

**CROWN**

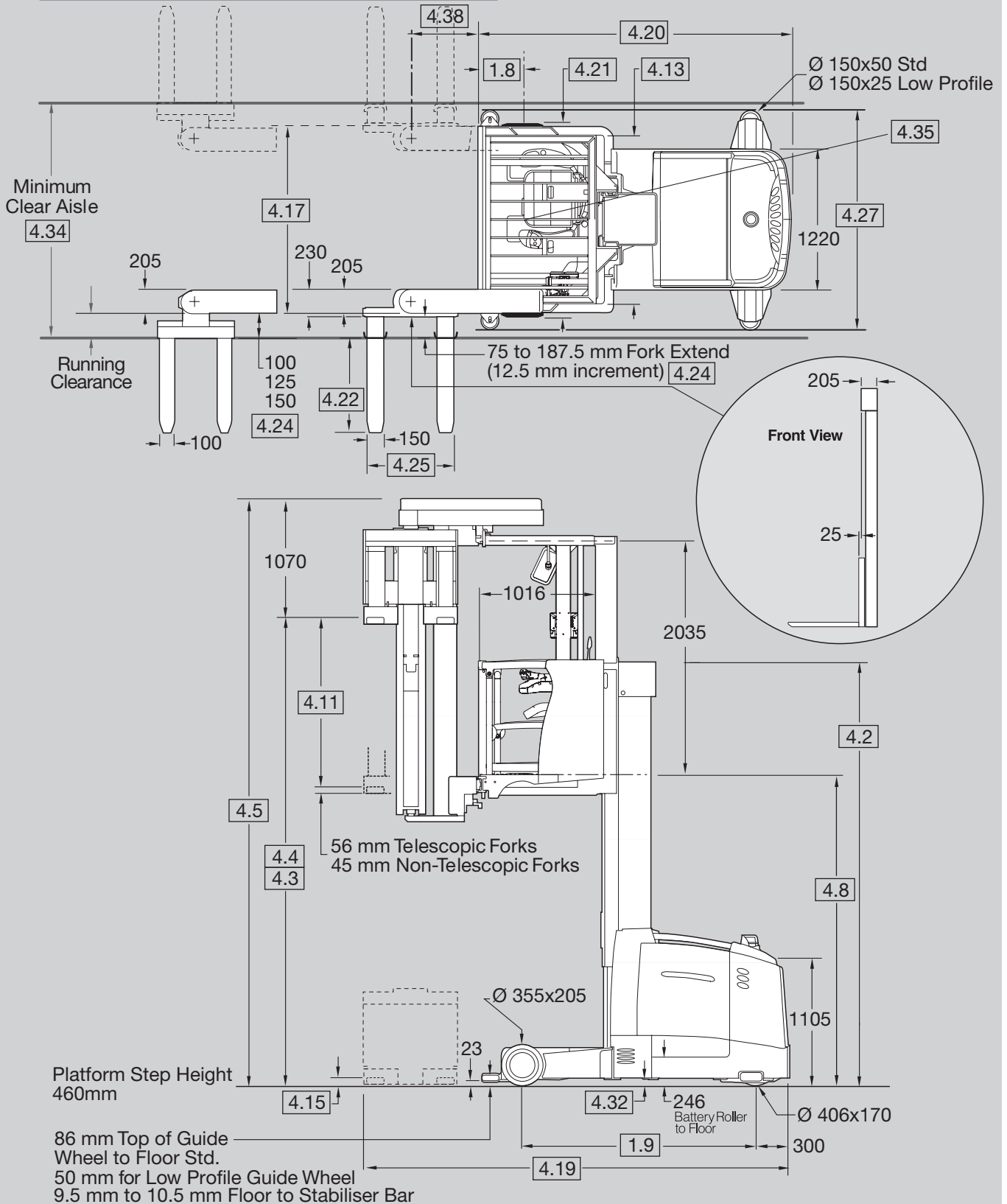
# TSP 1000 SERIES

## Specifications

VNA Truck  
48 V



	Non-Telescopic Forks	Telescopic Forks
Minimum Clear Aisle	Pallet Length + 203 mm + Fork Carriage Offset + Running Clearance	Pallet Length + 229 mm + Running Clearance
Running Clearance	Forks Carriage Offset	Fork Extend + 25 mm



