

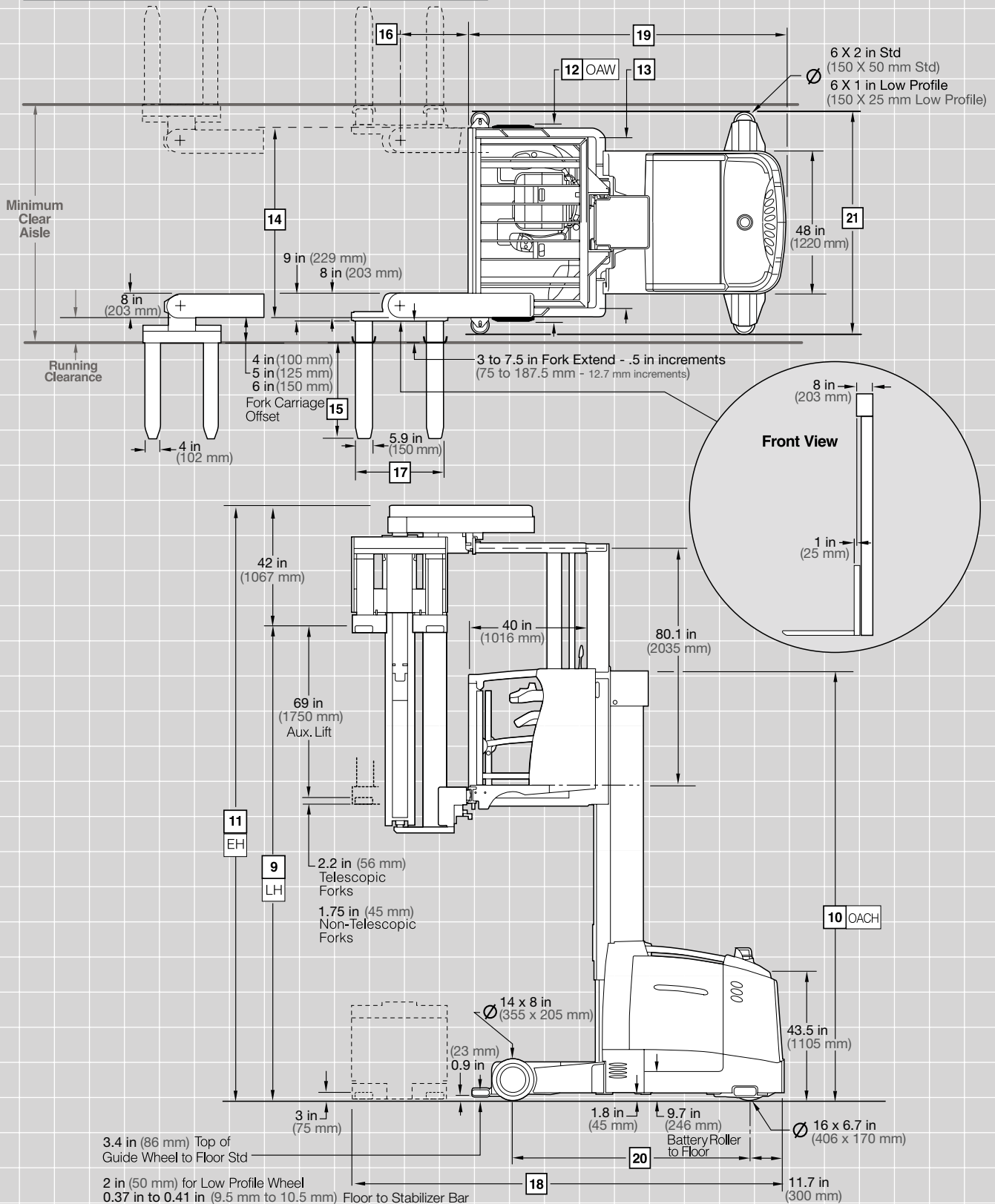
**CROWN**

# TSP 7000 SERIES

**Specifications**  
Turret Stockpicker



	Non-Telescopic Forks	Telescopic Forks
Minimum Clear Aisle	Pallet Length + 8" (203 mm) + Fork Carriage Offset + Running Clearance + Running Clearance	Pallet Length + 9" (229 mm) + Running Clearance + Running Clearance
Running Clearance	Forks Carriage Offset	Fork Extend + 1" (25 mm)



