

# REACH TRUCK



2500 - 4500 LBS.

SPECIFICATIONS



9BRU18-23 | 9BDRU13-15

CLASS

2

ELECTRIC MOTOR NARROW AISLE

[ToyotaForklift.com](http://ToyotaForklift.com)



## REACH TRUCK

**CAPACITY**  
**2500 - 4500 LBS.**

**WHEELBASE**  
**57 - 67 IN.**

**LOAD CENTER**  
**24 IN.**

### INDUSTRIES



Cold Storage



Distribution



Factory



Food Processing



Food Storage



General Manufacturing



General Warehousing



Retail

## STANDARD FEATURES

### PERFORMANCE

- 24-Volt electrical system<sup>1</sup>
- 36-Volt electrical system
- Variable-speed lift and lowering
- Electric power-steering motor
- Two-speed reach/retract
- Current-controlled proportional valve
- Multifunction control handle
- Interactive digital display panel
  - Multifunctional hour meter
  - Time & date display
  - Programmable travel, acceleration, lift/lower speeds, reach/retract
  - Fault code memory
- AC-powered drive system with torque control
- AC hydraulic system
- Lowering flow limiter
- Lift system relief valve
- UL-approved type “E” rating

### OPERABILITY

- 180° electronic power steering
- Auto position hold
- Flexible dock stance operator compartment
- Wide-view 3-stage mast (FSV)
- Hydraulic cushioned mast staging
- Hydraulic cushioned retract system
- Hydraulic fork deceleration at floor level
- Lift slow down at max lift
- 33" - 50" base leg openings (ID)
  - In 1" increments<sup>2,3</sup>
- Polyurethane drive tire (13.5" dia. x 6")
- Tandem articulated, bolt-on polyurethane load wheels (5" x 3.63")
- Polyurethane caster wheel (dual)
- Proportional handle plugging
- Tapered toe box (5" x 3.63") (9BDRU13, 9BDRU15 only)
- Universal operator presence pedal with cushioned pad
- Electric disc brake
- Regenerative braking
- Ventilated tractor compartment with high-capacity cooling fan
- 48" tilting load backrest extension (5° forward/3° backward)<sup>6</sup>
- ITA Class II hook-type carriage (32" wide)
- Anti-static ground strap
- Adjustable speed limit above free-Lift (0 - 3.5 mph)
- Forks: 42" x 1.75" x 4"
  - 42" x 1.5" x 4" on 9BRU18

### ERGONOMICS

- Bubble-cushioned padded floor and brake pedal
- Ergonomically angled floorboard
- Integrated clipboard, amenities tray, and cup holder
- High-visibility overhead guard
- Safety glass mast guard<sup>4</sup>
- Comfort-padded lean points
- Cushioned knee pad

### SERVICEABILITY

- Battery compartment rollers
- Adjustable battery retaining gates
- SB350 red connector<sup>5</sup>
- SB350 gray connector<sup>6</sup>
- Battery discharge indicator with lift interrupt
- Self-diagnostics
- Built-in analyzer
- Over temperature indicator with protection
  - on drive & lift motor
- Emergency power disconnect switch
- Electric horn
- Key switch
- Self-adjusting electric disc brake
- Enclosed battery compartment
  - 14.5" x 38.62" x 31"<sup>11</sup>
  - 16.5" x 38.62" x 31"
  - 18.5" x 38.62" x 31"<sup>17</sup>
  - 21.5" x 38.62" x 31"<sup>18</sup>

## OPTIONAL EQUIPMENT

- Dock stance package
  - Tall operator backrest
  - Third overhead guard pillar
- Battery side gate interlock switches
- Poly drive tire options
- Poly load wheel options
- Load weight display (not legal for trade)
- Operator compartment fan
- LED overhead guard-mounted worklights
- LED operator compartment dome light
- LED strobe light options (top mounted)
- Directional travel alarm options
- Fire extinguisher
- Mast lift limit switch with bypass
- Height & tilt indicator
- Acculaser
- Reach interlock switch
- RF bracket options with 2 amp power hookup
- Keyless on/off switch
- Operator PIN code entry system
- Optional battery connector colors
- UL-approved type “EE” rating
- Cold storage/freezer conditioning

<sup>1</sup> Only available on 9BRU18 & 9BDRU13.

<sup>2</sup> Specify base leg opening size (inside dimension).

<sup>3</sup> When ordering the truck without a sideshifter, in order to straddle the load, ensure that the base leg opening size (ID) is at least 2" greater than the load width.

<sup>4</sup> When the cold storage/freezer conditioning option is ordered, the safety glass mast guard is replaced with the wire mesh mast guard.

<sup>5</sup> Standard on 24-Volt trucks.

<sup>6</sup> Standard on 36-Volt trucks.

<sup>7</sup> Only available on 9BRU18, 9BRU23 & 9BDRU15.

<sup>8</sup> Only available on 9BRU23 & 9BDRU15.

Please contact your local, authorized Toyota Dealer for a complete list of available options.