Distinguishing Mark	1.1	<b>Manufacturer</b>	Crown Equipment Corporation					
	1.2	<b>Model</b>	TSP 1000-1.0	TSP 1000-1.25	TSP 1000-1.5			
			TN / TF / TT					
	1.3	<b>Power Source</b>	Electric		Volt	48		
	1.4	<b>Operator Type</b>				standing / seated		
	1.5	<b>Rated Capacity*</b>		Q	t	1.0	1.25	1.5
	1.6	<b>Load Centre</b>		c	mm	600		
	1.8	<b>Load Distance</b>	TN-TF / TT	x	mm	386 / 411		
	1.9	<b>Wheelbase</b>		y	mm	see table 3		
Tyres/Wheels/Chassis	2.1	<b>Service Weight</b>	Less battery, min./max.		kg	6580 - 8395		
	3.1	<b>Tyres</b>	Front / Rear			Polyurethane / Vulkollan		
	3.2	<b>Tyre Size</b>	Front		mm	Ø 355 x 205		
	3.3	<b>Tyre Size</b>	Rear		mm	Ø 406 x 170		
	3.4	<b>Additional Wheels</b>	Guide rollers, std. / low profile		mm	Ø 150 x 50 / Ø 150 x 25		
	3.5	<b>Wheels</b>	Number front/rear (x=driven wheels)			2 / 1x		
Dimensions	3.6	<b>Tread</b>	Front	b10	mm	1015 - 1625		
	4.2	<b>Mast Collapsed Height</b>		h1	mm	see table 1		
	4.3	<b>Free-lift</b>		h2	mm	see table 1		
	4.4	<b>Lift Height</b>		h3	mm	see table 1		
	4.5	<b>Mast Extended Height</b>		h4	mm	see table 1		
	4.8	<b>Seat Height relating to SIP/Stand Height</b>		h7	mm	460 / h4 - 2415		
	4.11	<b>Auxiliary Lift</b>		h9	mm	1750		
	4.13	<b>Cabin Width</b>		h11	mm	1220 / 1320 / 1475		
	4.15	<b>Fork Height</b>	Lowered	h13	mm	75		
	4.17	<b>Traverse Frame Width</b>		l5	mm	see table 4		
	4.19	<b>Overall Length</b>		l1	mm	see table 3		
	4.20	<b>Head Length</b>		l2	mm	see table 3		
	4.21	<b>Overall Width</b>	Front / rear	b1	mm	1220 to 1839 / 1220		
	4.22	<b>Fork Dimensions</b> DIN ISO 2331	Non-telescopic	s x e x l	mm	45 x 100 x 760/915/950/1070/1150/1220		
			Telescopic	s x e x l	mm	56 x 150 x 915/950/1070/1150/1220/1370		
		<b>Fork Extension</b>	Telescopic		mm	75 to 187.5 mm in 12.5 mm increments		
	4.25	<b>Fork Spread</b>	Standard	b5	mm	see table 4		
	4.27	<b>Width across Side Roller</b>	Optional available in 6.35 mm increments	b6	mm	32 to 222 mm wider than 4.21 load wheel OAW		
	4.32	<b>Ground Clearance</b>	Centre wheelbase	m2	mm	46		
	4.34	<b>Aisle Width predetermined Load Dimensions</b>		Ast	mm	see table 3		
4.35	<b>Turning Radius</b>		Wa	mm	see table 3			
4.38	<b>Load Handler Length</b>	Standard	l8	mm	585 / 685			
		Optional available in 75 mm increments	l8	mm	760 to 1370			
Performance Data	5.1	<b>Travel Speed</b> With Load / Without Load	Forks first - seat in any position		km/h	9.6 / 10.4		
			Power unit first - seat forward facing		km/h	9.6 / 9.6		
			Power unit first - side facing		km/h	11.2 / 12.0		
	5.2	<b>Lift Speed</b> With Load / Without Load	Main mast TN		m/s	0.43 / 0.48	0.43 / 0.48	0.41 / 0.48
			Main mast TF		m/s	0.39 / 0.45	0.39 / 0.45	0.38 / 0.45
			Main mast TT		m/s	0.38 / 0.41	0.38 / 0.41	0.36 / 0.41
			Auxiliary mast		m/s	0.41 / 0.41		
	5.3	<b>Lowering Speed</b> With Load / Without Load	Main mast TN / TF / TT		m/s	0.45 / 0.45		
			Auxiliary mast		m/s	0.41 / 0.33		
		<b>Speed Pivot</b>			sec	6 10		
	<b>Speed Traverse</b>			cm/s	10 - 30			
5.10	<b>Service Brake</b>				mechanically applied, electrically released			
Electric Motor	6.1	<b>Traction Motor</b>	Rating at S2 60 min.		kW	7.3		
	6.2	<b>Pump Motor</b>	Rating at S3 30%		kW	23		
	6.3	<b>Battery according to DIN 43531/35/36 A, B, C, no</b>				see table 2		
	6.4	<b>Battery Voltage</b>	Nominal capacity K5		Ah	775	900, 980, 1395	980, 1395
			Code			AA	A, B, C	B, C
	6.5	<b>Battery Weight</b>	Min.		kg	see table 2		
8.1	<b>Drive Unit</b>				AC traction and AC lift			

