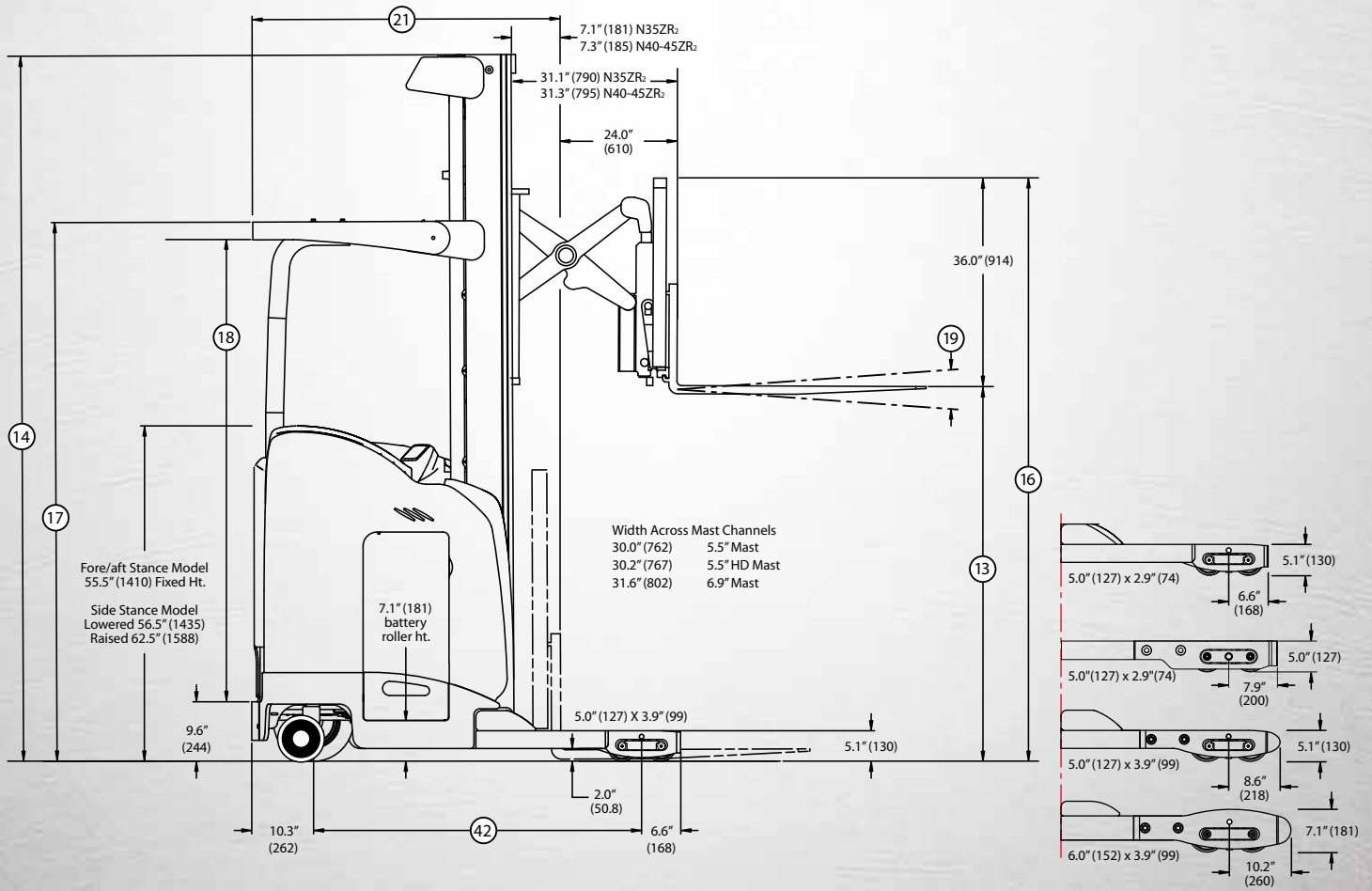
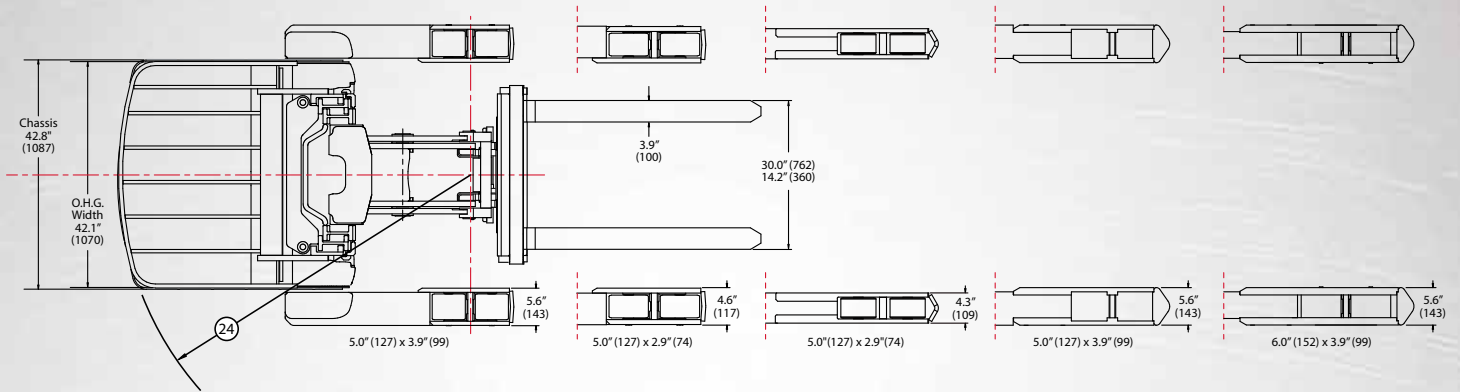


