

CROWN

Specifications

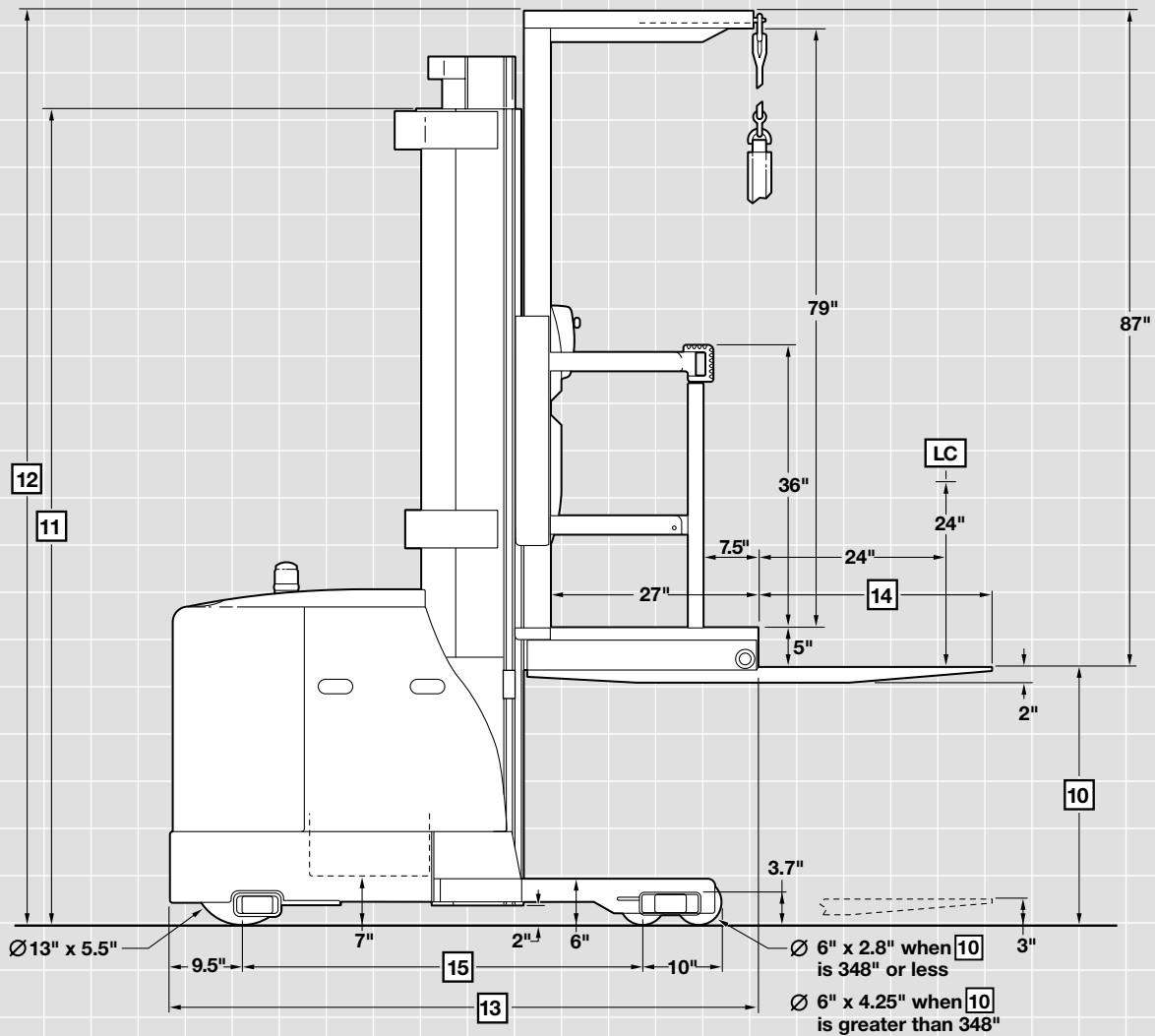
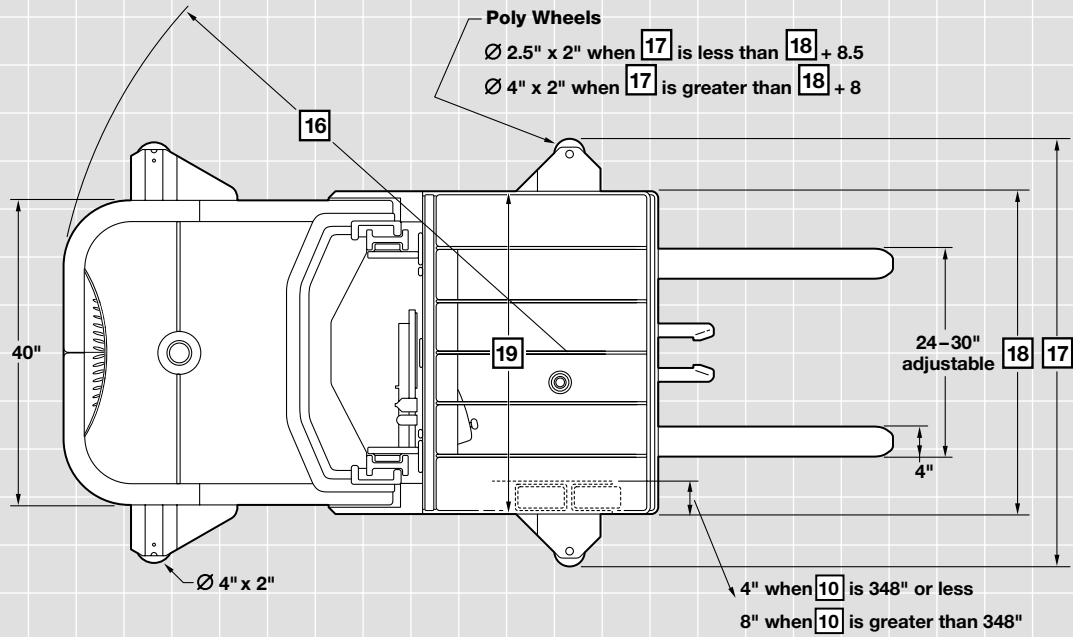
SP 3400 Series

