

# UNICARRIERS®

## □ FORKLIFT □



Walkie Straddle Stackers

24 Volt AC-Powered  
3,000 & 4,000 lbs. Capacities

WSX Series

S P E C I F I C A T I O N S

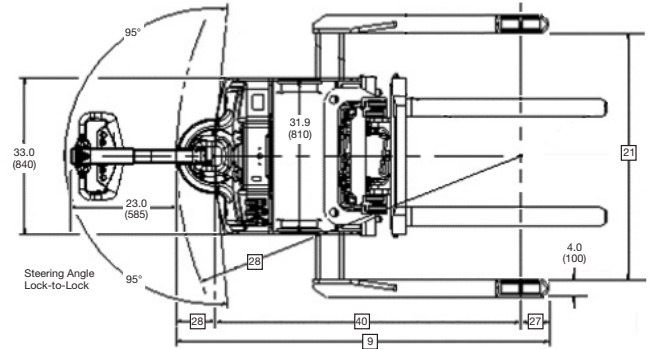
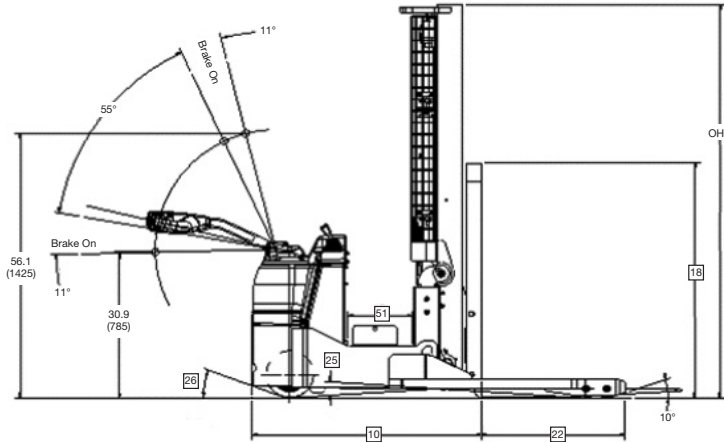
## MAIN TRUCK SPECIFICATIONS