**STRONG PARTNERS.
TOUGH TRUCKS.™**

TECHNICAL GUIDE

Narrow Aisle, Single/Double Reach, AC Powered

N35-45ZR₂ DIMENSIONS



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

N35-45ZR₂ SPECIFICATIONS

		Hyster Company		Hyster Company		Hyster Company				
		N35ZR ₂		N40ZR ₂		N45ZR ₂				
GENERAL	1	Manufacturer Name	Hyster Company							
	2	Model	N35ZR ₂		N40ZR ₂		N45ZR ₂			
	3	Wheel Base Designation	SWB							
	4	Rated Capacity	lb. (kg)	3500 (1588)		4000 (1814)		4500 (2041)		
	5	Load Center, Distance	in. (mm)	24 (610)						
	6	Power Type - Electric, Diesel, LPG	Electric - 36 volt							
	7	Operator Type	Stand							
	8	Tire Type - Load/Caster/Drive	Poly / Poly / Poly				Poly / Poly / Vulk			
	9	Wheels, Number Load/Drive (x=driven)	4 / 2 (1x)							
WT.	10	Truck Weight, without Battery (approximate)	lb.	4950		5000		5400		
	11			Front	Rear	Front	Rear	Front	Rear	
DIMENSIONS	12	Axle Loading - Front/Rear with Assemble Retracted **	lb.	6750	3800	7400	3700	8400	3800	
	13	Height, Standard Lift (TOF)	in. (mm)	See Mast Table						
	14	Height, Standard Mast Lowered (DALH)	in. (mm)							
	15	Height, Freelif (TOF)	in. (mm)							
	16	Height, Standard Mast Extended w/LBR	in. (mm)							
	17	Height, Top of OHG	in. (mm)							
	18	Height, Operator Clearance	in. (mm)	3 / 4						
	19	Mast Tilt Angle, Forward/Back	degrees°							
	20	Forks, Standard (Length x Width x Thickness)	in.	1.6 x 3.9 x 42		1.8 x 3.9 x 42		1.8 x 3.9 x 42		
	21	Headlength to Face of Forks - All Battery Compartments ***	in. (mm)	See Mast Table						
	22	Basearm OEC	in.	34" - 49" (1" increments)						
	23	Battery Compartment Size, 14.5" Battery Compartment - (LxWxH)	in.	39.0 x 14.5 x 31.5				N/A		
		Battery Compartment Size, 16.5" Battery Compartment - (LxWxH)	in.	39.0 x 16.5 x 31.5						
		Battery Compartment Size, 18.5" Battery Compartment - (LxWxH)	in.	N/A				39.0 x 18.5 x 31.5		
		Battery Compartment Size, 21.5" Battery Compartment - (LxWxH)	in.	N/A				39.0 x 21.5 x 31.5		
24	Turning Radius - minimum outside, 14.5" Battery Compartment	in.	65.74				N/A			
	Turning Radius - minimum outside, 16.5" Battery Compartment	in.	67.74				67.90			
	Turning Radius - minimum outside, 18.5" Battery Compartment	in.	N/A				69.90			
	Turning Radius - minimum outside, 21.5" Battery Compartment	in.	N/A				72.90			
25	Aisle Width - Zero Clearance - Right Angle Stack	see chart	See "RAS" Table							
26	Stability - Comply with ANSI		Yes							
PERFORMANCE	27	Travel Speed		Standard	Optional	Standard	Optional	Standard	Optional	
	28	Rearward (chassis first) - Empty/RL	mph	7.4/6.5	N/A	7.4/6.5	N/A	7.4/6.5 †	8.0/6.5 †	
	29	Forward (forks first) - Empty/RL	mph	7.4/6.5	N/A	7.4/6.0	N/A	7.4/5.8 †	8.0/5.8 †	
	30	Lift Speed		Standard	Optional	Standard	Optional	Standard	Optional	
	31	Empty	ft./min	100	N/A	100	114	114	130	
	32	2,000 lb.	ft./min	75	N/A	75	86	86	98	
	33	3,000 lb.	ft./min	69	N/A	69	78	78	90	
	34	3,500 lb.	ft./min	64	N/A	64	72	72	84	
	35	4,000 lb.	ft./min	N/A	N/A	60	68	68	78	
	36	4,500 lb.	ft./min	N/A	N/A	N/A	N/A	65	74	
37	Lowering Speeds, Empty	ft./min	95		95		105			
38	Lowering Speeds, RL	ft./min	95		95		105			
WHEELS & TIRES	39	Size - Front Load Wheels, Standard		5 x 3.9		5 x 3.9		5 x 3.9		
	40			Drive	Caster	Drive	Caster	Drive	Caster	
	41	Size, Standard - Drive Tire/Dual Casters		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	
	42	Wheelbase - 14.5" Battery Compartment	in.	55.35				N/A		
		Wheelbase - 16.5" Battery Compartment	in.	57.36						
		Wheelbase - 18.5" Battery Compartment	in.	N/A				59.37		
		Wheelbase - 21.5" Battery Compartment	in.	N/A				62.36		
43	Brakes, Method of Control - Service/Parking		Foot							
44	Brakes, Method of Operation - Service/Parking		Spring Apply / Electric Release							
ELECTRIC	45	Battery Type		Lead Acid						
	46	Traction Motor Rating (60 minute rating)	hp (kw)	7.5 (5.6)				7.5 (5.6)		8.7 (6.5)
	47	Hoist Motor Rating (5 minute rating)	hp (kw)	14.8 (11.0)		14.8 (11.0)		18.0 (13.4)	18.0 (13.4)	20.7 (15.4)
	48	Traction Motor Control Method		Transistor						
	49	Hoist Motor Control Method		Transistor						
	50	Number of Speeds		Infinitely Variable						