**TSP 7000 Series**

**Specifications**

TN/TF Mast			Imperial	Metric	
General Information	1	Manufacturer	Crown Equipment Corporation		
	2	Model	TSP 7000-33		
	3	Load Capacity, Max*	24" (610 mm) Load Center	lb kg	3300 1500
	4	Power	Electric 72 / 80 Volt		
	5	Operator Type	Sit / Stand Rider Turret Stockpicker		
	6	Tire Type	Load / Drive Poly / Vulkollan		
	7	Wheels	Load / Drive 2 / 1		
	8	Truck Weight	Less Battery	lb kg	13,500 – 16,000 6125 – 7035
Dimensions	9	Lift Height	(LH) See Mast Chart		
	10	Overall Collapsed Height	(OACH) See Mast Chart		
	11	Extended Height	(EH) See Mast Chart		
	12	Overall Width (Load Wheel)	(OAW) 1" (25.4 mm) increments		48 – 83 1220 – 2110
	13	Platform Width		in mm	48, 52, 58 1220, 1320, 1475
	14	Traverse Frame Width	48" (1220 mm) Platform	in mm	48, 49, 50, 51 1220, 1245, 1270, 1295
			52" (1320 mm) Platform	in mm	52, 53, 54, 55, 56†, 57† 1320, 1345, 1370, 1395, 1420†, 1450†
			58" (1475 mm) Platform	in mm	58, 59, 60, 61, 62†, 63† 1475, 1500, 1525, 1550, 1575†, 1600†
			64" (1625 mm) Platform ††	in mm	64, 65, 66, 67, 68, 69 1625, 1650, 1675, 1700, 1725, 1750
	15	Fork Length	Telescopic L x W x T	in mm	36, 37.4, 42, 45.3, 48, 54 x 5.9 x 2.25 915, 950, 1070, 1150, 1220, 1370 x 150 x 56
			Non-Telescopic L x W x T	in mm	30, 36, 37.4, 42, 45.3, 48 x 4 x 1.75 760, 915, 950, 1070, 1150, 1220, x 100 x 45
	16	Load Handler Length	Standard	in mm	23 or 27 585 or 685
			Optional	in mm	30, 33, 36, 39, 42, 45, 48, 51, 54 760, 840, 915, 990, 1070, 1143, 1220, 1295, 1370
	17	Outside Fork Spread	See Fork Spread Chart Below		
	18	Overall Length (With 23", 585 mm Load Handler)	"A" Battery Compartment	in mm	145.0 3685
			"B" Battery Compartment	in mm	148.4 3770
			"C" Battery Compartment	in mm	154.1 3915
			"D" Battery Compartment	in mm	160.7 4080
	19	Headlength	"A" Battery Compartment	in mm	107.0 2720
			"B" Battery Compartment	in mm	110.4 2805
			"C" Battery Compartment	in mm	116.1 2950
"D" Battery Compartment			in mm	122.7 3115	
20	Wheelbase	"A" Battery Compartment	in mm	80.1 2035	
		"B" Battery Compartment	in mm	83.5 2120	
		"C" Battery Compartment	in mm	89.2 2265	
		"D" Battery Compartment	in mm	95.8 2435	
21	Width Across Guide Roller	.25" (6.35 mm) increments		1.25 – 8.75 (32 – 222) greater than OAW, Item 12	
Performance	22	Speed Travel, Max	mph km/h	See Travel Speed Chart	
	23	Speed Lift	Main Mast (72v) Empty / Loaded	fpm m/s	120 / 105** .61 / .53**
			Main Mast (80v) Empty / Loaded	fpm m/s	120 / 115** .61 / .58**
			Auxiliary Mast Empty / Loaded	fpm m/s	80 / 80 .41 / .41
	24	Speed Lower	Main Mast Empty / Loaded	fpm m/s	88 / 88 .45 / .45
			Auxiliary Mast Empty / Loaded	fpm m/s	65 / 80 .33 / .41
25	Speed Pivot	180° Rotation	sec	6 - 10	
26	Speed Traverse		ips cm/s	4 - 12 10 - 30	
27	Battery	See Battery Chart			
28	Brakes	Drive Unit Quantity		1	
		Brake Type		Mechanically Applied, Electrically Released	

\* Capacity at height will be subjected to derating. Consult the factory for exact values.