\* Capacity derating is dependant upon combination of load centre, overall width, 180° traverse/fork extend, battery compartment size, lift height, and travel speed.

Table 1 Mast

4.2		4.3			4.4	4.5	1.5 Related Capacity					
Mast Collapsed Height		Free-lift			Lift Height	Mast Extended Height	1.0	1.25	1.5			
TN/TF	TT	TN	TF	TT	TN/TF/TT		Battery Compartment A	Battery Compartment A / B / C	Battery Compartment B / C / D			
h1	h1	h2	h2	h2	h3 + h9	h4	b1	b1	b1			
mm	mm	mm	mm	mm	mm	mm	OAW min.	OAW min.	B	C	D	OAW min.
3000		1825			<b>4900</b>	5970	1220	1220	●	●	●	1220
3175		1825	2105		<b>5255</b>	6325	1220	1220	●	●	●	1220
3330		1825	2260		<b>5560</b>	6630	1220	1220	●	●	●	1220
3480	2925	1825	2415	1850	<b>5865</b>	6935	1220	1220	●	●	●	1220
3635	3025	1825	2565	1955	<b>6170</b>	7240	1220	1220	●	●	●	1220
3785	3125	1825	2720	2055	<b>6475</b>	7545	1220	1220	●	●	●	1220
3940	3230	1825	2870	2155	<b>6780</b>	7850	1220	1220	●	●	●	1220
4090	3330	1825	3025	2260	<b>7085</b>	8155	1220	1220	●	●	●	1220
4245	3430	1825	3175	2360	<b>7390</b>	8460	1220	1220	●	●	●	1220
4395	3535	1825	3325	2460	<b>7695</b>	8765	1220	1220	●	●	●	1220
4550	3635	1825	3480	2565	<b>8000</b>	9070	1220	1220	●	●	●	1220
4700	3735	1825	3630	2665	<b>8305</b>	9375	1220	1220	●	●	●	1220
4855	3840	1825	3785	2765	<b>8610</b>	9680	1245	1220	●	●	●	1220
5005	3940	1825	3935	2870	<b>8915</b>	9985	1270	1220	●	●	●	1220
5160	4040	1825	4090	2970	<b>9220</b>	10290	1295	1245	●	●	●	1220
5310	4140	1825	4240	3070	<b>9525</b>	10595	1320	1270	●	●	●	1220
5465	4245	1825	4395	3175	<b>9830</b>	10900	1345	1320	●	●	●	1245
5615	4345	1825	4545	3275	<b>10135</b>	11205	1370	1345	●	●	●	1270
5770	4445	1825	4695	3375	<b>10435</b>	11510		1395	●	●	●	1295
5920	4550	1825	4850	3475	<b>10740</b>	11815		1420	●	●	●	1320
6075	4650	1825	5000	3580	<b>11045</b>	12120		1475	●	●	●	1370
6225	4750	1825	5155	3680	<b>11350</b>	12425		1525	●	●	●	1395
6380	4855	1825	5305	3780	<b>11655</b>	12730		1575	●	●	●	1420
6530	4955	1825		3885	<b>11960</b>	13035			●	●	●	1475
6685	5055	1825		3985	<b>12265</b>	13335			●	●	●	1500
6835	5160	1825		4085	<b>12570</b>	13640			●	●	●	1550
	5260			4190	<b>12875</b>	13945				●	●	1550
	5360			4290	<b>13180</b>	14250				●	●	1575
	5465			4390	<b>13485</b>	14555				●	●	1600

