

CROWN

TSP 1000/1500 SERIES



Let the Work Flow

Crown's approach to equipping our customers with a highly effective very narrow aisle system begins with the flow: an understanding of the work environment, the load handling performed and the performance goals desired. Then, our TSP Series turret trucks deliver exceptional travel, lift and lower speeds—all supported by Crown's heavy-duty MonoLift Mast—to achieve sustained performance results.



Purpose-Built



Safety Focus



Operator-Centric



Smarter System

Purpose-Built, Elevated Results

When you want results, you need your systems, processes and equipment to work together. That's why Crown builds each turret truck to fit the requirements of our customers' applications. Understanding your operational goals, facility requirements and handling preferences, as well as the weight, density and location of the material you need to move, ensures that we build a turret truck that fits your application and helps achieve your business objectives.

Our Consultative Approach Looks at the Big Picture

To ensure that your truck or fleet meets your needs, our consultants focus on three main factors:

- **Facilities.** Includes understanding aisle strategy, ceiling height and floor surface specifications, rack heights and the need for performance in challenging environments like cold storage.
- **Load handling.** The size, weight, shape and consistency of the pallet loads along with racking configurations is critical to the truck specification.
- **Performance potential.** Using simulation software to define possible scenarios, the costs and benefits of each can be analyzed to achieve desired results.



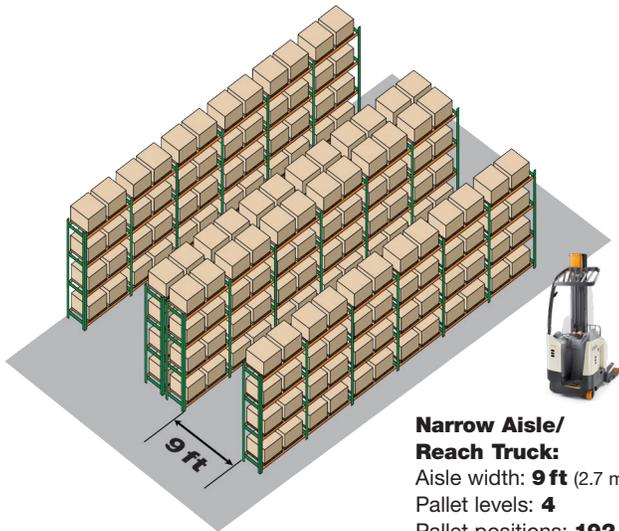
We have developed technology-based tools to help us explore very narrow aisle configurations and benefits that will increase returns. Take, for example, Crown's exclusive very narrow aisle TSP SureSpec software, which gives you a fast, accurate way to spec your truck and optimize your warehouse space.



Assess Facility Opportunities

Optimized cube utilization is the key to success in warehousing. And, with Crown's long-term focus on narrow and very narrow aisle solutions, you can make every square foot count. By understanding the parameters of your facilities, we start with your operation's potential and then balance that with the realities of your application methods and load specifications.

FIXED CEILING HEIGHT IN EXISTING APPLICATIONS



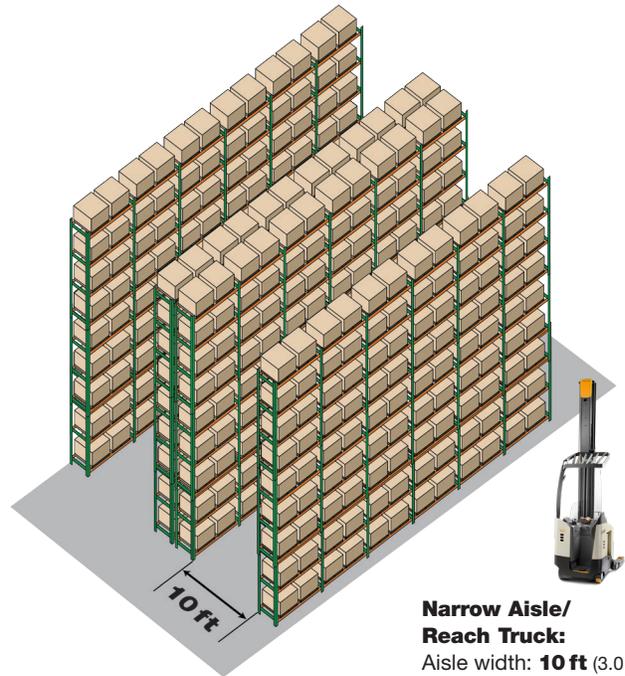
**Narrow Aisle/
Reach Truck:**
Aisle width: **9 ft** (2.7 m)
Pallet levels: **4**
Pallet positions: **192**