\*\* Speeds are based on a TN mast

† A 2" (50 mm) bolt on platform extension is added to both sides of the platform.

†† Actual platform is 58" (1475 mm) wide with a 3" (75 mm) welded platform extension on each side. Resulting platform width is 64" (1625 mm).

TN/TF Mast			Fork Spread					
17	Outside Fork Spread	Load Handler	Carriage Width		Telescopic		Non-Telescopic	
		23" – 54" (585 – 1370)	in mm	30 760	21.5 – 30 545 – 760	15 – 30 380 – 760		
		29" – 54" (735 – 1370)	in mm	42 1065	33.5 – 42 850 – 1065	15 – 42 380 – 1065		
		35" – 54" (890 – 1370)	in mm	54 1370	45.5 – 54 1155 – 1370	15 – 54 380 – 1370		

**TSP 7000 Series**

Specifications

TT Mast				Imperial	Metric
General Information	1	Manufacturer	Crown Equipment Corporation		
	2	Model	TSP 7000-33		
	3	Load Capacity, Max*	24" (610 mm) Load Center	lb kg	3300 1500
	4	Power	Electric 72 / 80 Volt		
	5	Operator Type	Sit / Stand Rider Turret Stockpicker		
	6	Tire Type	Load / Drive Poly / Vulkollan		
	7	Wheels	Load / Drive 2 / 1		
	8	Truck Weight	Less Battery	lb kg	14,500 – 20,700 6580 – 9390
Dimensions	9	Lift Height	(LH) See Mast Chart		
	10	Overall Collapsed Height	(OACH) See Mast Chart		
	11	Extended Height	(EH) See Mast Chart		
	12	Overall Width (Load Wheel)	(OAW) 1" (25.4 mm) increments		48 – 83 1220 – 2110
	13	Platform Width		in mm	48, 52, 58 1220, 1320, 1475
	14	Traverse Frame Width	48" (1220 mm) Platform (Pf)	in mm	48, 49, 50, 51 1220, 1245, 1270, 1295
			52" (1320 mm) Pf	in mm	52, 53, 54, 55, 56†, 57† 1320, 1345, 1370, 1395, 1420†, 1450†
			58" (1475 mm) Pf	in mm	58, 59, 60, 61, 62†, 63† 1475, 1500, 1525, 1550, 1575†, 1600†
			64" (1625 mm) Pf ††	in mm	64, 65, 66, 67, 68, 69 1625, 1650, 1675, 1700, 1725, 1750
	15	Fork Length	Telescopic L x W x T	in mm	36, 37.4, 42, 45.3, 48, 54 x 5.9 x 2.25 915, 950, 1070, 1150, 1220, 1370 x 150 x 56
			Non-Telescopic L x W x T	in mm	30, 36, 37.4, 42, 45.3, 48 x 4 x 1.75 760, 915, 950, 1070, 1150, 1220, x 100 x 45
	16	Load Handler Length	Standard	in mm	23 or 27 585 or 685
			Optional	in mm	30, 33, 36, 39, 42, 45, 48, 51, 54 760, 840, 915, 990, 1070, 1143, 1220, 1295, 1370
	17	Outside Fork Spread	See Fork Spread Chart Below		
	18	Overall Length (With 23", 585 mm Load Handler)	"A" Battery Compartment	in mm	149.5 3800
			"B" Battery Compartment	in mm	152.9 3885
			"C" Battery Compartment	in mm	158.6 4030
			"D" Battery Compartment	in mm	165.2 4195
	19	Headlength	"A" Battery Compartment	in mm	111.5 2835
			"B" Battery Compartment	in mm	114.9 2920
			"C" Battery Compartment	in mm	120.6 3065
"D" Battery Compartment			in mm	127.2 3230	
20	Wheelbase	"A" Battery Compartment	in mm	83.6 2125	
		"B" Battery Compartment	in mm	87.0 2210	
		"C" Battery Compartment	in mm	92.7 2355	
		"D" Battery Compartment	in mm	99.3 2525	
21	Width Across Guide Roller	.25" (6.35 mm) increments		1.25 – 8.75 (32 – 222) greater than OAW, Item 12	
22	Speed Travel, Max		mph km/h	See Travel Speed Chart	
23	Speed Lift	Main Mast (72v) Empty / Loaded	fpm m/s	102 / 88 .52 / .45	
		Main Mast (80v) Empty / Loaded	fpm m/s	102 / 98 .52 / .50	
		Auxiliary Mast Empty / Loaded	fpm m/s	80 / 80 .41 / .41	
24	Speed Lower	Main Mast Empty / Loaded	fpm m/s	88 / 88 .45 / .45	
		Auxiliary Mast Empty / Loaded	fpm m/s	65 / 80 .33 / .41	
25	Speed Pivot	180° Rotation	sec	6 - 10	
26	Speed Traverse		ips cm/s	4 - 12 10 - 30	
27	Battery	See Battery Chart			
28	Brakes	Drive Unit Quantity	1		
		Brake Type	Mechanically Applied, Electrically Released		