CHARACTERISTICS	1	Manufacturer's Name		UniCarriers	UniCarriers	UniCarriers	UniCarriers		
	2	Model	Model designation	WSX30S	WSX30	WSX40S	WSX40		
	3	Long model code		WSXT2W6S30V	WSXT2W6G30V	WSXT2W6S40V	WSXT2W6G40V		
DIMENSIONS	4	Rated Load Capacity	At 24" (610) load center	lb (kg)	3000 (1360)	3000 (1360)	4000 (1810)	4000 (1810)	
	5	Power Type	Electric	voltage	24v	24v	24v	24v	
	6	Operator Type			Walkie Straddle	Walkie Straddle	Walkie Straddle	Walkie Straddle	
	7	Tire Type	Drive / load		Rubber / Poly	Rubber / Poly	Rubber / Poly	Rubber / Poly	
	8	Wheels	Number - drive / load	x=driven	1 x / 4	1 x / 4	1 x / 4	1 x / 4	
	9	Overall Dimensions	Length - to tip of base legs	in (mm)	74.0 (1880)	78.5 (1995)	74.0 (1880)	78.5 (1995)	
	10		Length - to face of forks	in (mm)	44.2 (1120)	48.7 (1235)	44.2 (1120)	48.7 (1235)	
	11		Width - Power Head	in (mm)	33 (840)	33 (840)	33 (840)	33 (840)	
	12	Mast (3F385)	Maximum fork height (MFH)	in (mm)	152 (3850)	152 (3850)	152 (3850)	152 (3850)	
	13		Fork lowered height (TOF)	in (mm)	1.5 (40)	1.5 (40)	1.5 (40)	1.5 (40)	
	14		Mast lowered (OHL)	in (mm)	71.3 (1815)	71.3 (1815)	71.3 (1815)	71.3 (1815)	
	15		Mast extended with LBR	in (mm)	200.9 (5105)	200.9 (5105)	200.9 (5105)	200.9 (5105)	
	16		Standard freelif with LBR	in (mm)	23.3 (590)	23.3 (590)	23.3 (590)	23.3 (590)	
	17		Width - Class II carriage	in (mm)	32.4 (825)	32.4 (825)	32.4 (825)	32.4 (825)	
	18		Height - top of standard LBR	in (mm)	48 (1220)	48 (1220)	48 (1220)	48 (1220)	
	19	Tilt Angle	Standard mast - fwd/back	degree	-	-	-	-	
	20	Outrigger	Height	in (mm)	4 (100)	4 (100)	4 (100)	4 (100)	
	21		Width - Nominal I.D. min-max (2" increments)	in (mm)	36 - 50 (915 - 1270)	36 - 50 (915 - 1270)	36 - 50 (915 - 1270)	36 - 50 (915 - 1270)	
	22		Length (face of fork - tip of base legs)	in (mm)	29.8 (760)	29.8 (760)	29.8 (760)	29.8 (760)	
	23	Forks	Length x width x thickness	in (mm)	42 x 4 x 1.5 (1070 x 100 x 40)	42 x 4 x 1.5 (1070 x 100 x 40)	42 x 4 x 1.5 (1070 x 100 x 40)	42 x 4 x 1.5 (1070 x 100 x 40)	
	24		Spread (o.d.) - Min. / Max.	in (mm)	8 (205) / 31.6 (800)	8 (205) / 31.6 (800)	8 (205) / 31.6 (800)	8 (205) / 31.6 (800)	
	25	Grade Clearance	Ramp breakover angle	%	13.9	12.8	13.9	12.8	
	26		Departure angle	%	36	36	36	36	
	27	Overhang	Front / Rear	in (mm)	6.4 (165) / 7.7 (195)	6.4 (165) / 7.7 (195)	6.4 (165) / 7.7 (195)	6.4 (165) / 7.7 (195)	
	28	Turning Radius	Minimum outside	in (mm)	67.8 (1723)	72.4 (1838)	67.8 (1723)	72.4 (1838)	
	29	Min Right Angle Stack	42" ID Base Legs, Add load length & clearance	in (mm)	See Right Angle Stacking Chart	See Right Angle Stacking Chart	See Right Angle Stacking Chart	See Right Angle Stacking Chart	
	PERFORMANCE	30	Speeds Maximum	Travel - loaded / unloaded	mph (km/h)	3.6 (5.8) / 3.7 (5.9)	3.6 (5.8) / 3.7 (5.9)	3.6 (5.8) / 3.7 (5.9)	3.6 (5.8) / 3.7 (5.9)
		31		Lift - loaded / unloaded	fpm (mm/sec)	30 (152) / 50 (254)	30 (152) / 50 (254)	30 (152) / 50 (254)	30 (152) / 50 (254)
		32		Lowering - loaded / unloaded	fpm (mm/sec)	50 (254) / 50 (254)	50 (254) / 50 (254)	50 (254) / 50 (254)	50 (254) / 50 (254)
33		Drawbar Pull Maximum	Full load / empty - 3 min rating	lb (kN)	830(3.7) / 888 (3.9)	830(3.7) / 888 (3.9)	830(3.7) / 888 (3.9)	830(3.7) / 888 (3.9)	
34		Gradeability Maximum	Full load - 5 min rating	%	11.4	11.4	11.4	11.4	
WEIGHT	35	Truck Weight	No Load (max. battery)	lb (kg)	2735 (1240)	2800 (1270)	2735 (1240)	2800 (1270)	
	36	Weight Distribution	Full load - Drive / Load wheel each (max. battery)	lb (kg)	2075/2215 (945/1005)	2200/2195 (1000/995)	2000/2750 (910/1250)	2180/2690 (990/1225)	
	37		No load - Drive / Load wheel each (max. battery)	lb (kg)	2140/645 (970/285)	2170/700 (985/320)	2140/665 (970/300)	2170/700 (985/320)	
CHASSIS & WHEELS	38	Tire Size	Drive tire	in (mm)	10 x 5 (255 x 127)	10 x 5 (255 x 127)	10 x 5 (255 x 127)	10 x 5 (255 x 127)	
	39		Load wheels	in (mm)	4 x 2.75 (265 x 100)	4 x 2.75 (265 x 100)	4 x 2.75 (265 x 100)	4 x 2.75 (265 x 100)	
	40	Wheelbase		in (mm)	59.9 (1521)	64.4 (1636)	59.9 (1521)	64.4 (1636)	
	41	Tread - Center of Tire	Load wheels (w/ 42" base leg)	in (mm)	48.2 (1224)	48.2 (1224)	48.2 (1224)	48.2 (1224)	
	42	Power Unit Height		in (mm)	34.7 (882)	34.7 (882)	34.7 (882)	34.7 (882)	
	43	Ground Clearance	Lowest point - skid pad	in (mm)	0.6 (15)	0.6 (15)	0.6 (15)	0.6 (15)	
	44		Under frame, center of wheelbase	in (mm)	1.85 (47)	1.85 (47)	1.85 (47)	1.85 (47)	
	45	Brake	Service	type	Regen	Regen	Regen	Regen	
	46		Parking	type	Auto-Applied / Electronic Release	Auto-Applied / Electronic Release	Auto-Applied / Electronic Release	Auto-Applied / Electronic Release	
DRIVE LINE	47	Steering	On-demand		Manual Tiller Arm	Manual Tiller Arm	Manual Tiller Arm	Manual Tiller Arm	
	48	Traction Motor	AC	kW (HP)	3.9 (5.2)	3.9 (5.2)	3.9 (5.2)	3.9 (5.2)	
	49	Pump Motor	DC Series - Rating @ 20% duty cycle	kW (HP)	4.7 (6.4)	4.7 (6.4)	4.7 (6.4)	4.7 (6.4)	
	50	Hydraulic Control <sup>1</sup>			Electric	Electric	Electric	Electric	
BATTERY	51	Compartment Size <sup>2</sup>	W x L x H ("X" x "Y" x "Z") - Max.	in (mm)	31.9 x 8.9 x 32 (810 x 225 x 810)	31.9 x 13.5 x 32 (810 x 340 x 815)	31.9 x 8.9 x 32 (810 x 225 x 810)	31.9 x 13.5 x 32 (810 x 340 x 815)	
	52	Battery	Lead acid	Type	E	E	E	E	
	53		Capacity - Max.	Ah (6-hr)	840	840	840	840	
	54	Weight	Minimum / Maximum	lb (kg)	320 / 900 (145 / 405)	950 / 1500 (430 / 680)	320 / 900 (145 / 405)	950 / 1500 (430 / 680)	
	55	Lead Length	Position B / SB-175 Red	in (mm)	20 (505)	20 (505)	20 (505)	20 (505)	