Table 2 Batteries

				1.0	1.25	1.25 / 1.5				
6.3	<b>Battery</b>	Compartment size		AA	A	B	C			
		Ampere hours		Ah	700-775	840-900	980	1120	1260-1395	
		Cells accord. to DIN43536			5 PzS	6 PzS	7 PzS	8 PzS	9 PzS	
		Voltage		V	48	48	48	48	48	
		Cell layout			B	B	B	B	A	
	<b>Battery Compartment</b>	Length max.		mm	1130*	1130*	1130*	1130*		
		Length recommended		mm	1035	1035	1035	1035	1130*	
		Width max.		mm	543	627	714	857		
		Height		mm	787	787	787	787		
		Battery box			-	-	-	-	-	
6.5	<b>Battery Weight</b>	Minimum	kg	1065	1245	1425	1610			

\* Contact Crown for detailed drawings

Table 3 Intersecting Aisle Dimension

6.3	<b>Battery Compartment</b>	TN /TF		AA	A	B	C	D		
1.9	<b>Wheelbase</b>	TN /TF		1950	2035	2120	2265	2435	TN / TF mast	
4.20	<b>Head Length</b>	TN /TF		2635	2720	2805	2950	3115		
4.35	<b>Turning Radius</b>	TN /TF		2250	2335	2420	2565	2735		
4.19	<b>Overall Length</b>	TN /TF		3600	3685	3770	3915	4080		
4.34	<b>Aisle Width predetermined Load Dimensions</b>	1200 mm Load width	800 mm Load length	Load handler 585	3947	4032	4117	4262		4432
		1200 mm Load width	1200 mm Load length		4132	4217	4302	4447		4617
		800 mm Load width	1200 mm Load length		4071	4156	4241	4386		4556
4.19	<b>Overall Length</b>	TN /TF		3700	3785	3870	4015	4180		
4.34	<b>Aisle Width predetermined Load Dimensions</b>	1200 mm Load width	800 mm Load length	Load handler 685	4039	4124	4209	4354		4524
		1200 mm Load width	1200 mm Load length		4225	4310	4395	4540		4710
		800 mm Load width	1200 mm Load length		4168	4253	4338	4483	4653	
1.9	<b>Wheelbase</b>	TT		2040	2125	2210	2355	2525	TT mast	
4.20	<b>Head Length</b>	TT		2750	2835	2920	3065	3230		
4.35	<b>Turning Radius</b>	TT		2340	2425	2510	2655	2825		
4.19	<b>Overall Length</b>	TT		3715	3800	3885	4030	4195		
4.34	<b>Aisle Width predetermined Load Dimensions</b>	1200 mm Load width	800 mm Load length	Load handler 585	4059	4144	4229	4374		4544
		1200 mm Load width	1200 mm Load length		4245	4330	4415	4560		4730
		800 mm Load width	1200 mm Load length		4185	4270	4355	4500		4670
4.19	<b>Overall Length</b>	TT		3815	3900	3985	4130	4295		
4.34	<b>Aisle Width predetermined Load Dimensions</b>	1200 mm Load width	800 mm Load length	Load handler 685	4152	4237	4322	4467		4637
		1200 mm Load width	1200 mm Load length		4339	4424	4509	4654		4824
		800 mm Load width	1200 mm Load length		4283	4368	4453	4598	4768	

\* Intersecting aisle dimensions include 200 mm safety distance according to VDI2198. Please add 300 mm for fast aisle changes

Table 4 Traverse Frame &amp; Fork Spread

4.17	<b>Traverse Frame Width</b>	1220 Cab width	mm	1220	1245	1270	1295	4262	4432
		1320 Cab width	mm	1320	1345	1370	1395	1420*	1445*
		1475 Cab width	mm	1475	1500	1525	1550	1575*	1600*
		1625 Cab width**	mm	1625	1650	1675	1700	1725	1750
4.25	<b>Outside Fork Spread (standard)</b>	Load Handler Length		Carriage Width	Telescopic		Non-Telescopic		
		585 to 1370 Load Handler	mm	760	550 to 760		380 to 760		
		740 to 1370 Load Handler	mm	1065	850 to 1065		380 to 1065		
		890 to 1370 Load Handler	mm	1370	1155 to 1370		380 to 1370		