\* Capacity at height will be subjected to derating. Consult the factory for exact values.

† A 2" (50 mm) bolt on platform extension is added to both sides of the platform.

†† Actual platform is 58" (1475 mm) wide with a 3" (75 mm) welded platform extension on each side. Resulting platform width is 64" (1625 mm).

TT Mast				Fork Spread			
17	Outside Fork Spread	Load Handler	Carriage Width	Telescopic		Non-Telescopic	
		23" – 54" (585 – 1370)	in mm 30 760	21.5 – 30	545 – 760	15 – 30	380 – 760
		29" – 54" (735 – 1370)	in mm 42 1065	33.5 – 42	850 – 1065	15 – 42	380 – 1065
		35" – 54" (890 – 1370)	in mm 54 1370	45.5 – 54	1155 – 1370	15 – 54	380 – 1370

**Mast Charts**

		9						10				11		12	
Lift Height (LH)		Free Lift TN*		Free Lift TF**		Free Lift TT**		Overall Collapsed Height TN/TF		Overall Collapsed Height TT		Extended Height (EH)		Minimum Overall Width	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
193	4900	72	1825	na	na	na	na	118	3000	na	na	235	5970	48	1220
207	5255	72	1825	83	2105	na	na	125	3175	na	na	249	6325	48	1220
219	5560	72	1825	89	2260	na	na	131	3330	na	na	261	6630	48	1220
231	5865	72	1825	95	2410	73	1850	137	3480	115	2925	273	6935	48	1220
243	6170	72	1825	101	2565	77	1955	143	3635	119	3025	285	7240	48	1220
255	6475	72	1825	107	2715	81	2055	149	3785	123	3125	297	7545	48	1220
267	6780	72	1825	113	2870	85	2155	155	3940	127	3230	309	7850	48	1220
279	7085	72	1825	119	3020	89	2260	161	4090	131	3330	321	8155	48	1220
291	7390	72	1825	125	3175	93	2360	167	4245	135	3430	333	8460	48	1220
303	7695	72	1825	131	3325	97	2460	173	4395	139	3535	345	8765	48	1220
315	8000	72	1825	137	3475	101	2565	179	4550	143	3635	357	9070	48	1220
327	8305	72	1825	143	3630	105	2665	185	4700	147	3735	369	9375	48	1220
339	8610	72	1825	149	3780	109	2765	191	4855	151	3840	381	9680	48	1220
351	8915	72	1825	155	3935	113	2870	197	5005	155	3940	393	9985	48	1220
363	9220	72	1825	161	4085	117	2970	203	5160	159	4040	405	10,290	48	1220
375	9525	72	1825	167	4240	121	3070	209	5310	163	4140	417	10,595	48	1220
387	9830	72	1825	173	4390	125	3175	215	5465	167	4245	429	10,900	49	1245
399	10,135	72	1825	179	4545	129	3275	221	5615	171	4345	441	11,205	50	1270
411	10,435	72	1825	185	4695	133	3375	227	5770	175	4445	453	11,510	51	1295
423	10,740	72	1825	191	4850	137	3475	233	5920	179	4550	465	11,815	52	1320
435	11,045	72	1825	197	5000	141	3580	239	6075	183	4650	477	12,120	54	1370
447	11,350	72	1825	203	5155	145	3680	245	6225	187	4750	489	12,425	55	1395
459	11,655	72	1825	209	5305	149	3780	251	6380	191	4855	501	12,730	56	1420