Stockpicker

SP 3400

Series





General Information	1	Manufacturer		Crown Equipment Corporation	Crown Equipment Corporation		
	2	Model		SP 3405-30	SP 3410-30		
	3	Load Capacity*	lb	See Chart	See Chart		
	4	Load Center	Platform face to load CG	in	24	24	
	5	Power	Electric	Volts	24	24	
	6	Operator Type	Stand-up Rider		Stockpicker	Stockpicker	
	7	Tire Type	Load/Drive		Poly/Poly	Poly/Poly	
	8	Wheels (x = driven)	Load/Drive		4/1x	4/1x	
Dimensions	10	Lifting Height		in	See Chart	See Chart	
	13	Head Length	TL/TT	in	74.6/75.6	74.6/75.6	
	14	Forks	Standard	L x W x T	in	36 x 4 x 2	36 x 4 x 2
			Optional Lengths		in	30, 39, 42, 45, 48, 54, 60, 72, 84	30, 39, 42, 45, 48, 54, 60, 72, 84
	15	Wheelbase	TL/TT		in	52/51	52/51
16	Turning Radius	TL/TT		in	69/68	69/68	
Performance	20	Speed Travel		Empty/Loaded	mph	See Chart	See Chart
	21	Speed Lift	TL	Empty/Loaded	fpm	45/28	45/28
			TT	Empty/Loaded	fpm	40/26	40/26
	22	Speed Lower	TL	Empty/Loaded	fpm	40/38 Low, 80/75 High	40/38 Low, 80/75 High
TT			Empty/Loaded	fpm	40/38 Low, 80/75 High	40/38 Low, 80/75 High	
Battery	23	Battery	Type			Lead Acid	Lead Acid
			Min Weight/Max Amp			975/660	1520/1085
			Max Battery Size			13.12 x 31.75 x 23.25 High	14.25 x 36.25 x 31 High
24	Traction Motor	60 Min Rating		hp	3.5	3.5	

* Contact factory. Capacity may be subject to derating, depending upon lifting height, load center and fork length.