TRUCK SPECIFICATIONS

MODEL NUMBERS / BATTERY COMPARTMENT SIZE

GENERAL DATA			98RU18 / 14.5		98RU18 / 16.5		98RU18 / 18.5	
Type / Load Capacity <sup>1</sup> (with 24" load center)	lb (kg)		Single Reach / 3500 (1580)		Single Reach / 3500 (1580)		Single Reach / 3500 (1580)	
Total Weight (without battery)	lb (kg)		6100 (2767)		6150 (2790)		6200 (2812)	
Operator Position			Stand-Up Rider		Stand-Up Rider		Stand-Up Rider	
EXTERIOR DIMENSIONS			98RU18 / 14.5		98RU18 / 16.5		98RU18 / 18.5	
<b>A</b> Battery Compartment Size <sup>2</sup> (length)	in (mm)		14.5 (368)		16.5 (419)		18.5 (470)	
<b>B</b> Maximum Fork Height <sup>1</sup>	in (mm)		271 (6883)		301 (7645)		301 (7645)	
<b>C</b> Mast Lowered Height	in (mm)		119 (3022)		131 (3327)		131 (3327)	
<b>D</b> Mast Extended Height	in (mm)		319 (8103)		319 (8103)		319 (8103)	
<b>E</b> Free-Lift	in (mm)		76 (1930)		76 (1930)		76 (1930)	
<b>F</b> Wheelbase	in (mm)		57.1 (1450)		59.1 (1501)		61.1 (1552)	
<b>G</b> Head Length (length to fork face)	in (mm)		55.3 (1405)		57.3 (1430)		59.3 (1506)	
<b>H</b> Truck Length (length to end of base legs)	in (mm)		76.2 (1935)		78.2 (1986)		80.2 (2037)	
<b>I</b> Power Unit Length	in (mm)		35.5 (902)		37.5 (953)		39.5 (1003)	
<b>J</b> Power Unit Width	in (mm)		42.5 (1080)		42.5 (1080)		42.5 (1080)	
<b>K</b> Power Unit Height <sup>3</sup>	in (mm)		51.5 (1308)		51.5 (1308)		51.5 (1308)	
<b>L</b> Carriage Width	in (mm)		32 (813)		32 (813)		32 (813)	
<b>M</b> Load Backrest Height	in (mm)		48 (1220)		48 (1220)		48 (1220)	
<b>N</b> Tilt Range (forward / backward)	deg		3 / 4.5		3 / 4.5		3 / 4.5	
<b>O</b> Overhead Guard Height <sup>4</sup>	in (mm)		90.81 (2307)		90.81 (2307)		90.81 (2307)	
<b>P</b> Base Legs Opening (inside dimensions)	in (mm)		33 - 50 (838 - 1270)		33 - 50 (838 - 1270)		33 - 50 (838 - 1270)	
<b>Q</b> Base Legs Overall Width (outside dimensions)	in (mm)		44 - 61 (1118 - 1550)		44 - 61 (1118 - 1550)		44 - 61 (1118 - 1550)	
Base Leg Width	in (mm)		5.5 (140)		5.5 (140)		5.5 (140)	
Fork Size (T x W x L)	in (mm)		1.5 x 4 x 42 (38 x 100 x 1070)		1.5 x 4 x 42 (38 x 100 x 1070)		1.5 x 4 x 42 (38 x 100 x 1070)	
<b>R</b> Fork Adjustment (minimum / maximum)	in (mm)		15 (381) / 30 (762)		15 (381) / 30 (762)		15 (381) / 30 (762)	
<b>S</b> Step Height	in (mm)		9 (229)		9 (229)		9 (229)	
<b>T</b> Battery Roller Height	in (mm)		7 (178)		7 (178)		7 (178)	
<b>U</b> Bumper to Centerline of Drive Wheel	in (mm)		11.35 (288)		11.35 (288)		11.35 (288)	
<b>V</b> Underclearance (centerline of wheelbase)	in (mm)		2 (50)		2 (50)		2 (50)	
Reach Stroke	in (mm)		22.75 (578)		22.75 (578)		22.75 (578)	
Maximum Reach	in (mm)		28.5 (724)		28.5 (724)		28.5 (724)	
<b>W</b> Outside Turning Radius	in (mm)		70.8 (1798)		72.8 (1849)		74.8 (1900)	
PERFORMANCE DATA			98RU18 / 14.5		98RU18 / 16.5		98RU18 / 18.5	
			24V	36V	24V	36V	36V	
Maximum Travel Speed	Full Load	mph (km/h)	6.5 (10.5)	7.5 (12.1)	6.5 (10.5)	7.5 (12.1)	7.5 (12.1)	
	No Load	mph (km/h)	6.5 (10.5)	7.5 (12.1)	6.5 (10.5)	7.5 (12.1)	7.5 (12.1)	
Lifting Speed	Full Load	fpm (mm/sec)	40 (200)	70 (355)	40 (200)	70 (355)	70 (355)	
	No Load	fpm (mm/sec)	64 (325)	100 (508)	64 (325)	100 (508)	100 (508)	
Lowering Speed	Full Load	fpm (mm/sec)	110 (559)	110 (559)	110 (559)	110 (559)	110 (559)	
	No Load	fpm (mm/sec)	110 (559)	110 (559)	110 (559)	110 (559)	110 (559)	
Out of Free-Lift		mph (km/h)	0 - 3.5 (0 - 5.6)	0 - 3.5 (0 - 5.6)	0 - 3.5 (0 - 5.6)	0 - 3.5 (0 - 5.6)	0 - 3.5 (0 - 5.6)	
Maximum Reach / Retract	Full Load	sec	4.8	4.8	4.8	4.8	4.8	
	No Load	sec	4.8	4.8	4.8	4.8	4.8	
POWER SYSTEM			98RU18 / 14.5		98RU18 / 16.5		98RU18 / 18.5	
Battery Type			Lead Acid		Lead Acid		Lead Acid	
Voltage / Capacity (6-hour ratings)	Maximum	V / AH	24 / 1080	36 / 1240	24 / 1080	36 / 1240	36 / 1240	
Weight	Minimum	lb (kg)	1600 (726)	1600 (726)	2000 (907)	2000 (907)	2300 (1043)	
	Maximum	lb (kg)	2000 (907)	2000 (907)	2300 (1043)	2300 (1043)	2600 (1179)	
Electric Motors	Drive	hp (kw)	6.3 (4.7)	7.1 (5.3)	6.3 (4.7)	7.1 (5.3)	7.1 (5.3)	
	Load Handling	hp (kw)	14.1 (10.5)	17.3 (12.9)	14.1 (10.5)	17.3 (12.9)	17.3 (12.9)	
CONTROL TYPE			98RU18 / 14.5		98RU18 / 16.5		98RU18 / 18.5	
Drive			AC	AC	AC	AC	AC	
Load Handling			AC	AC	AC	AC	AC	
Power Steering			Transistor	Transistor	Transistor	Transistor	Transistor	
TIRES			98RU18 / 14.5		98RU18 / 16.5		98RU18 / 18.5	
Tire Type			Polyurethane		Polyurethane		Polyurethane	
Wheels (x = driven)	Drive / Caster / Load		1x / 1 / 4		1x / 1 / 4		1x / 1 / 4	
	Drive	in (mm)	13.5 x 6.0 (345 x 152.4)		13.5 x 6.0 (345 x 152.4)		13.5 x 6.0 (345 x 152.4)	
Size (diameter x width)	Caster	in (mm)	8 x 4 (203 x 102)		8 x 4 (203 x 102)		8 x 4 (203 x 102)	
	Load	in (mm)	5 x 3.63 (127 x 92)		5 x 3.63 (127 x 92)		5 x 3.63 (127 x 92)	
Suspension	Caster		Spring Loaded		Spring Loaded		Spring Loaded	
Grade Clearance	%		14		14		14	
Brake Type			Electric Disc		Electric Disc		Electric Disc	

1 Please refer to the Mast Specifications & Rated Capacities charts.  
 2 Please refer to the Battery Compartment Specification Chart.