471	11,960	72	1825			153	3885	257	6530	195	4955	513	13,035	58	1475
483	12,265	72	1825			157	3985	263	6685	199	5055	525	13,335	59	1500
495	12,570	72	1825			161	4085	269	6835	203	5160	537	13,640	61	1550
507	12,875					165	4190			207	5260	549	13,945	61	1550
519	13,180					169	4290			211	5360	561	14,250	62	1575
531	13,485					173	4390			215	5465	573	14,555	63	1600
543	13,790					181	4595			223	5665	585	14,860	63	1600
555	14,095					185	4695			227	5770	597	15,165	63	1600
567	14,400					189	4800			231	5870	609	15,470	63	1600
579	14,705					193	4900			235	5970	621	15,775	63	1600
591	15,010					197	5000			239	6075	633	16,080	63	1600
603	15,315					201	5105			243	6175	645	16,385	64	1625
615	15,620					209	5305			251	6380	657	16,690	64	1625
627	15,925					213	5410			255	6480	669	16,995	65	1650
639	16,230					217	5510			259	6580	681	17,300	66	1675
651	16,535					221	5610			263	6685	693	17,605	66	1675
663	16,840					225	5715			267	6785	705	17,910	67	1700
675	17,145					229	5815			271	6885	717	18,215	68	1725

\* Maximum fork height using auxillary lift only.  
 \*\* Maximum fork height with no collapsed height change.

**Travel Speeds Seat Position**

		Maximum Speed*			
		Empty		Loaded	
Forks First	Any Position	mph	kmph	mph	kmph
		6.5	10.4	6.0	9.6
Power Unit First	Side Facing / Forward Facing	mph	kmph	mph	kmph
		7.5 / 6.0	12 / 9.6	7.0 / 6.0	11.2 / 9.6

\* In aisle, fully lowered, forks in the home position.

46 Batteries

		Voltage		Capacity (6 hr rate)		Number of Plates	Length Max		Width Max		Height Max		Minimum Weight		Maximum Weight	
		volts	amp-hrs	kw-hrs	in		mm	in	mm	in	mm	lb	kg	lb	kg	
80 Volt System	"A"	80	620	47.9	7 or 9	44.50	1130	24.69	627	31.00	787	2900	1315	3700	1680	
	"B"	80	775	59.9	9 or 11	44.50	1130	28.12	714	31.00	787	3260	1480	4500	2040	
	"C"	80	930	71.9	11 or 13	44.50	1130	33.75	857	31.00	787	3900	1770	5530	2510	
	"D"	80	1085	83.9	13 or 15	44.50	1130	40.31	1024	31.00	787	4560	2070	5960	2705	
72 Volt System	"B"	72 (36x2)	625-775	43.4-53.9	11	44.50	1130	13.5 (x2)	343 (x2)	31.00	787	1630 (x2)	740 (x2)	2250 (x2)	1020 (x2)	
	"C"	72 (36x2)	600-930	41.7-64.7	13	44.50	1130	16.25 (x2)	413 (x2)	31.00	787	1950 (x2)	885 (x2)	2765 (x2)	1255 (x2)	
	"D"	72 (36x2)	700-1085	48.6-75.5	15	44.50	1130	19.56 (x2)	497 (x2)	31.00	787	2280 (x2)	1035 (x2)	2980 (x2)	1353 (x2)	

\* Width is measured on the side of the battery with lifting hooks

Connector Location / Length (J): A/15" (A/381mm) for all battery sizes except 80 Volt "D" Batteries require D/22" (D/559 mm).  
 Standard Connectors: All 80 Volt Batteries = SB350 Black, All 72 Volt Batteries = SB350 Gray.