**4 hp drive motor optional.

				TL					
Capacity	10	Lifting Height	in	136	148	172	194	214	
	3	Load Capacity	SP 3405	lb	3000	3000	3000	3000	3000
			SP 3410	lb	3000	3000	3000	3000	3000
			SP 3420	lb	3000	3000	3000	3000	3000
SP 3450H			lb	na	na	na	na	na	
Mast		Free Lift	in	3	6	6	6	6	
	11	Collapsed Height	in	89.5	95	107	119	131	
	12	Extended Height	in	223	235	259	281	301	
	18	Straddle Width	in	42	42	42	42	42	
	19	Operator Compartment Width	in	42	42	42	42	42	
Truck Weight	17	Aisle Guide Wheel Range†	in	45.50 to 65.25	45.50 to 65.25	45.50 to 65.25	45.50 to 65.25	45.50 to 65.25	
		Truck Weight Without Battery	SP 3405	lb	5027	5086	5216	5504	5634
			SP 3410	lb	5027	5086	5216	5504	5634
			SP 3420	lb	5088	5147	5277	5565	5695
SP 3450H			lb	na	na	na	na	na	

† In .25" increments.

†† 48" straddle width on SP 3405 only.

SP 3400 Series

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Crown Equipment Corporation	Crown Equipment Corporation
SP 3420-30	SP 3450H-30
See Chart	See Chart
24	24
24	24
Stockpicker	Stockpicker
Poly/Poly	Poly/Poly
4/1x	4/1x
See Chart	See Chart
74.6/75.6	na/75.6
36 x 4 x 2	36 x 4 x 2
30, 39, 42, 45, 48, 54, 60, 72, 84	30, 39, 42, 45, 48, 54, 60, 72, 84
52/51	na/51
69/68	na/68
See Chart	See Chart
45/28 Low, 80/46 High	na
40/26 Low, 71/43 High	40/26 Low, 71/43 High
40/38 Low, 80/75 High	na
40/38 Low, 80/75 High	40/38 Low, 80/75 High
Lead Acid	Lead Acid
1520/1085	1520/1085
14.25 x 36.25 x 31 High	14.25 x 36.25 x 31 High
3.5**	4.0

Lift Height (inches)	Steered Wheel < 10° ⁽¹⁾			
	Power Unit First (PUF) ⁽²⁾			
	Travel Speed (mph) Empty/Loaded			
	SP 3405	SP 3410 SP 3420	Linear SP 3420	Linear SP 3450H
0-24	6.5	7.0 ⁽³⁾	7.0 ⁽³⁾	7.5
25-60	5.5	6.0	7.0-6.0 ⁽³⁾	7.5-6.5
61-120	3.3	3.8	6.0-3.8	6.5-4.5
121-150	2.2	2.7	3.8-2.7	4.5-3.5
151-180	1.2	1.9	2.7-1.9	3.5-2.5
181-192	1.2	1.5	1.9-1.5	2.5-2.2
193-222	1.2	1.5	1.5	2.2-1.5
223-366	1.2 ⁽⁴⁾	1.5 ⁽⁴⁾	1.5 ⁽⁴⁾	1.5

⁽¹⁾ As the steering angle increases beyond 10°, top travel speeds gradually reduce down to 50%. Steering angle is automatically limited to within 10° straight travel as indicated below:

- SP 3405 above 150"
- SP 3410 and SP 3420 above 180"
- SP 3420 (Linear Option) above 192"
- SP 3450H (Linear Standard) above 222"

⁽²⁾ From 0-60 inches, travel speeds in the Forks First (FF) direction of travel are approximately .5 mph less than travel speeds in the Power Unit First (PUF) direction.

⁽³⁾ On model SP 3420, 7.0 mph increases to 7.5 mph with optional high-speed motor (4 hp).

⁽⁴⁾ SP 3405 and SP 3410 available up to 240", SP 3420 up to 312".