<sup>1</sup> Optional Manual Lift/Lower or Aux. Lever controls are available.

<sup>2</sup> WSX30, WSX40 - Battery compartment size with adjustable retainers: 30.9 x 13.5 x 32  
with optional rollers & side gates: 31.1 x 13.5 x 31  
WSX30S, WSX40S - Battery compartment size with adjustable retainers: 30.9 x 9.5 x 32

## DIMENSIONS



## RIGHT ANGLE STACKING AISLE REQUIREMENTS

### WSX30S, WSX40S with 42" Base Legs

Load Width in (mm)	Load Length - in (mm)					
	30 (760)	32 (810)	36 (915)	40 (1015)	42 (1070)	48 (1220)
30 (760)	75 (1905)	75 (1905)	75 (1905)	75 (1905)	75 (1905)	84 (2135)
32 (810)	75 (1905)	75 (1905)	75 (1905)	75 (1905)	75 (1905)	85 (2160)
36 (915)	75 (1905)	75 (1905)	75 (1905)	75 (1905)	76 (1930)	88 (2235)
40 (1015)	75 (1905)	75 (1905)	75 (1905)	76 (1930)	81 (2055)	90 (2285)

Based on 1" clearance between base leg and adjacent pallets. Aisle dimensions are minimum.  
Recommend 6"-10" additional clearance for ease of operation.

### WSX30, WSX40 with 42" Base Legs

Load Width in (mm)	Load Length - in (mm)					
	30 (760)	32 (810)	36 (915)	40 (1015)	42 (1070)	48 (1220)
30 (760)	80 (2030)	80 (2030)	80 (2030)	80 (2030)	80 (2030)	89 (2260)
32 (810)	80 (2030)	80 (2030)	80 (2030)	80 (2030)	80 (2030)	90 (2285)
36 (915)	80 (2030)	80 (2030)	80 (2030)	80 (2030)	80 (2030)	92 (2340)
40 (1015)	80 (2030)	80 (2030)	80 (2030)	81 (2055)	85 (2160)	94 (2390)

Based on 1" clearance between base leg and adjacent pallets. Aisle dimensions are minimum.  
Recommend 6"-10" additional clearance for ease of operation.