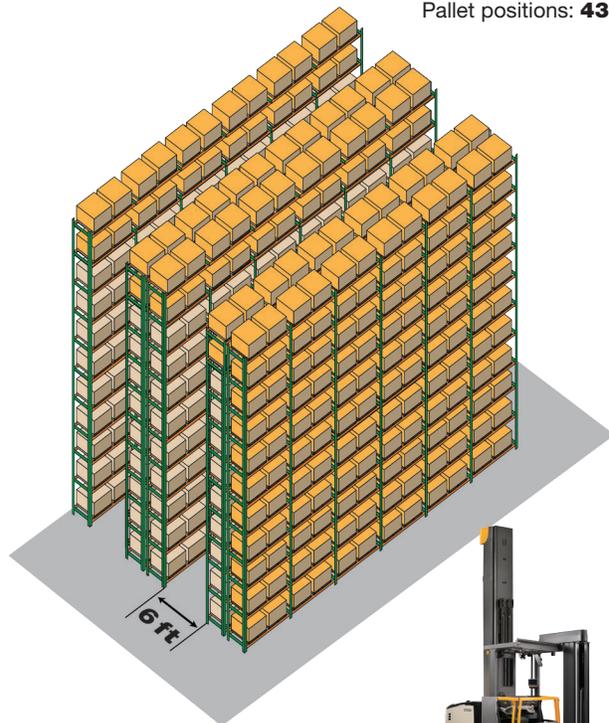
**Very Narrow
Aisle/TSP Series:**
Aisle width: **6 ft** (1.8 m)
Pallet levels: **4**
Pallet positions: **240**

**25%
MORE
PALLET
POSITIONS**

FLEXIBLE CEILING HEIGHT IN NEW BUILD APPLICATIONS



**Narrow Aisle/
Reach Truck:**
Aisle width: **10 ft** (3.0 m)
Pallet levels: **9**
Pallet positions: **432**

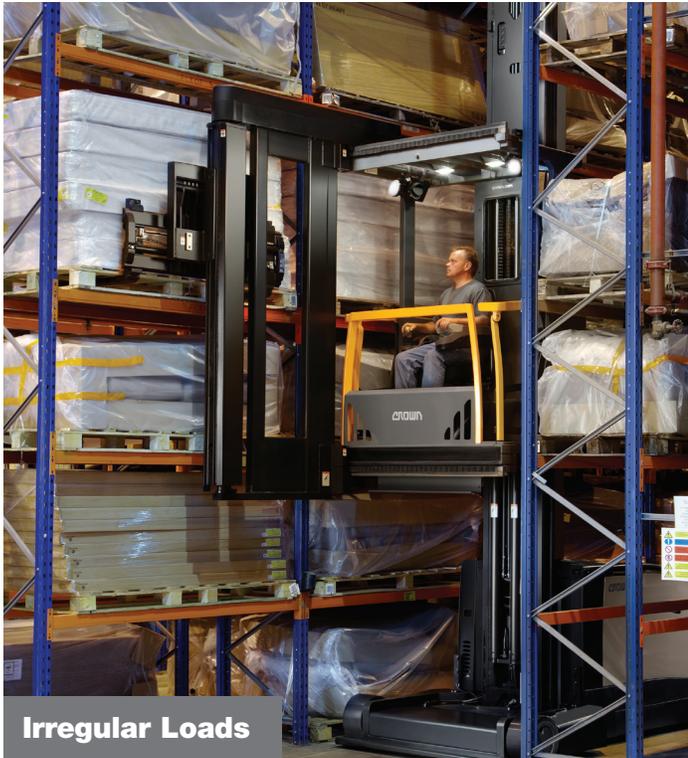


**53%
MORE
PALLET
POSITIONS**

**Very Narrow
Aisle/TSP Series:**
Aisle width: **6 ft** (1.8 m)
Pallet levels: **11**
Pallet positions: **660**

Define Load Handling Requirements

After gaining an understanding of your facilities' layout, we gather information on preferred load handling practices. Standard and optional features on Crown's TSP Series are identified to support your operations and to help drive your desired results. In this phase, we consider the following factors: order picking, full-pallet picking, load type, inventory flow, racking type and other unique requirements such as cold storage.