TT								
195	210	240	276	294	312	330	348	366
3000	3000	3000	na	na	na	na	na	na
3000	3000	3000	na	na	na	na	na	na
3000	3000	3000	2000	1750	1500	na	na	na
na	na	na	2500	2350	2200	2050	1900	1750
3	8	20	32	38	44	56	62	68
89.5	95	107	119	125	131	143	149	155
283	298	328	364	382	400	418	436	454
42	42	42††	48	54	54	56	60	60
42	42	42	48	54	54	54	60	60
45.50 to 65.25	45.50 to 65.25	45.50 to 65.25	48.75 to 71.25	54.75 to 77.25	54.75 to 77.25	56.75 to 79.25	60.75 to 83.25	60.75 to 83.25
5601	5686	6200	na	na	na	na	na	na
5601	5686	5872	na	na	na	na	na	na
5662	5747	5933	6354	6536	6629	na	na	na
na	na	na	6444	6626	6718	6914	7060	7490

Standard Equipment

1. 24-volt electrical system
2. Crown's Access 3™ traction control system
3. Separately excited motor technology
4. Start up and run time diagnostics
5. Programmable performance features
6. Information Display Panel in operator platform
7. Elapsed time counter
8. Battery discharge indicator with lift interrupt
9. Steer tire direction indicator
10. Hour meters—hours recorded for total operating, traction, lift, lower and steer
11. 14.25" battery compartment (13.12" on SP 3405)
12. 350 amp battery connector (175 amp on SP 3405)
13. 2" diameter battery compartment rollers
14. Top battery access for service
15. Color-coded wiring
16. Key switch
17. Horn
18. Strobe light
19. Electronic steering
20. Emergency power cut-out
21. Hinged side gates with power disconnect
22. Two-speed lower with soft start and stop
23. Intelligent Braking System (IBS) with low-profile brake pedal
24. 6" diameter tandem load wheels
25. Removable steel battery side covers
26. Adjustable battery retainer
27. Hinged, lift off steel power unit doors
28. Platform cushion
29. Soft urethane twist grip with "cam grip"
30. 10° angled steer wheel with soft feel spinner
31. Clear visibility platform window
32. Clear visibility mast design
33. Storage compartment
34. Operator belt and lanyard
35. Pallet clamp
36. Crown's InfoPoint® feature
37. Linear speed control on SP 3450H

Optional Equipment

1. Crown wire guidance (broadband technology) operates on all frequencies ranging from 5.2 through 10 Khz without changing components.
2. Aisle guide wheels for rail guidance
3. Motor brush wear indicators and motor temperature indicators (Only available on SP 3420 [4 hp motor] and SP 3450H) (MMS: Motor Monitoring System)
4. Battery retainer interlock switch
5. Work lights, dome light and two-speed fan
6. Spotlights
7. Flashing amber light
8. Fork raise cutout with or without override and/or lower cutout with override
9. Zone select key switch
10. 48", 54", 60" and 64" wide operator platforms
11. Corrosion conditioning
12. Freezer conditioning (Includes ribbed floor mat)
13. Wire mesh screen (Standard with freezer conditioning)
14. Retractable tether
15. Load wheel and drive tire compounds
16. 30" lanyard boom
17. Special paint
18. Work Assist™ Accessories
 - Clip pad and hook
 - Plate
 - Pocket
19. Fire extinguisher
20. Linear speed control on SP 3420
21. 4 hp drive motor on SP 3420

Human Factor

The operator area is designed for maximum visibility and stability for increased operator confidence and comfort.

The operator platform features a large window (1088 sq in) for excellent visibility. A Crown-designed clear-visibility mast affords the platform window one forward and two peripheral windows for maximum visibility, even when the platform is lowered.

The clear-visibility mast, with full free lift, extends the platform window above the mast channels for unobstructed visibility when raised.

A low-profile power unit, low placement of the lower cross brace and an outer C-channel rail assembly also contribute to excellent visibility.