## 90° EQUAL INTERSECTING AISLE REQUIREMENTS

Base Leg - in (mm)			90° Intersection Aisle - in (mm)	
Nominal	Actual	Outer Dimension Actual	WSX30S, WSX40S	WSX30, WSX40
			36 (915)	36.2 (920)
38 (965)	38.2 (970)	46.3 (1175)	66 (1675)	68 (1725)
40 (1015)	40.2 (1020)	48.3 (1230)	67 (1700)	69 (1755)
42 (1070)	42.2 (1070)	50.3 (1280)	68 (1725)	70 (1780)
44 (1120)	44.2 (1125)	52.3 (1330)	69 (1755)	71 (1805)
46 (1170)	46.2 (1175)	54.3 (1380)	70 (1780)	72 (1830)
48 (1220)	48.1 (1220)	56.2 (1430)	71 (1810)	74 (1880)
50 (1270)	50.1 (1275)	58.2 (1480)	72 (1835)	75 (1905)

Based on 48" load length and 1" clearance between base leg and adjacent pallets. Aisle dimensions are minimum.  
Recommend 6"-10" additional clearance for ease of operation.

## MAST SPECIFICATIONS & RATED CAPACITIES

Mast Name	Maximum Fork Height	Overall Height				Free Lift		Tilt Angle	Rated Capacity at 24" (610) Load Center with 42" (1070mm) I.D. Outriggers			
		Lowered	Fully Extended		With LBR	Without LBR	Fwd/ Bkwd	WSX30S	WSX30	WSX40S	WSX40	
			With LBR	Without LBR								degrees
in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	degrees	lb (kg)	lb (kg)	lb (kg)	lb (kg)	
<b>TWO STAGE</b> <b>(Wide View)</b>	<b>2W270</b>	106 (2700)	71.3 (1815)	155.7 (3955)	130.0 (3305)	3.8 (95)	3.8 (95)	-	3000 (1350)	3000 (1350)	4000 (1800)	4000 (1800)
	<b>2W300</b>	118 (3000)	77.2 (1965)	167.5 (4255)	141.9 (3605)	3.8 (95)	3.8 (95)	-	3000 (1350)	3000 (1350)	4000 (1800)	4000 (1800)
	<b>2W330</b>	130 (3300)	83.2 (2115)	179.3 (4555)	153.7 (3905)	3.8 (95)	3.8 (95)	-	3000 (1350)	3000 (1350)	4000 (1800)	4000 (1800)
	<b>2W350</b>	138 (3500)	88.5 (2250)	187.2 (4755)	161.5 (4105)	3.8 (95)	3.8 (95)	-	3000 (1350)	3000 (1350)	4000 (1800)	4000 (1800)
<b>THREE STAGE</b> <b>(Full Free)</b>	<b>3F385</b>	152 (3850)	71.3 (1815)	200.9 (5105)	168.3 (4275)	23.3 (590)	46.9 (1190)	-	3000 (1350)	3000 (1350)	3900 (1770)	4000 (1800)
	<b>3F430</b>	169 (4300)	77.2 (1965)	218.7 (5555)	186.0 (4725)	29.2 (740)	52.8 (1340)	-	3000 (1350)	3000 (1350)	3300 (1495)	4000 (1800)
	<b>3F475</b>	187 (4750)	83.1 (2115)	236.4 (6005)	203.7 (5175)	35.1 (890)	58.7 (1490)	-	2700 (1225)	3000 (1350)	2700 (1225)	4000 (1800)
	<b>3F515</b>	203 (5150)	88.5 (2250)	252.3 (6410)	219.7 (5580)	40.4 (1025)	64.0 (1625)	-	1950 (885)	3000 (1350)	1950 (885)	3700 (1680)
	<b>3F550</b>	217 (5500)	93.4 (2375)	265.9 (6755)	233.3 (5930)	45.3 (1150)	68.9 (1750)	-	1750 (795)	3000 (1350)	1750 (795)	3500 (1585)

Base leg outrigger dimensions may affect truck capacity.

### STANDARD EQUIPMENT

- 24-volt electrical system
- Brushless AC drive motor and DC pump motor
- Electronic motor controller system with AC inverter
- Multifunction digital display includes battery discharge indicator with lift lockout, (3) hour meters, and fault-code display
- Digital CAN-bus communications
- Programmable performance parameters (requires service handset)
- Ergonomic control handle with butterfly travel speed control
- Fingertip control of electronic lift, lower, and horn buttons
- Electric horn
- On/off key switch
- Large reversing switch in handle
- Adjustable battery retainers
- SB-175 red battery connector
- Rubber drive tire
- Poly load wheels
- Reduced travel speed above free lift (for 3F mast or at approximately 47" for 2W mast)
- Regenerative braking
- Spring applied/electronically released brake system
- Return oil filter in hydraulic system
- Motor and controller thermal protection
- Powder-coat paint finish