3 Add 8.5" (216 mm) for optional extended operator backrest.  
 4 Overhead guard height with FSV 89" / 193" mast is 88.75" (2254 mm).

MODEL NUMBERS / BATTERY COMPARTMENT SIZE

GENERAL DATA			9BDRU13 / 14.5	9BDRU13 / 16.5
Type / Load Capacity <sup>1</sup> (with 24" load center)	lb (kg)		Double Reach / 2500 (1134)	Double Reach / 2500 (1134)
Total Weight (without battery)	lb (kg)		6558 (2975)	6608 (2997)
Operator Position			Stand-Up Rider	Stand-Up Rider
EXTERIOR DIMENSIONS			9BDRU13 / 14.5	9BDRU13 / 16.5
<b>A</b> Battery Compartment Size <sup>2</sup> (length)	in (mm)		14.5 (368)	16.5 (419)
<b>B</b> Maximum Fork Height <sup>1</sup>	in (mm)		264 (6706)	264 (6706)
<b>C</b> Mast Lowered Height	in (mm)		118 (2997)	118 (2997)
<b>D</b> Mast Extended Height	in (mm)		312 (7925)	312 (7925)
<b>E</b> Free-Lift	in (mm)		79 (2007)	79 (2007)
<b>F</b> Wheelbase	in (mm)		59.6 (1514)	61.6 (1565)
<b>G</b> Head Length (length to fork face)	in (mm)		60 (1524)	62 (1575)
<b>H</b> Truck Length (length to end of base legs)	in (mm)		81.3 (2065)	83.3 (2116)
<b>I</b> Power Unit Length	in (mm)		35.5 (902)	37.5 (952)
<b>J</b> Power Unit Width	in (mm)		42.5 (1080)	42.5 (1080)
<b>K</b> Power Unit Height <sup>3</sup>	in (mm)		51.5 (1308)	51.5 (1308)
<b>L</b> Carriage Width	in (mm)		32 (813)	32 (813)
<b>M</b> Load Backrest Height	in (mm)		48 (1220)	48 (1220)
<b>N</b> Tilt Range (forward / backward)	deg		3 / 4.5	3 / 4.5
<b>O</b> Overhead Guard Height <sup>4</sup>	in (mm)		90.81 (2307)	90.81 (2307)
<b>P</b> Base Legs Opening (inside dimensions)	in (mm)		33 - 50 (838 - 1270)	33 - 50 (838 - 1270)
<b>Q</b> Base Legs Overall Width (outside dimensions)	in (mm)		43 - 60 (1092 - 1524)	43 - 60 (1092 - 1524)
Base Leg Width	in (mm)		5 (127)	5 (127)
Fork Size (T x W x L)	in (mm)		1.5 x 4 x 42 (38 x 100 x 1070)	1.5 x 4 x 42 (38 x 100 x 1070)
<b>R</b> Fork Adjustment (minimum / maximum)	in (mm)		15 (381) / 30 (762)	15 (381) / 30 (762)
<b>S</b> Step Height	in (mm)		9 (229)	9 (229)
<b>T</b> Battery Roller Height	in (mm)		7 (178)	7 (178)
<b>U</b> Bumper to Centerline of Drive Wheel	in (mm)		11.35 (288)	11.35 (288)
<b>V</b> Underclearance (centerline of wheelbase)	in (mm)		2 (50)	2 (50)
Reach Stroke	in (mm)		42.75 (1086)	42.75 (1086)
Maximum Reach	in (mm)		53.25 (1353)	53.25 (1353)
<b>W</b> Outside Turning Radius	in (mm)		73.6 (1869)	75.6 (1920)
PERFORMANCE DATA			9BDRU13 / 14.5	9BDRU13 / 16.5
Maximum Travel Speed	Full Load	mph (km/h)	6.5 (10.5)	6.5 (10.5)
	No Load	mph (km/h)	6.5 (10.5)	6.5 (10.5)
Lifting Speed	Full Load	fpm (mm/sec)	40 (200)	40 (200)
	No Load	fpm (mm/sec)	60 (305)	60 (305)
Lowering Speed	Full Load	fpm (mm/sec)	110 (559)	110 (559)
	No Load	fpm (mm/sec)	110 (559)	110 (559)
Out of Free-Lift		mph (km/h)	0 - 3.5 (0 - 5.6)	0 - 3.5 (0 - 5.6)
Maximum Reach / Retract	Full Load	sec	5.0	5.0
	No Load	sec	5.0	5.0
POWER SYSTEM			9BDRU13 / 14.5	9BDRU13 / 16.5
Battery Type			Lead Acid	Lead Acid
Voltage / Capacity (6-hour ratings)	Maximum	V / AH	24 / 1080	24 / 1080
	Minimum	lb (kg)	1600 (726)	2000 (907)
Weight	Maximum	lb (kg)	2000 (907)	2300 (1043)
	Drive	hp (kw)	6.3 (4.7)	6.3 (4.7)
Electric Motors	Load Handling	hp (kw)	14.1 (11)	14.1 (11)
CONTROL TYPE			9BDRU13 / 14.5	9BDRU13 / 16.5
Drive			AC	AC
Load Handling			AC	AC
Power Steering			Transistor	Transistor
TIRES			9BDRU13 / 14.5	9BDRU13 / 16.5
Tire Type			Polyurethane	Polyurethane
Wheels (x = driven)	Drive / Caster / Load		1x / 1 / 4	1x / 1 / 4
	Drive	in (mm)	13.5 x 6.0 (345 x 152.4)	13.5 x 6.0 (345 x 152.4)
Size (diameter x width)	Caster	in (mm)	8 x 4 (203 x 102)	8 x 4 (203 x 102)
	Load	in (mm)	5 x 3.63 (127 x 92)	5 x 3.63 (127 x 92)
Suspension	Caster		Spring Loaded	Spring Loaded
Grade Clearance		%	14	14
Brake Type			Electric Disc	Electric Disc

1 Please refer to the Mast Specifications & Rated Capacities charts.  
2 Please refer to the Battery Compartment Specification Chart.  
3 Add 8.5" (216 mm) for optional extended operator backrest.  
4 Overhead guard height with FSV 89" / 193" mast is 88.75" (2254 mm).