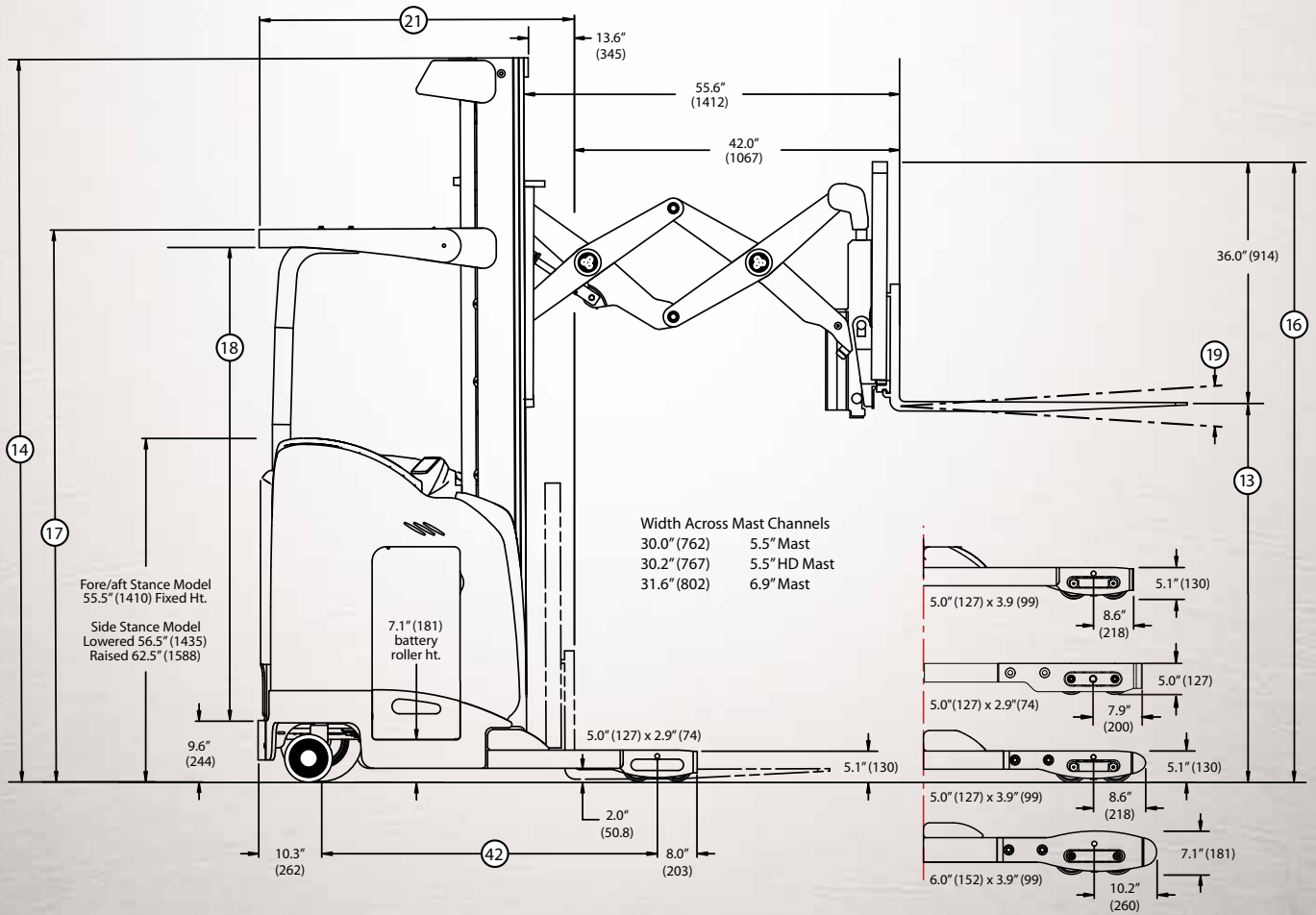
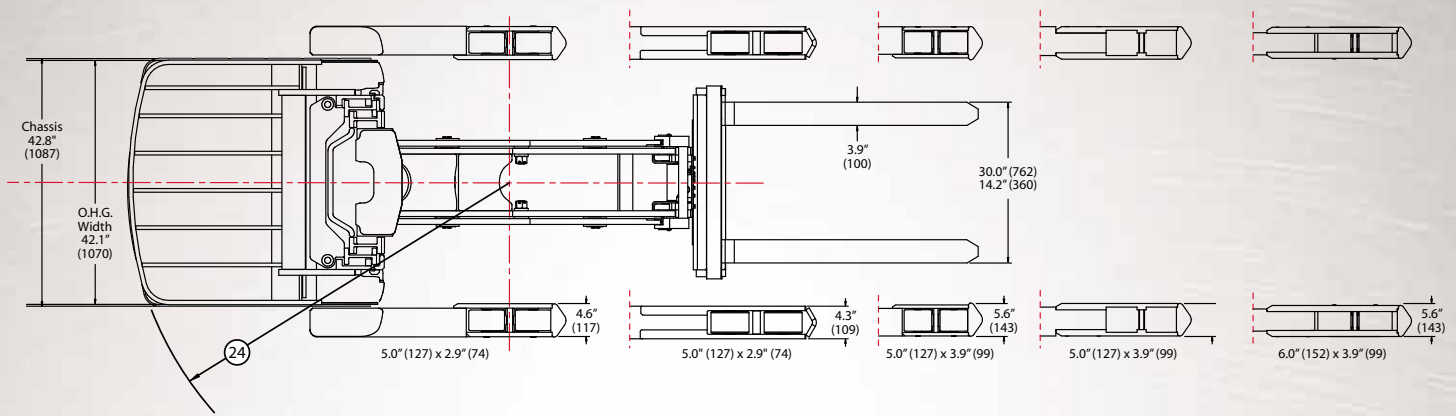
** Static with Rated Load and Max. Wt. Battery
 *** Add 1" for Sideshift

† Travel Speed will be reduced to 6.8 / 5.8 (Empty / Rated Load) with MFHs above 341" in the Rearward and Forward direction.
 8.0 mph travel speed is limited to Load up to 2500 lbs.
 SWB = Short Wheel Base; LWB = Long Wheel Base

CERTIFICATION: These Hyster lift trucks meet design specifications of Part II ANSI B56.1-1969, as required by OSHA Section 1910.178(a)(2) and also comply with Part III ANSI B56.1-revision in effect at time of manufacture. Certification of compliance with the applicable ANSI standards appears on the lift truck.