\* A 50 mm bolt-on platform extension will be added to both sides of the cab/platform

\*\* Actual cab is 1475 mm wide with a 75 mm platform extension

**Standard Equipment**

1. Gena Operating System
2. 48-volt fused electrical system
3. AC lift, traction, and steer motors
4. Blended main mast and auxiliary mast lift functionality
5. OnTrac Anti-Slip Traction Control
6. Manual Wire Sense (with optional wire guidance)
7. Integrated InfoLink® Hardware \*\*\*
  - Smart card reader
  - Impact sensors (2)
  - Wi-Fi radio
8. Connectivity\*
  - Cellular radio
  - Wireless truck software updates
  - Wireless truck data collection
  - Push wireless settings
9. RAM Mounted 7" Colour Touch Screen Display with Integrated Speaker
  - Optically bonded 2 mm thick capacitive touch screen
  - Integrated navigation buttons for freezer/cold storage applications
  - 40+ available languages
  - Vehicle status icons
  - Customisable dashboard with widgets
    - Stopwatch
    - Battery Discharge Indicator
    - Steer Wheel Indicator / Wire Guidance
    - Hour Meter
    - Height/Weight
    - Clock
    - Odometer
    - Capacity Data Monitor
    - Zone Select
    - Auto Positioning System\*\*
    - Calculator
  - Performance modes
  - Safety reminders
  - Step-by-step calibrations
  - Enhanced service diagnostics with storage history
  - Maintenance mode\*\*\*
  - Visual inspection checklist\*\*\*
- Impact strobe light and impact alerts\*\*\*
10. Start-up and run time diagnostics
11. Hour meters include traction motor, hydraulic motor, steer motor, and run time (increments when any of previous three are active)
12. Adjustable speed curves and top travel speeds
13. Linear height speed control gradually reduces travel speed as the platform raises
14. Programmable lift/lower cutouts with overrides
  - Zone select allows for limiting of lift/lower cutouts into 3 separate zones
15. Intelligent braking system combines the optimum amount of friction and motor braking
16. Intelligent steering system automatically slows the travel speed when in a turn and provides smooth, electronic steering
17. MoveControl™ Seat
  - Fully integrated right and left hand controls
  - Display navigation knob on left hand controls
  - Allows -20, 0, 60 and 90 degree operating positions
  - Independent seat swivel
  - Sit or stand operation
  - 190 mm height adjustment (seat and armrests)
  - Armrest position adjustments
  - Integrated hand sensors
18. MonoLift™ Mast for optimal stability at height and excellent visibility
19. Heavy-duty power unit
  - Easily removable steel doors and covers
  - Top battery access
  - LED amber flashing light
  - Removeable steer wheel cover
  - Panel located in power unit for service raise/lower functionality
  - Manual lowering valve release located in power unit
  - 70 mm diameter battery rollers
  - SB 350 battery connector
  - Colour-coded wiring

- Poly heavy-duty drive tyre
20. Heavy-duty platform
  - Sturdy front rails and hinged side gates
  - Smooth and blended control of travel, raise/lower, traverse and pivot
  - MoveControl™ Seat
  - Premium floor mat
  - Integrated Work Assist® Tube
  - 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
  - USB charging port
  - Multiple storage bins
  - Partial overhead plexiglass shield
21. InfoPoint Maps

**Optional Equipment**

1. Wire and/or rail guidance
2. End-of-aisle control system
3. Semi-Automated Solutions
  - Auto Fence
  - Auto Positioning System with Auto Fence
4. TF mast for full free lift or three stage mast (TT) for superior collapsed heights and full free lift
5. Power unit/Main frame
  - "AA", "A", "B" or "C" battery box
  - Stabiliser bars for wire guided trucks ≤ 13,485 mm
  - Selectable overall width (OAW), in 25 mm increments
  - Non-marking load wheels
  - Various strobe lights
  - Floor spotlight - blue
  - Battery retainer switch
  - V-Force® Lithium-Ion Ready
  - Fuel cell ready
6. Platform
  - Extended load handler lengths and carriage widths

- Standard-profile telescopic, low-profile telescopic, or non-telescopic forks
- Tilting fork carriage (non-telescopic forks only)
- Power source and mounting brackets for WMS terminal
- Front and rear windshields
- Fire extinguisher
- Narrow front rail
- Keyless user access
- Fold-up armrests
7. Environmental packages
  - UL EE Rating
  - Freezer conditioning
  - Enclosed cabin – heated
8. Work Assist® Accessories
  - Second fan
  - Second set of LED work lights
  - Clip pad and hook
  - Plate (for RF mount)
  - Adjustable arm mounting system