TRUCK SPECIFICATIONS

MODEL NUMBERS / BATTERY COMPARTMENT SIZE

GENERAL DATA			9BRU23 / 16.5	9BRU23 / 18.5	9BRU23 / 21.5
Type / Load Capacity <sup>1</sup> (with 24" load center)	lb (kg)		Single Reach / 4500 (2040)	Single Reach / 4500 (2040)	Single Reach / 4500 (2040)
Total Weight (without battery)	lb (kg)		6364 (2887)	6414 (2909)	6514 (2955)
Operator Position			Stand-Up Rider	Stand-Up Rider	Stand-Up Rider
EXTERIOR DIMENSIONS			9BRU23 / 16.5	9BRU23 / 18.5	9BRU23 / 21.5
<b>A</b> Battery Compartment Size <sup>2</sup> (length)	in (mm)		16.5 (419)	18.5 (470)	21.5 (546)
<b>B</b> Maximum Fork Height <sup>1</sup>	in (mm)		366 (9296)	366 (9296)	366 (9296)
<b>C</b> Mast Lowered Height	in (mm)		131 (3327)	131 (3327)	131 (3327)
<b>D</b> Mast Extended Height	in (mm)		349 (8865)	349 (8865)	349 (8865)
<b>E</b> Free-Lift	in (mm)		88 (2235)	88 (2235)	88 (2235)
<b>F</b> Wheelbase	in (mm)		59.1 (1501)	61.1 (1552)	64.1 (1628)
<b>G</b> Head Length (length to fork face)	in (mm)		57.3 (1430)	59.3 (1506)	62.3 (1582)
<b>H</b> Truck Length (length to end of base legs)	in (mm)		78.2 (1986)	80.2 (2037)	83.2 (2113)
<b>I</b> Power Unit Length	in (mm)		37.5 (953)	39.5 (1003)	42.5 (1080)
<b>J</b> Power Unit Width	in (mm)		42.5 (1080)	42.5 (1080)	42.5 (1080)
<b>K</b> Power Unit Height <sup>3</sup>	in (mm)		51.5 (1308)	51.5 (1308)	51.5 (1308)
<b>L</b> Carriage Width	in (mm)		32 (813)	32 (813)	32 (813)
<b>M</b> Load Backrest Height	in (mm)		48 (1220)	48 (1220)	48 (1220)
<b>N</b> Tilt Range (forward / backward)	deg		3 / 4.5	3 / 4.5	3 / 4.5
<b>O</b> Overhead Guard Height <sup>4</sup>	in (mm)		90.81 (2307)	90.81 (2307)	90.81 (2307)
<b>P</b> Base Legs Opening (inside dimensions)	in (mm)		33 - 50 (838 - 1270)	33 - 50 (838 - 1270)	33 - 50 (838 - 1270)
<b>Q</b> Base Legs Overall Width (outside dimensions)	in (mm)		44 - 61 (1118 - 1550)	44 - 61 (1118 - 1550)	44 - 61 (1118 - 1550)
Base Leg Width	in (mm)		5.5 (140)	5.5 (140)	5.5 (140)
Fork Size (T x W x L)	in (mm)		1.75 x 4 x 42 (45 x 100 x 1070)	1.75 x 4 x 42 (45 x 100 x 1070)	1.75 x 4 x 42 (45 x 100 x 1070)
<b>R</b> Fork Adjustment (minimum / maximum)	in (mm)		15 (381) / 30 (762)	15 (381) / 30 (762)	15 (381) / 30 (762)
<b>S</b> Step Height	in (mm)		9 (229)	9 (229)	9 (229)
<b>T</b> Battery Roller Height	in (mm)		7 (175)	7 (175)	7 (175)
<b>U</b> Bumper to Centerline of Drive Wheel	in (mm)		11.35 (288)	11.35 (288)	11.35 (288)
<b>V</b> Underclearance (centerline of wheelbase)	in (mm)		2 (50)	2 (50)	2 (50)
Reach Stroke	in (mm)		22.75 (578)	22.75 (578)	22.75 (578)
Maximum Reach	in (mm)		28.5 (724)	28.5 (724)	28.5 (724)
<b>W</b> Outside Turning Radius	in (mm)		74.2 (1885)	76.2 (1935)	79.2 (2012)
PERFORMANCE DATA			9BRU23 / 16.5	9BRU23 / 18.5	9BRU23 / 21.5
Maximum Travel Speed	Full Load	mph (km/h)	7.5 (12.1)	7.5 (12.1)	7.5 (12.1)
	No Load	mph (km/h)	7.5 (12.1)	7.5 (12.1)	7.5 (12.1)
Lifting Speed	Full Load	fpm (mm/sec)	65 (330)	65 (330)	65 (330)
	No Load	fpm (mm/sec)	115 (584)	115 (584)	115 (584)
Lowering Speed	Full Load	fpm (mm/sec)	110 (559)	110 (559)	110 (559)
	No Load	fpm (mm/sec)	110 (559)	110 (559)	110 (559)
Out of Free-Lift		mph (km/h)	0 - 3.5 (0 - 5.6)	0 - 3.5 (0 - 5.6)	0 - 3.5 (0 - 5.6)
Maximum Reach / Retract	Full Load	sec	4.8	4.8	4.8
	No Load	sec	4.8	4.8	4.8
POWER SYSTEM			9BRU23 / 16.5	9BRU23 / 18.5	9BRU23 / 21.5
Battery Type			Lead Acid	Lead Acid	Lead Acid
Voltage / Capacity (6-hour ratings)	Maximum	V / AH	36 / 1240	36 / 1240	36 / 1240
	Weight	lb (kg)	2000 (907)	2300 (1043)	2600 (1179)
Electric Motors	Drive	hp (kw)	7.1 (5.3)	7.1 (5.3)	7.1 (5.3)
	Load Handling	hp (kw)	17.3 (12.9)	17.3 (12.9)	17.3 (12.9)
CONTROL TYPE			9BRU23 / 16.5	9BRU23 / 18.5	9BRU23 / 21.5
Drive			AC	AC	AC
Load Handling			AC	AC	AC
Power Steering			Transistor	Transistor	Transistor
TIRES			9BRU23 / 16.5	9BRU23 / 18.5	9BRU23 / 21.5
Tire Type			Polyurethane	Polyurethane	Polyurethane
Wheels (x = driven)	Drive / Caster / Load		1x / 1 / 4	1x / 1 / 4	1x / 1 / 4
	Drive	in (mm)	13.5 x 6.0 (345 x 152.4)	13.5 x 6.0 (345 x 152.4)	13.5 x 6.0 (345 x 152.4)
Size (diameter x width)	Caster	in (mm)	8 x 4 (203 x 102)	8 x 4 (203 x 102)	8 x 4 (203 x 102)
	Load	in (mm)	5 x 3.63 (127 x 92)	5 x 3.63 (127 x 92)	5 x 3.63 (127 x 92)
Suspension			Spring Loaded	Spring Loaded	Spring Loaded
Grade Clearance	%		14	14	14
Brake Type			Electric Disc	Electric Disc	Electric Disc