† NOTE: Performance specifications / ratings are for truck equipped as described under Standard Equipment in this Technical Guide. Performance specifications are affected by the condition of the vehicle and how it is equipped, as well as by the nature and condition of the operating area. Specifications are subject to change and the proposed application should be discussed with your authorized Hyster Company Dealer.

N30-35ZDR₂ DIMENSIONS



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

N30-35ZDR₂ SPECIFICATIONS

GENERAL	1	Manufacturer Name	Hyster Company		Hyster Company		
	2	Model	N30ZDR ₂		N35ZDR ₂		
	3	Wheel Base Designation*	LWB	SWB	LWB	SWB	
	4	Rated Capacity	3000 (1361)		3500 (1588)		
	5	Load Center, Distance	in. (mm)		24 (610)		
	6	Power Type - Electric, Diesel, LPG	Electric - 36 volt				
	7	Operator Type	Stand				
	8	Tire Type - Load/Caster/Drive	Poly / Poly / Vulk		Poly / Poly / Vulk		
	9	Wheels, Number Load/Drive (x=driven)	4 / 2 (1x)				
WT.	10	Truck Weight, without Battery (approximate)	lb.	5250	N/A	5250	N/A
	11			Front	Rear	Front	Rear
	12	Axle Loading - Front/Rear with Assemble Retracted **	lb.	6300	4050	6700	4250
DIMENSIONS	13	Height, Standard Lift (TOF)	in. (mm)	See Mast Table			
	14	Height, Standard Mast Lowered (DALH)	in. (mm)				
	15	Height, Freelif (TOF)	in. (mm)				
	16	Height, Standard Mast Extended w/LBR	in. (mm)				
	17	Height, Top of OHG	in. (mm)				
	18	Height, Operator Clearance	in. (mm)				
	19	Mast Tilt Angle, Forward/Back	degrees°	3 / 4			
	20	Forks, Standard (Length x Width x Thickness)	in.	1.6 x 3.9 x 42		1.6 x 3.9 x 42	
	21	Headlength to Face of Forks - All Battery Compartments ***	in. (mm)	See Mast Table			
	22	Basearm OEC	in.	34" - 49" (1" increments)			
	23	Battery Compartment Size, 14.5" Battery Compartment - (LxWxH)	in.	39.0 x 14.5 x 31.5		N/A	
		Battery Compartment Size, 16.5" Battery Compartment - (LxWxH)	in.	39.0 x 16.5 x 31.5			
	Battery Compartment Size, 18.5" Battery Compartment - (LxWxH)	in.	N/A		39.0 x 18.5 x 31.5		
	Battery Compartment Size, 21.5" Battery Compartment - (LxWxH)	in.	N/A		39.0 x 21.5 x 31.5		
	24	Turning Radius - minimum outside, 14.5" Battery Compartment	in.	70.74	N/A		
		Turning Radius - minimum outside, 16.5" Battery Compartment	in.	72.74	N/A	72.90	67.90
		Turning Radius - minimum outside, 18.5" Battery Compartment	in.	N/A	N/A	74.90	69.90
		Turning Radius - minimum outside, 21.5" Battery Compartment	in.	N/A	N/A	77.90	72.90
	25	Aisle Width - Zero Clearance - Right Angle Stack	see chart	See "RAS" Table			
	26	Stability - Comply with ANSI		Yes			
PERFORMANCE	27	Travel Speed		Standard	Optional	Standard	Optional
	28	Rearward (chassis first) - Empty/RL	mph	7.4/6.8 †	N/A	7.4/6.8 †	8.0/6.8 †
	29	Forward (forks first) - Empty/RL	mph	7.4/6.8 †	N/A	7.4/6.5 †	8.0/6.5 †
	30	Lift Speed		Standard	Optional	Standard	Optional
	31	Empty	ft./min	100	114	114	130
	32	2,000 lb.	ft./min	71	82	82	93
	33	3,000 lb.	ft./min	65		73	85
	34	3,500 lb.	ft./min	N/A		70	N/A
	35	4,000 lb.	ft./min	N/A			
	36	4,500 lb.	ft./min	N/A			
	37	Lowering Speeds, Empty	ft./min	95		105	
	38	Lowering Speeds, RL	ft./min	95		105	
WHEELS & TIRES	39	Size - Front Load Wheels, Standard		5 x 2.9			
	40			Drive	Caster	Drive	Caster
	41	Size, Standard - Drive Tire/Dual Casters		12.0 x 5.5	7.9 x 2.2	13.5 x 5.5	7.9 x 2.2
	42	Wheelbase - 14.5" Battery Compartment	in.	60.35	N/A		
		Wheelbase - 16.5" Battery Compartment	in.	62.36	N/A	62.36	57.36
		Wheelbase - 18.5" Battery Compartment	in.	N/A		64.37	59.37
		Wheelbase - 21.5" Battery Compartment	in.	N/A		67.36	62.36
	43	Brakes, Method of Control - Service/Parking		Foot			
	44	Brakes, Method of Operation - Service/Parking		Apply / Electric Release			
ELECTRIC	45	Battery Type		Lead Acid			
	46	Traction Motor Rating (60 minute rating)	hp (kw)	7.5 (5.6)		8.7 (6.5)	
	47	Hoist Motor Rating (5 minute rating)	hp (kw)	14.8 (11.0)	18.0 (13.4)	18.0 (13.4)	20.7 (15.4)
	48	Traction Motor Control Method		Transistor			
	49	Hoist Motor Control Method		Transistor			
	50	Number of Speeds		Infinitely Variable			