TSP 7000 Series

Technical Information

Standard Equipment

- TN Mast - No Free Lift in main mast but 69" (1750 mm) of free lift in auxiliary mast
- 72/80-volt fused electrical system
- AC lift and traction motors
- Regenerative lowering system
- Access 1 2 3<sup>o</sup> Comprehensive System Control
  - Fully interactive, four-line display
  - Battery discharge indicator with lift interrupt
  - Capacity Monitor
  - Start-up and run time diagnostics
  - Diagnostic history storage
  - Hour meters include traction motor, hydraulic motor, steer motor, and run time (increments if any of previous three are active).
  - Programmable speed curves and top travel speeds
  - Linear speed control for gradual reduction in speed as platform is raised
  - Programmable lift/lower cutouts with overrides
- Intelligent Braking System combines the optimum amount of friction and motor braking
- Intelligent Steering System slows the travel speed when in a turn and provides smooth, electronic steering
- MoveControl<sup>®</sup> Seat
  - Fully integrated right and left hand controls
  - Allows -20, 0, 60, and 90 degree operating positions
  - Independent seat swivel
  - Sit or stand operation
  - 7.5" (190 mm) height adjustment (seat and armrests)
  - Armrest position adjustments
  - Integrated hand sensors
- MonoLift<sup>®</sup> Mast for superior rigidity at height and maximum visibility
- Heavy-duty power unit
  - Easily removable steel doors and covers
  - Top battery access
  - LED flashing light
  - Removable steer wheel cover
  - Manual lowering valve release located in power unit
  - 2-3/4" (70 mm) diameter battery rollers
  - SB 350 battery connector
  - Color-coded wiring
  - Vulkollan<sup>®</sup> drive tire

- Heavy-duty platform
  - Sturdy front rail and hinged side gates
  - Smooth and blended control of travel, raise/lower, traverse and pivot
  - MoveControl<sup>®</sup> Seat
  - Premium floor mat
  - Two-speed operator fan
  - Dual, overhead LED dome lights
  - Dual, adjustable, overhead LED work lights
  - Adjustable rear view mirror
  - Shock absorbing tether and body harness
  - Key switch
  - Horn
  - 12-volt accessory outlet
  - Multiple storage bins
  - Partial overhead plexiglass shield
- InfoPoint<sup>®</sup> Quick Reference Guide and Maps

Optional Equipment

- Wire and/or rail guidance
- End-of-aisle control system
- TF mast for full free lift or three stage mast (TT) for superior collapsed heights and full free lift
- Power unit / Main frame
  - "A", "B", "C" or "D" batteries
  - Stabilizer bars for wire guided trucks ≤ 531" (13,485 mm)

- Selectable overall width (OAW), in 1" (25 mm) increments
- Non-marking drive and load wheels
- Various strobe lights
- Battery retainer switch
- Platform
  - Extended load handler lengths and carriage widths
  - Telescopic or non-telescopic forks
  - Tilting fork carriage (non-telescopic forks only)
  - Power source and mounting brackets for WMS terminal
  - Fire extinguisher
  - Narrow front rail
  - Zone select key switch
- Environmental packages
  - UL EE Rating
  - Freezer conditioning
  - Enclosed cabin – heated
- Work Assist<sup>®</sup> Accessories
  - Second fan
  - Second work light
  - Clip pad and hook
  - Plate (for RF mount)
  - Adjustable arm mounting system
- InfoLink<sup>®</sup> Ready System
- InfoLink for Windows<sup>®</sup> Ready System

### Electrical

Heavy-duty 72 / 80-volt electrical power system provides unrivaled turret stockpicking performance. AC lift and traction motors provide excellent control at low speeds and industry leading performance at top speeds. All truck functions are monitored and controlled through the Access 1 2 3<sup>®</sup> Comprehensive System Control. Each of the eight microprocessor controlled modules, located throughout the truck, are in constant communication with each other providing an unparalleled degree of control. Long-life, solid-state encoders and hall effect sensors are utilized where appropriate to sense operating parameters. Only three contactors are needed, greatly reducing wearable items. Color-coded wiring and Crown's exclusive InfoPoint<sup>®</sup> System reduces down-time by providing clear direction for the service technician.