A soft urethane twist grip is solidly mounted to the truck console to provide excellent stability for the operator during travel, plugging and braking. Controls for lift/lower, horn and emergency disconnect are conveniently located for efficient operation and minimal operator fatigue. The steering wheel is angled at 10° and recessed to maximize the work area and reduce steer effort. The steering wheel and spinner knob are covered with soft urethane to reduce grip force and insulate against vibration. Control location keeps the operator's posture neutral at all times. The platform cushion, made of a microcellular composition, absorbs shock and vibration. The brake pedal has a low-profile design and when engaged is flush with the platform cushion for maximum comfort. Heavy-duty side gates, with two horizontal and one vertical support rails, communicate security to the operator. For additional safety, cut-out switches disengage truck operation when side gates are raised. Two work lights, two dome lights and a two-speed fan are optional. "Power-on" key prevents unauthorized operation of the truck; start position initializes truck "self-test". The Information Display Panel provides concise, clear feedback for the operator during truck operation.

Responsibly Innovative Electronics

Environmentally hardened heavy-duty 24-volt electrical system. An intelligent, networked Control System is used to provide real time truck control, display, diagnostics and calibration. A distribution panel provides a central location for troubleshooting, reduces wiring requirements, and enables future options to be added easily. The Control System can be accessed by the Service Terminal to provide calibration of truck parameters and optional features set-up. The Control System is also used to extract service diagnostic and management data. The link-up port is conveniently located on the platform and is easily accessible without removal of covers for connection.

The Crown Program Analysis Cartridge (PAC) works in conjunction with the Service Terminal and ensures users simple, fast program upgrade of systems.

Information Display Panel

The Information Display Panel travels with the operator at all times. Features include audible and visual prompts for the operator, steer wheel direction indicator, battery fuel gauge with lift interrupt, wire guidance status lights, hour meters for all motors, elapsed time counter, optional battery retainer interlock light, optional brush wear indicators and motor temperature indicators and optional fork height "zone select" control.

The Service Terminal also provides extensive service history information as well as "real time" electrical system diagnostics and fault isolation information for servicing.

Enhanced and Interchangeable Drive Unit

A Crown-manufactured drive unit uses spiral bevel and helical gears from motor to drive wheel axle. Fixed, mounted drive motor does not rotate minimizing wear on electrical cables. Drive tire changing is simplified with this new drive unit. Crown Turret Trucks and Reach Trucks also use this drive unit.

Travel System

Crown's patented Access 3 traction control system dramatically improves travel speeds, acceleration and deceleration, thus increasing productivity. Crown's Access 3 module knows the position of side gates, the speed and direction of travel, the position of the steer wheel, the truck weight and the height of the operator platform. Access 3 uses this information to control acceleration, braking, plugging and maximum speed.

The Crown traction system provides high available torque utilizing a Crown manufactured separately excited motor and maintains constant performance levels under varying loads, conditions and battery state of charge. Speeds remain the same empty or loaded. Separately excited motor technology eliminates forward, reverse and bypass contactors achieving higher levels of reliability. Regenerative motor braking helps save energy, increases motor brush life and decreases motor temperature.

Linear speed control (standard on the SP 3450H and optional on the SP 3420) provides smooth travel speed transition as lift heights change and increases productivity.

Travel System—continued

Truck performance specifications (maximum travel speed, coast, plugging, acceleration, travel speed at height, and low speed lowering) are adjustable using the Crown Service Terminal. This enables customizing truck performance to meet specific application or operator requirements.

Crown's InfoPoint system offers evolutionary refinement for service simplicity. The InfoPoint Quick Reference Guide, on-truck component maps and information nuggets located throughout the truck allow technicians to troubleshoot without schematics, wiring diagrams, or service manuals for more than 95 percent of repairs.

The InfoPoint Quick Reference Guide provides code definition and overall component ID so the technician knows where it is, what it is and what it does (Three W's). InfoPoint ensures faster, simpler, and higher quality service.

Intelligent Steering

Standard on the SP 3400 Series is electronic steering that is microprocessor based.

Crown's intelligent steering feature slows the truck automatically when the steer wheel is turned beyond 10°. Using the intelligence of Crown's Access 3 traction control, the system monitors the height of the operator platform, truck speed and steer wheel position.

Steering wheel rotation provides smooth, operator feedback. Steer effort is minimal, lock to lock revolutions is 4.5 turns. Drive wheel rotates a full 180° for maximum maneuverability. Auto centering drive tire for trucks equipped with rail guidance. Steering is connected to the Control System for full diagnostics and operator interface. Crown PAC also interfaces with steering system for fast upgrade.