### OPTIONAL EQUIPMENT

- Multi-function LCD display with:
  - PIN access
  - Selectable performance modes
  - BDI and speedometer
  - On-board diagnostics and troubleshooting
- Standard or polished and tapered forks in a variety of lengths
- Manual levers for lift, lower or auxiliary hydraulics control
- Side shifters and hosing
- Battery compartment rollers with side gates (for 13.5" battery models)
- Battery gate interlock switches
- Travel alarm
- On/off toggle switch
- Non-marking rubber, traction treaded rubber or flat poly drive tire options
- Mast mounted, low profile LED work lights
- Amber strobe light

### ERGONOMICS & OPERATOR COMFORT

A wide, 190° steering arc and large, sealed, ball-bearing steering mechanism allows exceptional turning with minimal effort. Spring-loaded handle and roomy steering control head promote effortless movement into the operating range. The control handle features tubular steel construction and the control head is constructed from a fiberglass-filled polymer composite, with internal steel reinforcements, for higher strength and increased durability.

Thumb or fingertip-actuated butterfly speed controls provide easy and precise operation. Ergonomic, fingertip layout of the soft-touch lift, lower and horn buttons delivers comfortable operation. Large switch on the end of the control head changes the truck's travel direction if operator contact is made.

Optional manual levers for lift/lower or auxiliary control are conveniently located on the top right of the power unit and provide smooth control for feathering of the load.

### EFFICIENT PERFORMANCE

Heavy-duty 5.2Hp, brushless, three-phase AC drive motor provides high power and torque to handle tough applications, with peak performance throughout the battery range. Longer run times per battery charge are achieved by using less energy per cycle.

Its advanced motor controller/AC inverter electronically distributes power as needed, to the AC drive motor, or DC pump motor, for enhanced efficiency. This system offers programmable regenerative neutral braking and proportional plugging. Its AC design eliminates forward and reverse contactors, and uses electronic travel speed control for precise, efficient performance.

A sealed, non-contact proximity switch detects when the forks are raised above free lift for 3F mast (or at approximately 47" for 2W mast) triggering the controller to automatically reduce travel speed to 1.0 mph (1.5 km/h).

### OPTIONAL MULT-FUNCTION DISPLAY

An optional multi-function LCD display offers PIN codes to restrict truck access, selectable performance modes for customized productivity, and a battery discharge indicator with graphic representation of remaining battery charge. Plus with on-board diagnostics, troubleshooting and adjustment.

### SMART ELECTRIC BRAKE

Electrical braking system utilizes regenerative motor torque prior to disc brake actuation, for less component wear and longer life. The spring-applied/electronically released disc brake system eliminates needed adjustments, for reduced maintenance. Brake actuation occurs when the handle is in the upper and lower braking range.

### MAST DESIGN

The WSX's flat face mast design features rolled steel channels, large cross sections, and thick inner rails for increased capacity retention. Side thrust rollers on the fork carriage are easily accessed for carriage adjustment. Bolt-on mast design allows flexibility of changing mast if alternate lift heights are desired. Removable mast also allows easier serviceability of mast components.

### HYDRAULICS

Heavy-duty DC motor, lift pump, and includes a check valve and flow regulator. Return line filtering protects the system against environmental contaminants.

### DRIVE UNIT ASSEMBLY

Quiet, spiral beveled gear drive system with sealed ball bearings, provides solid performance with low steer effort. Five-nut removal of the drive tire simplifies replacement when needed.

### FRAME ASSEMBLY

Rugged frame for tough applications. Powder coat paint for a durable, high gloss, scratch resistant finish.

### BATTERY COMPARTMENT

The battery compartment features unique clam-type steel battery retainers to reduce side-to-side movement, keeping the battery secure.

### EASE OF MAINTENANCE

Brushless AC drive motor uses fewer components and requires less maintenance for lower operating costs. Easily accessible, rotation sensing encoder is externally mounted on the drive motor for simplified replacement. Motor and controller feature thermal protection system to slow or shut down truck in response to high temperatures.

Digital CAN communication between the controller and control handle reduces the number of wires in the control handle harness, for reduced maintenance. Hall Effect speed and acceleration control sensor simplifies maintenance and limits downtime due to its non-contact design with few moving parts, and with no mechanical wiping action, potentiometers, or heaters. Elimination of directional and lift contactors, with enhanced thermal capabilities means optimum performance and minimal downtime.

One-piece cover with two-bolt removal makes access to the drive unit, and major components quick and easy. All lubrication fittings are easily accessible with the truck upright and the battery in place.



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