### Operator Platform

The multi-patented MoveControl<sup>®</sup> Seat provides unprecedented levels of flexibility for the turret stockpicker operator. The seat can be positioned at -20, 0, 60, or 90 degrees, whichever is most productive for the operator. The seat bottom and backrest also swivel independently for an added degree of mobility. The seat bottom can be lifted up to provide a soft backrest for a standing operator. The seat also has 7.5 inches (190 mm) of height adjustability.

Controls for all operating functions are positioned smartly in the seat armrests. The controls are always positioned consistently for the operator, regardless of seat orientation. Armrests also pivot to permit free movement within the platform. Multi-task controls are arranged so that a wide array of blended functions can occur. The right hand controls travel, main raise and lower and traverse functions, while the left hand controls auxiliary lift/lower and pivot. Hands are sensed using infrared light beams, while feet activate large, flat sensors in the floor.

The spacious floorboard is covered with a premium floor mat for optimum comfort. Other operator comforts include a series of Work Assist<sup>®</sup> Accessories such as a two-speed fan and two LED work lights that are located in the overhead guard. Other Work

Assist Accessories can also be mounted to the vertical Work Assist tube, or either of the tubes built into the overhead guard. Multiple storage compartments provide abundant room for personal items and tools.

The operator's feet and right hand must be in the proper operating position for the travel and main raise functions to work. For load handler functions, the left hand sensor must also be activated. The gates must also be closed during any powered truck movement. The truck can be stopped by activation of either of two foot-operated, positive action service brakes or by reversing the traction motor for smooth AC plugging.

### Display

The four-line, alphanumeric display (Access 1) is conveniently mounted on the left upright for easy access. In addition to providing a full diagnostic and calibration interface, the display is capable of continuously displaying:

- Current event codes
- Battery discharge indication
- Steer wheel position
- On/off wire status
- Capacity Monitor
- Fork height
- Load weight
- Time of day and date

Interactive buttons, mounted to the face of the display, can be used to interrogate the truck or adjust parameters. State of the art diagnostics are standard equipment. Every sensor can be monitored in real time through the display and many of the output drivers can be tested as well. Menu structures are shared with other Crown Models, so technicians will quickly find their way around.

### Power Unit

The heavy-duty power unit was designed to evenly disperse load stresses during pallet retrieval and put away. Steel doors and covers protect the electrical and hydraulic system components from the operating environment and intrusion. All covers can be easily removed with only a few tools. Sturdy skid bars can be easily adjusted and replaced. Batteries are serviced through the top battery access panel, which pivots easily out of the way.

### MonoLift<sup>®</sup> Mast

Elevated load sway and side bowing are minimized through the use of a closed cross-section mast construction. Rolled "I-beams" continuously welded to a formed plate create a full length, deep cross-section mast capable of resisting front and side loading equally well. Lift cylinders, hoses, cable and chain within the mast are protected from the operating environment, but are readily accessible for service. Built-in sensors in the primary mast detect chain slack and shut down primary lower, auxiliary lower, pivot and traverse functions. A glass window in the rear of the platform provides additional visibility above staging.

### Access 1 2 3<sup>®</sup>

The Access 1 2 3 Comprehensive System Control is a modular based communications and control system. It monitors all on-board sensors, makes decisions based on the sensor readings, and subsequently, controls all system movements safely and smoothly. All eight modules are in constant communications with each other via a CAN (Control Area Network) bus so that real time information is accessible to the system at all times.