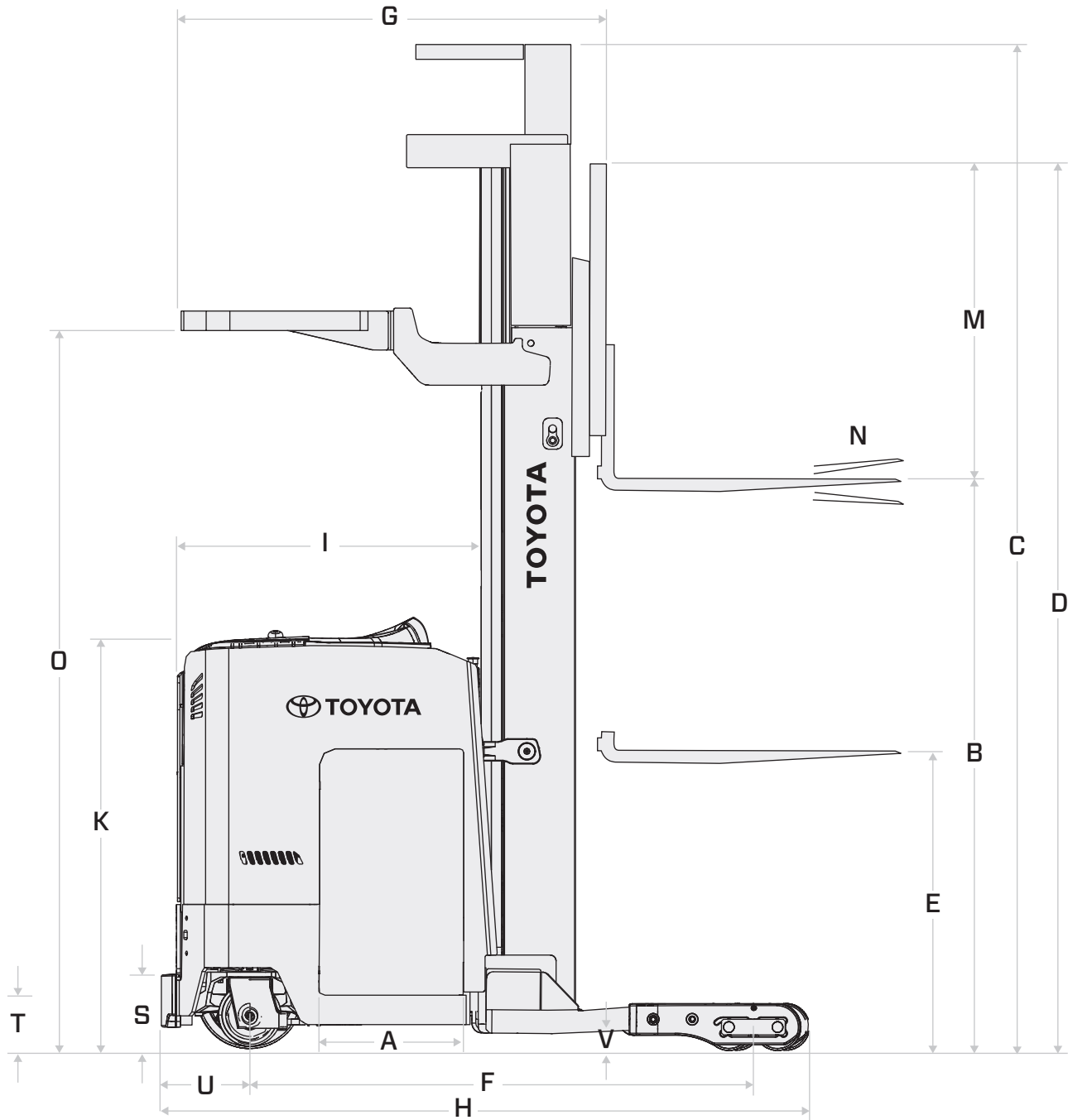
1 Please refer to the Mast Specifications & Rated Capacities charts.  
 2 Please refer to the Battery Compartment Specification Chart.  
 3 Add 8.5" (216 mm) for optional extended operator backrest.  
 4 Overhead guard height with FSV 89" / 193" mast is 88.75" (2254 mm).