Intelligent Braking System (IBS)

Crown's patented Intelligent Braking System combines motor braking with optimum amounts of friction braking (three varying levels of force). The appropriate level of braking is applied dependent upon platform height, direction of travel, and truck weight. Braking force is automatically reduced as height increases and speed decreases. Optimum braking for the right elevation gives operators more confidence and better control, while eliminating abrupt stops and reducing platform sway. Brake lining life can be expected to last up to twice as long before replacement is necessary.

Brake system eliminates hydraulic lines running in mast to control braking. Braking can also be accomplished by proportional plugging, which permits the operator to control the rate of deceleration when extended stopping distance is preferred.

Simplified Hydraulics

Heavy-duty series wound pump motors and gear pumps are assembled into an integral unit. High-speed lift is standard on SP 3420 and SP 3450H models. Crown-manufactured solenoid type manifolds with built-in checks and relief valves.

Two-speed lowering (high/low) with soft start is standard on all models. Low speed lowering is adjustable with the use of the Service Terminal. Soft-start lowering feature reduces the harshness at the beginning and end of the lowering cycle. The softer start is accomplished by controlling how quickly the proportional valve is opened or closed. Valve actuation is controlled by a driver in the Access 3 traction control module.

Maximum lowering speed is regulated by a pressure compensating flow control valve. Velocity fuses are used in all cylinders to stop lowering should lowering speed exceed a preset value due to a line rupture. A hydraulic accumulator is used to cushion raise and lower functions. Manual lowering control on manifold block allows lowering of platform from ground level. Oil reservoir is designed with a 100 mesh screen at the fill location, a suction strainer, spin-on type 10 micron return line filter and a magnetic drain plug.

The Crown Mast Assembly

High visibility two- and three-stage masts feature nested rail design with lift cylinders positioned behind mast rails. Three-stage mast has a low center position cylinder for free lift. Improved mast cable life due to larger, 5" diameter pulleys. Routing of hosing and cables optimizes visibility through mast. Built-in sensors detect chain slack and shut down primary lower function. Exclusive spring-loaded staging bumpers virtually eliminate platform impact as platform stages. Negative rail drop allows shimming of mast rollers without major disassembly.

Stronger Low Profile Power Unit

Power unit is fabricated from heavy-gauge steel. Lower skirt is .75" steel that runs 9" high for component protection. Rugged steel doors suspended on heavy-duty pin hinges cover power unit componentry. Doors swing wide for open access. Doors can also be lifted off for unrestricted service access. Door bolts have exclusive convex design that mates with concave door holes for fast reinstallation of door bolts. Battery side covers are all steel. An optional battery retainer interlock switch is available. Top battery access is available by lifting cover. Cover has integral support post.

Wheels and Tires

Polyurethane drive tire, 13" diameter x 5.5" wide x 8" hub diameter. Tandem load wheels are 6" diameter polyurethane x 2.8" wide (4.25" wide for lift heights above 348"). Optional polyurethane aisle guide wheels are 2" wide with a 4" or 2.5" diameter.

Forks

2" thick x 4" wide forged steel. Fork spread (adjustable) 24" to 30". Standard length is 36". Optional lengths available.

Pallet Clamp

Standard equipment includes a foot-applied, hand-released pallet clamp designed for use with pallets having center stringers.

Safety Shield

Safety glass to protect operator from chains and moving parts while in his normal operating position.

Audible Travel Alarm Option

Safety considerations and dangers associated with audible travel alarms include:

- Multiple alarms can cause confusion.
- Workers ignore the alarms after day-in and day-out exposure.
- Operator may transfer the responsibility for "looking out" to the pedestrians.
- Annoys operators and pedestrians.

Other Options Available

Contact your local Crown dealer.

Dimensions and performance data given may vary due to manufacturing tolerances. Performance is based on an average size vehicle and is affected by weight, condition of truck, how it is equipped and the conditions of the operating area. Crown products and specifications are subject to change without notice.

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