- Access 1  
Interactive Display Module
- Access 2  
Hydraulic Control Module
- Access 3  
Traction Control Module
- Access 4  
Vehicle Control Module
- Access 5  
Steering Control Module
- Access 6  
Guidance Control Module
- Access 7  
Accessory Control Module
- Access 8  
Operator Control Module

### Simplified Hydraulic System

The hydraulic system has been designed to provide industry-leading performance with a simplified approach that incorporates fewer parts, fewer connections and fewer hoses. The mast/outriggers (mainframe) can be completely separated from the power unit without disconnecting any hydraulic connections. Not only is it easier to tear down the truck for transport, but the hydraulic system is isolated from the electrical system so that oil and other contaminants will not

affect operation. All hydraulic functions are controlled by only two manifold blocks – one in the main frame, and one in the load handler.

One large AC motor provides plenty of power for main lift, auxiliary lift, traverse, pivot and fork extension. The hydraulic and electrical systems work together to allow excellent control of the load handler for smooth and safe manipulation of loads. Acceleration rates and top functional speeds can be programmed to suit the application.

The regenerative lowering system reclaims energy upon every lower. This improves shift life and requires fewer battery charges.

A manual lowering valve, positioned in the power unit, will allow the platform to be lowered from the ground. Forks can be returned to the home position prior to lowering.

### Traction System

A massive AC traction motor and associated drive unit provides for unparalleled top travel speeds and precise control at low speeds. Acceleration and deceleration rates can be programmed to fit the application, while direction reversals are smooth and immediate. Many speed selectable programs can be chosen to maximize safety and productivity. Although many factors such as direction of travel, height of the platform, position of the forks, and whether operating in a guided mode will have a bearing on speed, top travel speed is achieved in the power unit direction with the seat in the 90 degree position. Top speeds will be diminished gradually as the platform is raised.

### Intelligent Braking

The patented Intelligent Braking System combines variable friction brake to optimize safety and comfort for the operator. Operating conditions such as speed of the truck, direction of travel, height and weight on the forks and weight of the truck are taken into account when the brakes are applied. In addition, friction brake use is minimized, which prolongs brake life.

Although the service brake is always available to the operator through two floor pedals, the operator can choose to bring the truck to a controlled stop by reversing the direction of the travel control (plugging).



**Intelligent Steering**

Full electronic steering provides smooth and easy maneuvering for the operator. Top travel speed of the truck is decreased when the steer wheel is greater than ten degrees. Further speed reductions occur as the amount of steering is increased. This intelligent approach provides a maximum degree of safety and comfort for the operator.

**Load Handler**

The fork carriage pivots (turrets) 180° permitting pickup and deposit from either side or front of the truck. Position of the forks is continually monitored to permit safe, smooth and productive operation. Fork handling functions can be blended together for simultaneous operation which will greatly improve productivity.

The Auto-Pivot feature will automatically traverse and pivot the forks, all while keeping the pallet centered in the aisle. Forks spread is incrementally adjustable while two choices of forks are available – telescopic or non-telescopic. Telescopic forks automatically extend during the traverse function or can be manually extended using the standard override button. Programmable height limits are also available for raise and lower. Lower and raise limits can be overridden by the operator, if desired.

Lift cylinder, hydraulic hoses and electrical cables are protected within the profile of the structure or behind removable covers. Vertical side alignment of the auxiliary mast is maintained by rack and pinion gears.

**Wheels and Tires**

Large, high-load capacity polyurethane press-on load wheels are 14" (355 mm) diameter x 8" (205 mm) wide. The Vulkollan® drive tire is 16" (406 mm) diameter x 6.7" (170 mm) wide. Guide wheels for rail guidance are 6" (150 mm) diameter x 2" (50 mm) wide.

**Warning Device Options**

Audible or Visual Alerts

Safety considerations and dangers associated with audible travel alarms and lights include:

- Multiple alarms and/or lights can cause confusion.
- Workers ignore the alarms and/or lights 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 factory for additional options.

*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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**You can count on Crown to build lift trucks designed for safe operation, but that's only part of the safety equation. Crown encourages safe operating practices through ongoing operator training, safety-focused supervision, maintenance and a safe working environment. Go to crown.com and view our safety section to learn more.**

Because Crown is continually improving its products, specifications are subject to change without notice.

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