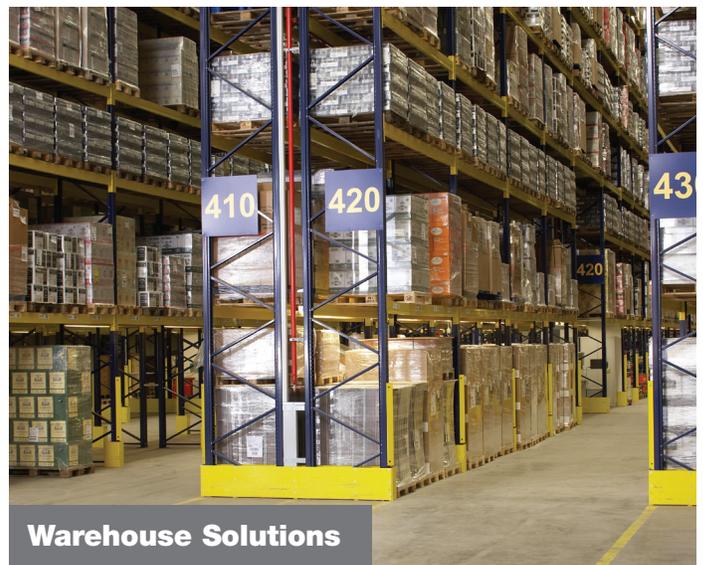
Extended load handlers improve versatility to manage long and wide loads such as furniture, construction materials or mattresses. The optional fork positioner helps in applications with varying pallet sizes.



Sturdy steel side gates and a clear front rail reduce the need for operators to bend or lean when retrieving product from the rack or placing it on a pallet. In addition, the rails can be used to support the weight of the product as it is transferred to the pallet.



The spacious enclosed cabin option creates a comfortable work environment in extreme temperatures to keep the operator on the truck and moving product. It also provides exceptional visibility that contributes to operator productivity and shift endurance.



The TSP Series can be used in a myriad of racking configurations such as push-back rack, deep lane storage and flow rack. Crown's Warehouse Solutions team can assess and recommend racking solutions that can add even more storage density to your operation.

Predict Performance Results

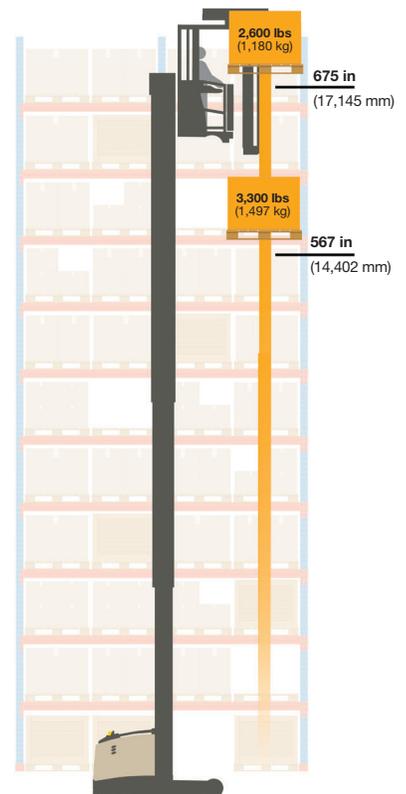
Crown specifically designs the TSP Series to each customer's specifications and needs to deliver the targeted performance results: more throughput, higher operator efficiencies, stronger return on investment and more. It all begins with the right performance and tools.