**Gena Operating System**

Crown's proven integrated control structure provides an enhanced user experience for operators, service technicians and managers. Integrated InfoLink® hardware allows for seamless enabling of Crown's telematics fleet management solution. The Gena Operating System monitors inputs from all on-board sensors and responds instantaneously to control truck systems for safe, optimised performance. All control modules are in constant communication via a CAN (Control Area Network) bus so that real time information is accessible to the system at all times. Standard safety and performance features further boost operator confidence and productivity, increasing throughput in narrow aisle applications. Real-time truck communication to the user through the Gena display equates to a powerful data-rich experience. Wireless firmware downloads ensure that the Gena operating system can be easily updated without requiring the use of a handset or laptop.

\* Crown lift trucks with the Gena OS are connected products. Please see crown.com for the data use policy to see more.

\*\* On screen with optional auto positioning system functionality.

\*\*\* Functional with an active InfoLink service plan.



**7” Touch Screen Display**

The industrial grade, capacitive touch screen display provides intuitive menus and configurable widgets to enhance operator engagement, productivity, and situational awareness. Large on-screen colour graphics provide an improved visual interface while an integrated speaker provides unique audible tones specific to the on-screen communication. Screens also offer context-sensitive assistance, including alerts, automated assistance, and dynamic real-time data. Safety reminder messages and an inspection checklist with visual cues\* provide industry exclusive capabilities that reinforce operator training.

A refined service menu enables viewing of multiple lift truck inputs and outputs and step-by-step calibrations with voltage readouts which assists in expediting trouble shooting. Technicians can quickly access service history, set up performance parameters, and enable or disable truck features through the display.

**Electrical**

Heavy-duty 48-volt electrical power system provides unrivaled high rack stacker 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 Gena Operating System. Each of the nine microprocessor control 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 utilised where appropriate to sense operating parameters. Only two contactors are needed, greatly reducing wearable items. Colour-coded wiring and Crown’s exclusive InfoPoint System reduces downtime by providing clear direction for the service technician.

**Operator Platform**

The multi-patented MoveControl™ Seat provides unprecedented levels of flexibility for the 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 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 feature standard pivot functionality, or optional flip-up capability, 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, pivot, and features a standard display navigation knob for easy control of the truck display from the seat. 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 Accessories such as a two-speed fan, two LED work lights that are located in the overhead guard, and two overhead LED dome lights. Additional Work Assist Accessories can also be mounted to the standard vertical Work Assist tube, or to either of the standard tubes built into the overhead guard. Multiple storage compartments provide abundant room for personal items and tools. A standard 12-volt accessory outlet and 5-volt, 2.1 amp USB port provide additional power supplies for electronic devices.

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 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.

**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 Mast**

Elevated load sway and side bowing are minimised through the use of a closed cross-sectional 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, cables, and chains 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.

**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. Main lift and auxiliary lift functions, as well as main lower and auxiliary lower functions, can be blended, providing enhanced controllability.

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

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 maximise 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.

Patented OnTrac™ anti-slip traction control monitors truck dynamics, optimises tractive effort, reduces spinning during acceleration, prevents lock-up during braking, and can extend tyre life. It improves traction performance in wet, dusty, or cold storage conditions.

\* Functional with an active InfoLink service plan.

### Intelligent Braking

The Intelligent Braking System combines variable motor braking with a three-step friction brake to optimise 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 minimised, 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 AC electronic steering provides smooth and easy maneuvering for the operator. Top travel speed of the truck is decreased when the steer wheel angle is greater than ten degrees. Further speed reductions occur as the steer angle is increased. This intelligent approach provides 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. Fork 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 removeable covers. Vertical side alignment of the auxiliary mast is maintained by rack and pinion gears.

### Wheels and Tyres

Large, high-load capacity polyurethane press-on load wheels are 355 mm diameter x 205 mm wide. The poly heavy-duty drive tyre is 406 mm diameter x 170 mm wide. Guide wheels for rail guidance are 150 mm diameter x 50 mm wide.

### Warning Device Options

#### Audible Alerts

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 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.*