* Short or Long Wheelbase is determined by Mast Height
 ** Static with Rated Load and Max. Wt. Battery

† Travel Speed will be reduced to 6.8 / 5.8 (Empty / Rated Load) with MFHs above 341" in the Rearward and Forward direction.
 8.0 mph travel speed is limited to Load up to 2500 lbs.
 SWB = Short Wheel Base; LWB = Long Wheel Base

CERTIFICATION: These Hyster lift trucks meet design specifications of Part II ANSI B56.1-1969, as required by OSHA Section 1910.178(a)(2) and also comply with Part III ANSI B56.1-revision in effect at time of manufacture. Certification of compliance with the applicable ANSI standards appears on the lift truck.
 † NOTE: Performance specifications / ratings are for truck equipped as described under Standard Equipment in this Technical Guide. Performance specifications are affected by the condition of the vehicle and how it is equipped, as well as by the nature and condition of the operating area. Specifications are subject to change and the proposed application should be discussed with your authorized Hyster Company Dealer.

MAST DIMENSIONS

N35-40ZR₂/N30ZDR₂ MAST DIMENSIONS (5.5" STANDARD DUTY)

Maximum Fork Height (TOF)	Overall Lowered Ht.	Overall Height (Mast Extended) Highest Point w/ 36" Load Backrest	Free-Lift (TOF)	Overhead Guard Height to Top	Operator Clearance	Head Length (Length to Face of Forks)			
						14.5" B.C.		16.5" B.C.	
						Single Reach	Double Reach	Single Reach	Double Reach
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)				
3-STAGE FULL FREE-LIFT (FFL) VISTA™ MAST									
191 (4851)	87 (2210)	230 (5842)	48 (1219)	86.5 (2197)	75.3 (1913)	52.12	58.02	54.12	60.02
203 (5156)	91 (2311)	242 (6147)	52 (1321)	90.5 (2299)	79.3 (2014)	52.12	58.02	54.12	60.02
212 (5385)	95 (2413)	251 (6375)	56 (1422)	94.5 (2400)	83.3 (2116)	52.12	58.02	54.12	60.02
227 (5766)	101 (2565)	266 (6756)	62 (1575)	91 (2311)	79.8 (2027)	52.12	58.02	54.12	60.02
242 (6147)	107 (2718)	281 (7137)	68 (1727)	91 (2311)	79.8 (2027)	52.12	58.02	54.12	60.02
251 (6375)	110 (2794)	290 (7366)	71 (1803)	91 (2311)	79.8 (2027)	52.12	58.02	54.12	60.02
272 (6909)	119 (3023)	311 (7899)	80 (2032)	91 (2311)	79.8 (2027)	52.12	58.02	54.12	60.02

N45ZR₂/N35ZDR₂ MAST DIMENSIONS (5.5" HEAVY DUTY)

Maximum Fork Height (TOF)	Overall Lowered Ht.	Overall Height (Mast Extended) Highest Point w/ 36" Load Backrest	Free-Lift (TOF)	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.	
						Single Reach	Double Reach	Single Reach	Double Reach	Single Reach	Double Reach
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)						
3-STAGE FULL FREE-LIFT (FFL) VISTA™ MAST											
212 (5385)	95 (2413)	251 (6375)	56 (1422)	94.5 (2400)	83.3 (2116)	57.47	63.38	59.47	65.38	62.47	68.38
224 (5690)	101 (2565)	263 (6680)	62 (1575)	91 (2311)	79.8 (2027)	57.47	63.38	59.47	65.38	62.47	68.38
239 (6071)	107 (2718)	278 (7061)	68 (1727)	91 (2311)	79.8 (2027)	57.47	63.38	59.47	65.38	62.47	68.38
245 (6223)	110 (2794)	284 (7214)	71 (1803)	91 (2311)	79.8 (2027)	57.47	63.38	59.47	65.38	62.47	68.38
266 (6756)	119 (3023)	305 (7747)	80 (2032)	91 (2311)	79.8 (2027)	57.47	63.38	59.47	65.38	62.47	68.38
278 (7061)	125 (3175)	317 (8052)	86 (2184)	91 (2311)	79.8 (2027)	57.47	63.38	59.47	65.38	62.47	68.38
293 (7442)	131 (3327)	332 (8433)	92 (2337)	91 (2311)	79.8 (2027)	57.47	63.38	59.47	65.38	62.47	68.38

N45ZR₂/N35ZDR₂ MAST DIMENSIONS (6.9")