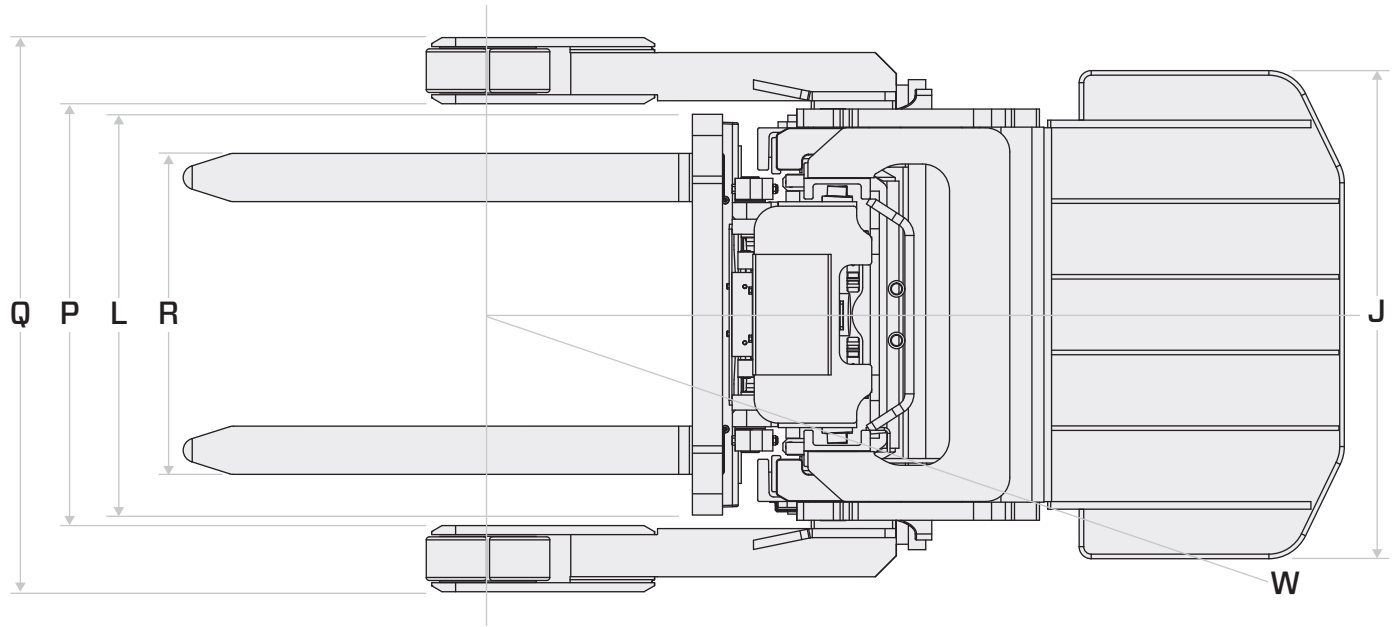
MODEL NUMBERS / BATTERY COMPARTMENT SIZE

GENERAL DATA			98DRU15 / 16.5	98DRU15 / 18.5	98DRU15 / 21.5
Type / Load Capacity <sup>1</sup> (with 24" load center)	lb (kg)		Double Reach / 3000 (1360)	Double Reach / 3000 (1360)	Double Reach / 3000 (1360)
Total Weight (without battery)	lb (kg)		6608 (2997)	6658 (3020)	6758 (3065)
Operator Position			Stand-Up Rider	Stand-Up Rider	Stand-Up Rider
EXTERIOR DIMENSIONS			98DRU15 / 16.5	98DRU15 / 18.5	98DRU15 / 21.5
<b>A</b> Battery Compartment Size <sup>2</sup> (length)	in (mm)		16.5 (419)	18.5 (470)	21.5 (546)
<b>B</b> Maximum Fork Height <sup>1</sup>	in (mm)		366 (9296)	366 (9296)	366 (9296)
<b>C</b> Mast Lowered Height	in (mm)		135 (3429)	135 (3429)	135 (3429)
<b>D</b> Mast Extended Height	in (mm)		350 (7671)	350 (7671)	350 (7671)
<b>E</b> Free-Lift	in (mm)		96 (2438)	96 (2438)	96 (2438)
<b>F</b> Wheelbase	in (mm)		61.6 (1565)	63.6 (1615)	66.6 (1692)
<b>G</b> Head Length (length to fork face)	in (mm)		62 (1575)	64 (1626)	67 (1702)
<b>H</b> Truck Length (length to end of base legs)	in (mm)		83.3 (2116)	85.3 (2167)	88.3 (2243)
<b>I</b> Power Unit Length	in (mm)		37.5 (953)	39.5 (1003)	42.5 (1080)
<b>J</b> Power Unit Width	in (mm)		42.5 (1080)	42.5 (1080)	42.5 (1080)
<b>K</b> Power Unit Height <sup>3</sup>	in (mm)		51.5 (1308)	51.5 (1308)	51.5 (1308)
<b>L</b> Carriage Width	in (mm)		32 (813)	32 (813)	32 (813)
<b>M</b> Load Backrest Height	in (mm)		48 (1219)	48 (1219)	48 (1219)
<b>N</b> Tilt Range (forward / backward)	deg		3 / 4.5	3 / 4.5	3 / 4.5
<b>O</b> Overhead Guard Height <sup>4</sup>	in (mm)		90.81 (2307)	90.81 (2307)	90.81 (2307)
<b>P</b> Base Legs Opening (inside dimensions)	in (mm)		33 - 50 (838 - 1270)	33 - 50 (838 - 1270)	33 - 50 (838 - 1270)
<b>Q</b> Base Legs Overall Width (outside dimensions)	in (mm)		43 - 60 (1092 - 1524)	43 - 60 (1092 - 1524)	43 - 60 (1092 - 1524)
Base Leg Width	in (mm)		5 (127)	5 (127)	5 (127)
Fork Size (T x W x L)	in (mm)		1.75 x 4 x 42 (45 x 100 x 1070)	1.75 x 4 x 42 (45 x 100 x 1070)	1.75 x 4 x 42 (45 x 100 x 1070)
<b>R</b> Fork Adjustment (minimum / maximum)	in (mm)		15 (381) / 30 (762)	15 (381) / 30 (762)	15 (381) / 30 (762)
<b>S</b> Step Height	in (mm)		9 (229)	9 (229)	9 (229)
<b>T</b> Battery Roller Height	in (mm)		7 (175)	7 (175)	7 (175)
<b>U</b> Bumper to Centerline of Drive Wheel	in (mm)		11.35 (288)	11.35 (288)	11.35 (288)
<b>V</b> Underclearance (centerline of wheelbase)	in (mm)		2 (50)	2 (50)	2 (50)
Reach Stroke	in (mm)		42.75 (1086)	42.75 (1086)	42.75 (1086)
Maximum Reach	in (mm)		53.25 (1352)	53.25 (1352)	53.25 (1352)
<b>W</b> Outside Turning Radius	in (mm)		75.6 (1920)	77.6 (1971)	80.6 (2047)
PERFORMANCE DATA			98DRU15 / 16.5	98DRU15 / 18.5	98DRU15 / 21.5
Maximum Travel Speed	Full Load	mph (km/h)	7.5 (12.1)	7.5 (12.1)	7.5 (12.1)
	No Load	mph (km/h)	7.5 (12.1)	7.5 (12.1)	7.5 (12.1)
Lifting Speed	Full Load	fpm (mm/sec)	75 (381)	75 (381)	75 (381)
	No Load	fpm (mm/sec)	110 (559)	110 (559)	110 (559)
Lowering Speed	Full Load	fpm (mm/sec)	110 (559)	110 (559)	110 (559)
	No Load	fpm (mm/sec)	110 (559)	110 (559)	110 (559)
Out of Free-Lift		mph (km/h)	0 - 3.5 (0 - 5.6)	0 - 3.5 (0 - 5.6)	0 - 3.5 (0 - 5.6)
Maximum Reach / Retract	Full Load	sec	5.0	5.0	5.0
	No Load	sec	5.0	5.0	5.0
POWER SYSTEM			98DRU15 / 16.5	98DRU15 / 18.5	98DRU15 / 21.5
Battery Type			Lead Acid	Lead Acid	Lead Acid
Voltage / Capacity (6-hour ratings)	Maximum	V / AH	36 / 1240	36 / 1240	36 / 1240
	Weight	lb (kg)	2000 (907)	2300 (1043)	2600 (1179)
Electric Motors	Drive	hp (kw)	7.1 (5.3)	7.1 (5.3)	7.1 (5.3)
	Load Handling	hp (kw)	17.3 (12.9)	17.3 (12.9)	17.3 (12.9)
CONTROL TYPE			98DRU15 / 16.5	98DRU15 / 18.5	98DRU15 / 21.5
Drive			AC	AC	AC
Load Handling			AC	AC	AC
Power Steering			Transistor	Transistor	Transistor
TIRES			98DRU15 / 16.5	98DRU15 / 18.5	98DRU15 / 21.5
Tire Type			Polyurethane	Polyurethane	Polyurethane
Wheels (x = driven)	Drive / Caster / Load		1x / 1 / 4	1x / 1 / 4	1x / 1 / 4
	Drive	in (mm)	13.5 x 6.0 (345 x 152.4)	13.5 x 6.0 (345 x 152.4)	13.5 x 6.0 (345 x 152.4)
Size (diameter x width)	Caster	in (mm)	8 x 4 (203 x 102)	8 x 4 (203 x 102)	8 x 4 (203 x 102)
	Load	in (mm)	5 x 3.63 (127 x 92)	5 x 3.63 (127 x 92)	5 x 3.63 (127 x 92)
Suspension			Spring Loaded	Spring Loaded	Spring Loaded
Grade Clearance			14	14	14
Brake Type			Electric Disc	Electric Disc	Electric Disc