- Crown's MonoLift Mast, lift and travel speeds support better workflow and operator confidence.
- Leading battery life optimizes truck availability over a full shift.
- Crown's exclusive TSP Estimator Tool helps our sales consultants and customers specify the right VNA truck solution for the environment, application and tasks.

It Begins With the Mast

Crown's exclusive MonoLift Mast makes it possible to move unprecedented capacities to impressive heights.

- **Lift to 675 in** (17,145 mm)
With operators and loads up to 56 feet or six stories in the air, stability is key.
- **Operate from Strength**
Strengthened, boxed-in sections and heavy-gauge steel construction deliver powerful performance and stability.
- **Greater Stability**
Mast design results in less twisting and swaying than a traditional, dual-upright mast.
- **Boost Productivity**
Simultaneous blending of main and auxiliary mast hydraulic functions optimizes movement.
- **Achieve Capacity at Height**
Lift more weight to greater heights — slotting heavier loads nearly anywhere in your operation.

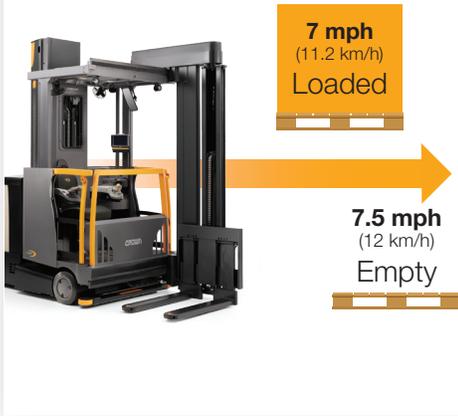


Boost Performance

Increase operator confidence and performance with leading travel/lift speeds that get loads where they need to go—easily and efficiently.

Maximum Travel Speed (mph)

Faster travel speed means trucks get to the pick slot quicker for a **25% advantage**.



Main Lift Speed (fpm)

Faster lift speeds provide a **41% advantage** over competing solutions.



In addition to industry-leading travel/lift speeds and battery performance, Crown offers the latest in operator assist technology with Auto Positioning System and the OnTrac Anti-Slip Traction Control to further enhance performance of your operation.

Auto Positioning System

enables the TSP Series to take the most effective route to the next rack location, **increasing productivity up to 25%**.

OnTrac Anti-Slip Traction Control

reduces tire spin during acceleration, plugging and braking, resulting in shorter stopping distances and longer tire life in wet or dusty applications.



Battery Power Performance

In opportunity charging, the size of the battery is critical to running a full shift. The TSP Series offers a significant charging advantage when compared to competitors with the largest comparable battery.



80V

TSP 1500
83.9 kWh



48V

TSP 1000
71.9 kWh

Crown's TSP Estimator Envisions Future Performance

With Crown's technology, our very narrow aisle product experts consult with customers to define the best system for the job. Factoring in throughput needs, cost per hour and charging cycles, Crown will estimate the optimal fleet size, run times and TSP Series VNA truck specifications to support your application and business needs.



Operator-Centric Environment

With a fully-adjustable, rotating and fold-up seat and precision controls that follow the operator whether seated or standing, the TSP Series operator compartment adjusts to fit the operator and the task. A large floorboard, front top rail, personalized display, and multiple storage compartments and power ports complete the package.