Maximum Fork Height (TOF)	Overall Lowered Ht.	Overall Height (Mast Extended) Highest Point w/ 36" Load Backrest	Free-Lift (TOF)	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.	
						Single Reach	Double Reach	Single Reach	Double Reach	Single Reach	Double Reach
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)						
3-STAGE FULL FREE-LIFT (FFL) VISTA™ MAST											
272 (6909)	119 (3023)	311 (7899)	80 (2032)	91 (2311)	79.8 (2027)	57.59	63.50	59.60	65.50	62.59	68.50
287 (7290)	125 (3175)	326 (8280)	86 (2184)	91 (2311)	79.8 (2027)	57.59	63.50	59.60	65.50	62.59	68.50
302 (7671)	131 (3327)	341 (8661)	92 (2337)	91 (2311)	79.8 (2027)	57.59	63.50	59.60	65.50	62.59	68.50
320 (8128)	138 (3505)	359 (9119)	99 (2515)	91 (2311)	79.8 (2027)	57.59	63.50	59.60	65.50	62.59	68.50
332 (8433)	143 (3632)	371 (9423)	104 (2642)	91 (2311)	79.8 (2027)	57.59	63.50	59.60	65.50	62.59	68.50
341 (8661)	146 (3708)	380 (9652)	107 (2718)	91 (2311)	79.8 (2027)	57.59	63.50	59.60	65.50	62.59	68.50
368 (9347)	157 (3988)	407 (10338)	118 (2997)	91 (2311)	79.8 (2027)	57.59	63.50	59.60	65.50	62.59	68.50
401 (10185)	170 (4318)	440 (11176)	131 (3327)	91 (2311)	79.8 (2027)	57.59	63.50	59.60	65.50	62.59	68.50
422 (10719)	179 (4547)	461 (11709)	140 (3556)	91 (2311)	79.8 (2027)	57.59	63.50	59.60	65.50	62.59	68.50

RIGHT ANGLE STACKING / BATTERY SPECIFICATIONS

RIGHT ANGLE AISLE STACKING

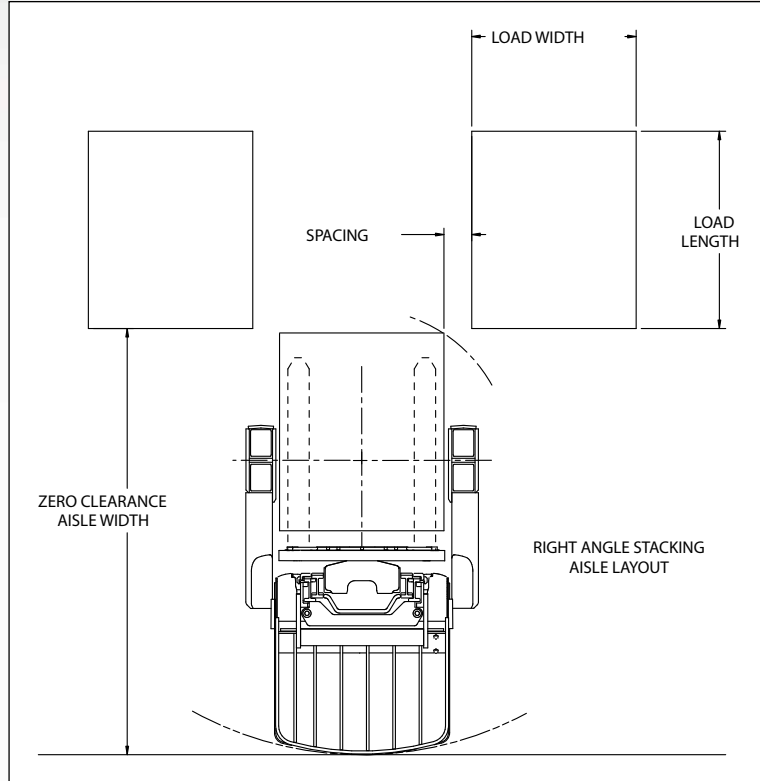
Note: These are "Zero Clearance" aisles and require an additional 6" or more to be added to provide for easier maneuvering.

N35/40ZR ₂					
Truck with 14.5" Battery Compartment and 42" ID					
3 Stage - 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

N45ZR ₂					
Truck with 16.5" Battery Compartment and 42" ID					
3 Stage - 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



N30ZDR ₂					
Truck with 14.5" Battery Compartment and 42" ID					
3 Stage - 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	

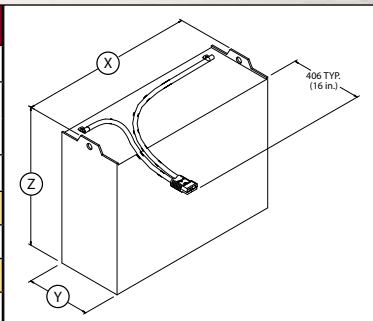
Add 2" for 16.5" Battery Compartment
Sideshift is Standard on Double Reach

N35ZDR ₂					
Truck with 16.5" Battery Compartment and 42" ID					
3 Stage - 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

BATTERY AND COMPARTMENT SPECIFICATIONS

Battery Specifications											
Battery Compartment Size	Battery Voltage	Maximum 6 Hr Rate		Battery Dimensions						Minimum Batt. Wt.	Maximum Batt. Wt.
				"X" Max.		"Y" Max.		"Z" Max.			
		AH	KWH	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 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.
Battery Connector: 24V - Red; 36V - Gray; Position "B", Lead Length 16"
Manufacturers Standard Cable Size Not to Exceed 4/0 AWG

STANDARD FEATURES AND OPTIONS

CAPACITY

Model N30ZDR₂: 3,000 lbs. at 24.0" (1,361 kg at 610 mm) load center

Model N35ZDR₂: 3,500 lbs. at 24.0" (1,588 kg at 610 mm) load center [Shuttle/Transport applications up to 24" Maximum Fork Height]
3,000 lbs. at 24.0" (1,361 kg at 610 mm) load center [Above 24" Maximum Fork Height]

Model N35ZR₂: 3,500 lbs. at 24.0" (1,588 kg at 610 mm) load center

Model N40ZR₂: 4,000 lbs. at 24.0" (1,814 kg at 610 mm) load center

Model N45ZR₂: 4,500 lbs. at 24.0" (2,041 kg at 610 mm) load center

RATED CAPACITIES ARE FOR TRUCKS EQUIPPED WITH:

- 3-Stage full free-lift (FFL) VISTA™ mast to maximum fork height of 203" (5156 mm) [N30ZDR₂, N35ZR₂ and N40ZR₂] and 212" (5385 mm) [N35ZDR₂ and N45ZR₂]
- 33.5" (851 mm) wide hook-type carriage, single reach (24.0" extend) with 42.0" (1067 mm) long forks
- 33.5" (851 mm) wide hook-type carriage, double reach (42.0" extend) with 42.0" (1067 mm) long forks
- 36.0" high load backrest extension (LBE)
- 1.8" x 3.9" (45 mm x 100 mm) 42" (1067 mm) long forks [N40ZR₂ and N45ZR₂]
- 1.6" x 3.9" (40 mm x 100 mm) 42" (1067 mm) long forks [N35ZR₂, N30ZDR₂ and N35ZDR₂]
- 5" x 3.9" poly articulating tandem load wheels [N35ZR₂, N40ZR₂ and N45ZR₂]
- 5" x 2.9" poly articulating tandem load wheels [N30ZDR₂ and N35ZDR₂]

MASTS

Models are equipped with a 5.5" 3-stage FFL mast assembly. The mast is constructed with the nested channel VISTA™ design with full-face, straight load rollers. Brass side thrust plugs allow easy mast adjustment during periodic maintenance without removal or disassembly of mast.

CARRIAGE

The single reach mechanisms provide 24 inches of extension. The double reach mechanisms provide 42 inches of extension. Tilt function provides 4 degrees back tilt and 3 degrees forward tilt on both carriages. Sideshift is optional on single reach mechanisms. Double reach mechanism is offered with sideshift feature. Integral sideshift allows seven total inches of sideshift and is reduced to 3 inches total with OEC less than 39 inches.

The pantograph (reach mechanism) arms are all made from one-inch thick alloy steel. The inner arm weldments have additional gusset plates for added strength and rigidity. The main pantograph pivots use tapered roller bearings which provide a stiffer pivot joint. The reach mechanism hoses and wires are installed in a plastic cable carrier. The cable carrier secures wires and hose inside and provides positive routing for both. Sealed connectors are used throughout the mechanism.

FORKS

All fork assemblies are all hook type forks.

N40ZR₂ and N45ZR₂: 1.8" x 3.9" x 36", 42", 48" (45 mm x 100 mm x 914 mm, 1067 mm, or 1219 mm)

N35ZR₂, N30ZDR₂ and N35ZDR₂: 1.6" x 3.9" x 36", 42", 48" (40 mm x 100 mm x 914 mm, 1067 mm, or 1219 mm)

ELECTRICAL SYSTEM

The performance parameters utilized by the Next Generation of reach trucks offers a high degree of customization for specific applications, optimizing unit and operator efficiency to match application requirements.

Hyster i³ Technology™ offers simple on-board parameter adjustment, diagnostics and interface for operators, supervisors and service personnel.

The state-of-the-art electrical system features a CANbus communication network linking all vehicle systems. The Vehicle System Manager is an electronic module with an

integral microprocessor that controls input and output capabilities. The vehicle application software monitors operator inputs and vehicle performance. The software adjusts vehicle performance as needed to improve the operation of the truck.

Hand controls, which are positioned to optimize each stance configuration, include the multifunction handle, steer tiller assembly, dash display, key switch and power disconnect.

The Fore/Aft Stance multifunction handle utilizes a single pivot axis for traction control, and thumb actuated controls for lift/lower operation. The handle provides simultaneous operation of traction, lift/lower, and reach functions. Additionally, the handle is utilized in rearward travel and provides traction and horn operation. The optional Aft Travel Control Handle (forward stance truck only) allows selection of Fore/Aft automotive steer mode with drive tire centering through the dash service menu.

The Side-Stance multifunction control handle assembly offers palm rest and large function buttons. The handle allows simultaneous operation of traction, lift/lower, and one auxiliary function.

STEERING SYSTEM

- Electric on-demand power steering
- Auto-centering at start-up
- Adjustable lock to lock
- Adjustable tiller force feedback
- Speed sensitive power assist
- Electronic adjustment of steer modes for automotive or reverse steering

BATTERY

The steel battery compartment provides secure storage and provides battery access / service from either side of the truck. Equipped with corrosion resistant, ball bearing battery rollers, battery installation or removal is a quick and easy process.

HYDRAULIC SYSTEM

The AC hydraulic system features proportional lifting and lowering. The lift function is controlled by varying lift motor RPM, which maximizes system efficiency. By utilizing the lift motor RPM to control oil flow, pressure drop in the lift hydraulic lines is minimized. The lower function is controlled by a proportional control valve which provides excellent lowering speed control.

STANDARD FEATURES AND OPTIONS

The lift motors are highly reliable AC designs featuring a Class F insulation rating. The motors have speed and temperature sensors mounted internally. The temperature sensor protects the motor from overheating. The speed sensor provides feedback to the hoist controller for precise speed control.

DRIVE TRAIN

The AC traction system offers excellent acceleration, deceleration or regenerative braking and seamless, smooth transitions during plugging. The plugging function is variable according to the handle position. All deceleration is performed by regenerative braking through the vehicle control system. Regenerative braking puts vehicle kinetic energy back into battery, improving efficiency, and reducing wear on brake components.

Four operator selectable driver modes are available; Modes 4, 3, 2, and 1. Mode 4 provides maximum acceleration and travel speeds. Mode 3 provides high travel speeds at reduced acceleration. Mode 2 reduces travel speeds and acceleration further. Mode 1 reduces travel speed by 40% and also limits acceleration. All 4 modes are completely programmable by supervisor or technician.

BRAKE

A spring applied, electrically released brake is standard on all models. The brake is pre-adjusted and requires no servicing. Regenerative braking is standard. When the motor RPM reaches 200, the brake is activated.