1 Please refer to the Mast Specifications & Rated Capacities charts.  
 2 Please refer to the Battery Compartment Specification Chart.  
 3 Add 8.5" (216 mm) for optional extended operator backrest.  
 4 Overhead guard height with FSV 89" / 193" mast is 88.75" (2254 mm).

TRUCK DIMENSIONS





MAST SPECIFICATIONS

MAST TYPE	MAXIMUM FORK HEIGHT (TOP OF FORKS)	OVERALL HEIGHT		FREE-LIFT	TILT RANGE <sup>3</sup>	
		LOWERED	WITH STANDARD LOAD BACKREST	WITH STANDARD LOAD BACKREST	FWD	BWD
		in (mm)	in (mm)	in (mm)	deg	deg
<b>9BRU18</b>						
Full Free-Lift 3-Stage (FSV)	193 (4902) <sup>1</sup>	89 (2261)	241 (6121)	46 (1168)	3	4.5
	211 (5359)	95 (2413)	259 (6579)	52 (1321)	3	4.5
	217 (5512)	99 (2515)	265 (6731)	56 (1422)	3	4.5
	241 (6121)	107 (2718)	289 (7341)	64 (1626)	3	4.5
	250 (6350)	110 (2794)	298 (7569)	67 (1701)	3	4.5
	271 (6883)	119 (3023)	319 (8103)	76 (1930)	3	4.5
	280 (7112)	122 (3099)	328 (8331)	79 (2007)	3	4.5
301 (7645)	131 (3327)	349 (8865)	88 (2235)	3	4.5	
<b>9BDRU13</b>						
Full Free-Lift 3-Stage (FSV)	189 (4801) <sup>1</sup>	89 (2261)	237 (6020)	47 (1194)	3	4.5
	207 (5258)	95 (2413)	255 (6477)	57 (1448)	3	4.5
	216 (5486)	100 (2540)	264 (6706)	62 (1575)	3	4.5
	237 (6020)	107 (2718)	285 (7239)	68 (1727)	3	4.5
	252 (6401)	114 (2896)	300 (7620)	75 (1905)	3	4.5
	264 (6706)	118 (2997)	312 (7925)	79 (2007)	3	4.5
<b>9BRU23</b>						
Full Free-Lift 3-Stage (FSV)	193 (4902) <sup>2</sup>	89 (2260)	241 (6121)	46 (1168)	3	4.5
	211 (5359)	95 (2413)	259 (6579)	52 (1321)	3	4.5
	226 (5740)	102 (2591)	274 (6960)	59 (1499)	3	4.5
	241 (6121)	107 (2718)	289 (7341)	64 (1626)	3	4.5
	250 (6350)	110 (2794)	298 (7569)	67 (1702)	3	4.5
	268 (6807)	118 (2997)	316 (8026)	75 (1905)	3	4.5
	280 (7112)	122 (3099)	328 (8331)	79 (2007)	3	4.5
	301 (7645)	131 (3327)	349 (8865)	88 (2235)	3	4.5
	321 (8153)	142 (3607)	369 (9373)	100 (2540)	3	4.5
	330 (8382)	146 (3708)	378 (9601)	103 (2616)	3	4.5
	336 (8534)	148 (3759)	384 (9754)	105 (2667)	3	4.5
	348 (8839)	152 (3861)	396 (10058)	109 (2769)	3	4.5
	360 (9144)	156 (3962)	408 (10363)	113 (2870)	3	4.5
	366 (9296)	158 (4013)	414 (10516)	115 (2921)	3	4.5
<b>9BDRU15</b>						
Full Free-Lift 3-Stage (FSV)	189 (4801) <sup>1</sup>	89 (2261)	237 (6020)	47 (1194)	3	4.5
	207 (5258)	95 (2413)	255 (6477)	57 (1448)	3	4.5
	216 (5486)	100 (2540)	264 (6706)	62 (1575)	3	4.5
	237 (6020)	107 (2718)	285 (7239)	68 (1727)	3	4.5
	252 (6401)	114 (2896)	300 (7620)	75 (1905)	3	4.5
	264 (6706)	118 (2997)	312 (7925)	79 (2007)	3	4.5
	276 (7010)	122 (3099)	324 (8230)	83 (2108)	3	4.5
	288 (7315)	128 (3251)	336 (8534)	89 (2261)	3	4.5
	302 (7671)	135 (3429)	350 (8890)	96 (2438)	3	4.5
	315 (8001)	141 (3581)	363 (9220)	99 (2515)	3	4.5
	321 (8153)	142 (3607)	369 (9373)	100 (2540)	3	4.5
	330 (8382)	146 (3708)	378 (9601)	103 (2616)	3	4.5
	336 (8534)	148 (3759)	384 (9754)	105 (2667)	3	4.5
	348 (8839)	152 (3861)	396 (10058)	109 (2769)	3	4.5
	360 (9144)	156 (3962)	408 (10363)	113 (2870)	3	4.5
	366 (9296)	158 (4013)	414 (10516)	115 (2921)	3	4.5

1 Overhead guard height with FSV 89"; 192" mast is 88.75" (2254 mm).  
 2 Overhead guard height with FSV 89"; 189" mast is 88.75" (2254 mm).  
 3 Tilting load backrest.

Note: Height of standard load backrest is 48" (1220 mm).

## aisle width requirements for right-angle stacking

### 9BRU18

		Load Width					
		in (mm)	40 (1016)	44 (1117)	48 (1219)	54 (1372)	60 (1524)
Load Length	30 (762)	in (mm)	82.5 (2096)	82.5 (2096)	82.5 (2096)	82.5 (2096)	82.5 (2096)
	36 (914)	in (mm)	82.5 (2096)	82.5 (2096)	82.5 (2096)	82.5 (2096)	82.5 (2096)
	40 (1016)	in (mm)	87 (2210)	86.5 (2197)	86 (2184)	85.2 (2164)	84.4 (2144)
	44 (1118)	in (mm)	92 (2337)	91.5 (2324)	91 (2311)	90.3 (2294)	89.6 (2276)
	48 (1219)	in (mm)	96.7 (2456)	96.3 (2446)	95.8 (2433)	95.2 (2418)	94.6 (2403)
	54 (1372)	in (mm)	103.5 (2629)	103.1 (2619)	102.8 (2611)	102.2 (2596)	101.7 (2583)
	60 (1524)	in (mm)	110.1 (2797)	109.8 (2789)	109.4 (2779)	109 (2769)	108.5 (2756)

Minimum aisle width = 14.5" (368 mm) battery compartment.  
4" (102 mm) clearance each side of load.

Add 2" (51 mm) for 16.5" (419 mm) battery compartment.  
Add 4" (102 mm) for 18.5" (470 mm) battery compartment.  
Add a minimum of 6" (152 mm) to 12" (305 mm) for easy maneuvering.  
For base leg inner dimension greater than 41," add 2" to aisle width requirements.

### 9BDRU13

		Load Width					
		in (mm)	40 (1016)	44 (1117)	48 (1219)	54 (1372)	60 (1524)
Load Length	40 (1016)	in (mm)	94 (2388)	93.6 (2377)	93.1 (2365)	92.4 (2347)	91.7 (2329)
	44 (1118)	in (mm)	98.7 (2507)	98.3 (2497)	97.9 (2487)	97.3 (2471)	96.6 (2454)
	48 (1219)	in (mm)	103.3 (2624)	102.9 (2614)	102.5 (2604)	102 (2591)	101.4 (2576)

Minimum aisle width = 16.5" (419 mm) battery compartment.  
4" (102 mm) clearance each side of load.

**Note:** Aisle width values shown are based on a 42" (1067 mm) base leg opening (inside dimension).  
Subtract 2" (51 mm) for 14.5" (368 mm) battery compartment.  
Add a minimum of 6" (152 mm) to 12" (305 mm) for easy maneuvering.

### 9BRU23

		Load Width					
		in (mm)	40 (1016)	44 (1117)	48 (1219)	54 (1372)	60 (1524)
Load Length	30 (762)	in (mm)	85.3 (2167)	85.3 (2167)	85.3 (2167)	85.3 (2167)	85.3 (2167)
	36 (914)	in (mm)	85.3 (2167)	85.3 (2167)	85.3 (2167)	85.3 (2167)	85.3 (2167)
	40 (1016)	in (mm)	90 (2286)	89.5 (2273)	88.9 (2258)	88.7 (2253)	87.3 (2217)
	44 (1118)	in (mm)	95 (2413)	94.5 (2400)	94 (2388)	93.3 (2370)	92.6 (2352)
	48 (1219)	in (mm)	99.7 (2532)	99.3 (2522)	98.9 (2512)	98.3 (2497)	97.6 (2479)
	54 (1372)	in (mm)	106.6 (2708)	106.2 (2697)	105.9 (2690)	105.3 (2675)	104.8 (2662)
	60 (1524)	in (mm)	113.2 (2875)	112.9 (2868)	112.6 (2860)	112.1 (2847)	111.6 (2835)

Minimum aisle width = 16.5" (419 mm) battery compartment.  
4" (102 mm) clearance each side of load.

Add 2" (51 mm) for 18.5" battery compartment.  
Add 5" (127 mm) for 21.5" battery compartment.  
Add a minimum of 6" (152 mm) to 12" (305 mm) for easy maneuvering.  
For base leg inner dimension greater than 41," add 2" to aisle width requirements.

### 9BDRU15

		Load Width					
		in (mm)	40 (1016)	44 (1117)	48 (1219)	54 (1372)	60 (1524)
Load Length	40 (1016)	in (mm)	96 (2438)	95.5 (2426)	95 (2413)	94.4 (2398)	93.7 (2380)
	44 (1118)	in (mm)	100.7 (2558)	100.3 (2548)	99.8 (2535)	99.2 (2520)	98.6 (2504)
	48 (1219)	in (mm)	105.2 (2672)	104.9 (2664)	104.5 (2654)	103.9 (2639)	103.4 (2626)

Minimum aisle width = 16.5" (419 mm) battery compartment.  
4" (102 mm) clearance each side of load.

Add 2" (51 mm) for 18.5" battery compartment.  
Add 5" (127 mm) for 21.5" battery compartment.  
Add a minimum of 6" (152 mm) to 12" (305 mm) for easy maneuvering.  
**Note:** Aisle width values shown are based on a 42" (1067 mm) base leg opening (inside dimension).



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