The brake pedal mounting location is optimized for each stance allowing comfortable operation by a wide range of operators. The switch mounting locations require the operator to be within the operator compartment in normal operator position prior to enabling operation of vehicle traction and hoist systems.

OPERATOR COMPARTMENT

Two operator compartments are offered, Fore/Aft Stance and Side-Stance. The operator's Drive Rite Design Intent compartment is ergonomically designed to provide operators with excellent visibility, efficiency and productivity.

Operator controls are positioned for optimum productivity and comfort on both Fore/Aft Stance and Side-Stance with standard adjustable steer tiller. Low 9.6 inch step height, combined with a wide entrance opening into the operator compartment, provides comfortable entry and exit from the truck.

Compartments have room for the operator to vary their stances and include a floating floor plate design with an ergonomically shaped floor mat for excellent ride comfort and reduced body fatigue. Both the brake and operator sensing switch are mounted below the floor mat, providing unobstructed entry and exit from the truck. Operator compartments are fully padded for comfort and as a thermal insulator from drive compartment heat.

The Side-Stance compartment provides a large backrest pad with integral lumbar and armrest support with standard 6 inches of vertical adjustment and 3 inches in and out for a wide range of operator heights. Doors are intended to protect the operator from objects that may enter the operator's compartment but they may also slow the operator's egress in emergency situations. A review of the forklift's intended environment should be conducted before selecting a door as optional equipment.

STANDARD FEATURES AND OPTIONS

STANDARD EQUIPMENT

- Fore / Aft Stance Operator Controls
- 36 Volt Battery (Includes 350 Amp Gray Battery Connector)
- 91" / 203" / 52" – 3 Stage Full Free Lift Mast (Standard on N30ZDR₂, N35ZR₂ and N40ZR₂)
- 95" / 212" / 56" – 3 Stage Full Free Lift Mast (Standard on N35ZDR₂ and N45ZR₂)
- Single Reach Mast (24" Extend) with 33.5" Wide Class II Hook Type Carriage (Standard on N35-45ZR₂)
- Double Reach (42" Extend) with 33.5" Wide Class II Hook Type Carriage (Standard on N30-35ZDR₂)
- Integral Sideshift with 7" Travel (Standard on N30-35ZDR₂)
- Forks: 1.6" x 3.9" x 42" (40 mm x 100 mm) – Class II Hook Type (Standard on N35ZR₂ and N30-35ZDR₂)
- Forks: 1.8" x 3.9" x 42" (45 mm x 100 mm) – Class II Hook Type (Standard on N40ZR₂ and N45ZR₂)
- 5" x 3.9" Poly Articulating Tandem Load Wheels - High Load Compound (Standard on N35-45ZR₂)
- 5" x 2.9" Poly Articulating Tandem Load Wheels - High Load Compound (Standard on N30-35ZDR₂)
- AC Traction, Lift / Lower and Steering
- Low Step Height
- Transistor Controller with Regenerative Braking
- i³ Technology™
- Power Lowering (unloaded) and Regenerative Lowering (Loaded)
- Programmable Traction Speed and Acceleration
- Electric Power Steering
- Polyurethane Drive Tire - 12.0" x 5.5" (Standard on N30ZDR₂, N35ZR₂, and N40ZR₂)
- Polyurethane Drive Tire - 13.5" x 5.5" (Standard on N35ZDR₂ and N45ZR₂)
- Dual Articulating Polyurethane Caster Wheels
- Power Disconnect
- Key Start
- 36" High Load Backrest Extension
- Sealed Battery Rollers
- Tilting Carriage (3° Fwd, 4° Back)
- Padded Operator Compartment
- Rear Post Operator Protection
- Operator's Overhead Guard
- Low Profile Anti-Fatigue Floor mat
- Control Handle with Simultaneous Hydraulic Functions
- Graphic LCD Multi-Function Smart Display with:
 - Back lighting
 - Bar Graphic Battery Discharge Indicator and Lift Interrupt
 - Hour Meter; Truck, Traction and Hoist Pump
 - Performance Mode selection and Indication with lift interrupt
 - LED Status Indicators with symbols
 - Programmable Performance Modes
 - User passwords and Operator logs with history
 - Steer Wheel Angle Graphic Indication
 - Truck Inspection Check List
 - Truck Speed Indication in MPH or KPH
- Electronic Horn
- Static Discharge Strap
- Operator's Manual
- UL Classification


OPTIONAL EQUIPMENT

- Side-Stance Operator Controls
- Reverse Steering
- Forward Stance with Aft Travel Control Handle (allows selection of Fore/Aft automotive steer mode with drive tire centering through the dash service menu)
- Steered Caster - Electric
- Keyless Start
- Battery Stand
- Battery Puller
- Cooler/Freezer Construction (Operating Temperatures 0°F to 120°F)
- SubZero Freezer Construction (Operating Temperatures -40°F to 120°F)
- SubZero Freezer with Heated Floor and Control Handle (Operating Temperatures -40°F to 120°F)
- UL Classification EE
- Load Wheels with Greasable Bearings
- Bolt-on Wheel Box for use with 5" x 3.9", 6" x 3.9", and 5" x 2.9" load wheels
- Tapered Basearm
- Poly Siped Drive Tires
- Poly X-Groove Drive Tires
- Various Fork Lengths
- Auto Fork Leveling
- Fork Height Display
- Fork Camera
- Fork – Laser Level Line
- Shelf Height Selector
- 48" High Load Backrest Extension
- Rear Operator Compartment Door
- Back-up and Motion Alarm
- Amber Strobe Light
- Operator Desktop Light
- Dual Headlight
- Rear Worklight
- High Speed Lift and Travel
- Operator Overhead Fan
- Load Weight Display
- Reduced Travel Speed with Carriage Extended
- RF Terminal Bracket
- RF Handheld Scanner Holder
- Impact Monitor
- Parts Manual



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