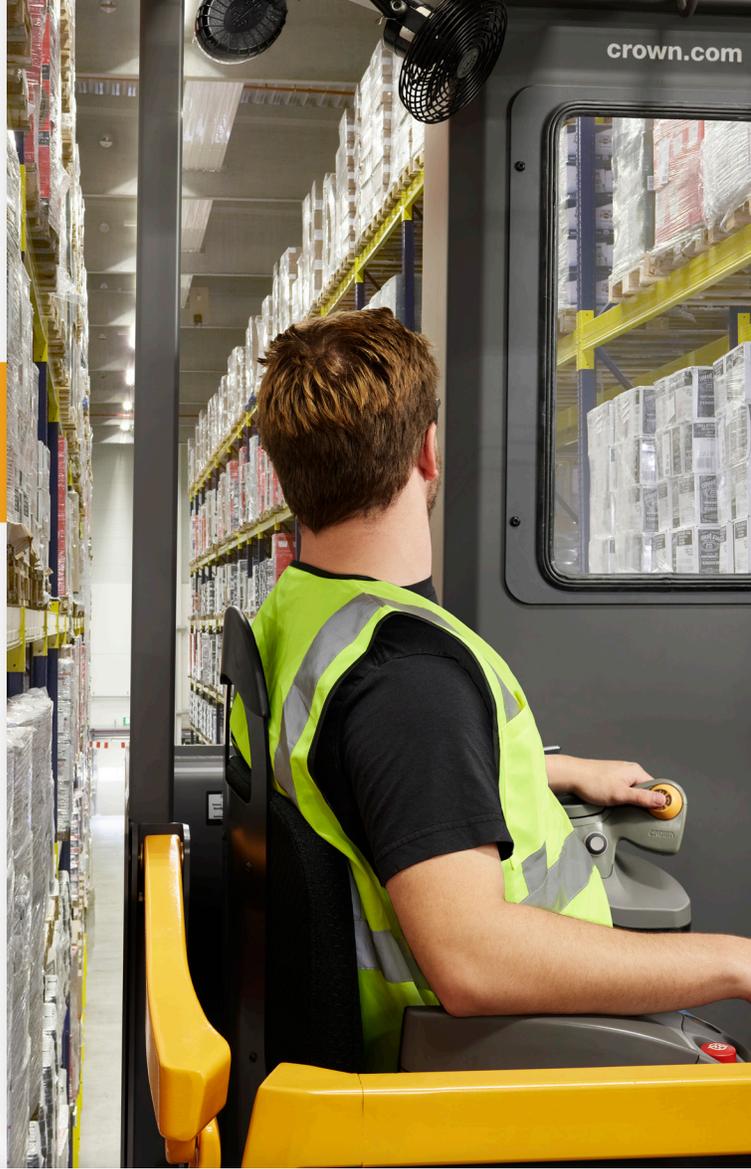
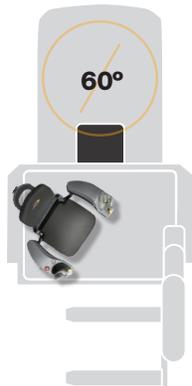
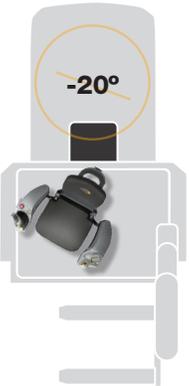
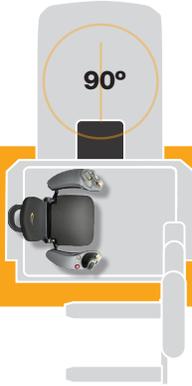
Standing Tasks

are efficiently accomplished with a seat that folds up and controls that adjust to the operator's height.

Productive From Any Angle

Crown provides exceptional flexibility and comfort with the MoveControl Seat. Its integrated controls and full adjustability support operators' every move.

The combination of the MonoLift Mast and the 90-degree seat position offers excellent power-unit-first visibility without compromising operator comfort or control.



Smooth and Precise

Precision is critical when moving heavy pallets six stories above the ground. That's why the TSP Series equips operators with intuitive, blended controls that provide razor-sharp precision on demand. Plus, the controls follow the operator regardless of seat position for uninterrupted workflow.

- Tiller knob
- Auxiliary raise and lower
- Pivot control
- Display navigation knob



- Multi-Task Control
- Main raise and lower
- Traverse control
- Horn
- Emergency disconnect



Operator-Centric Experience

The Gena operating system provides operators with an intuitive, data-rich experience that's fully integrated into the lift truck's architecture. Its 7" touchscreen includes customizable widgets displaying key performance metrics—such as load weight, operating time and battery charge—at a glance. As a result, operators gain a better user experience day-to-day including:

- Simplified user onboarding and prompts on safe operating practices.
- Real-time truck feedback relevant to the task at hand.
- Multiple languages available to accommodate a diverse workforce.
- Customizable display for operators to tailor to their tasks.

Intelligence. Built In.

The intuitive Gena operating system optimizes lift truck performance while providing users with real-time, actionable data.

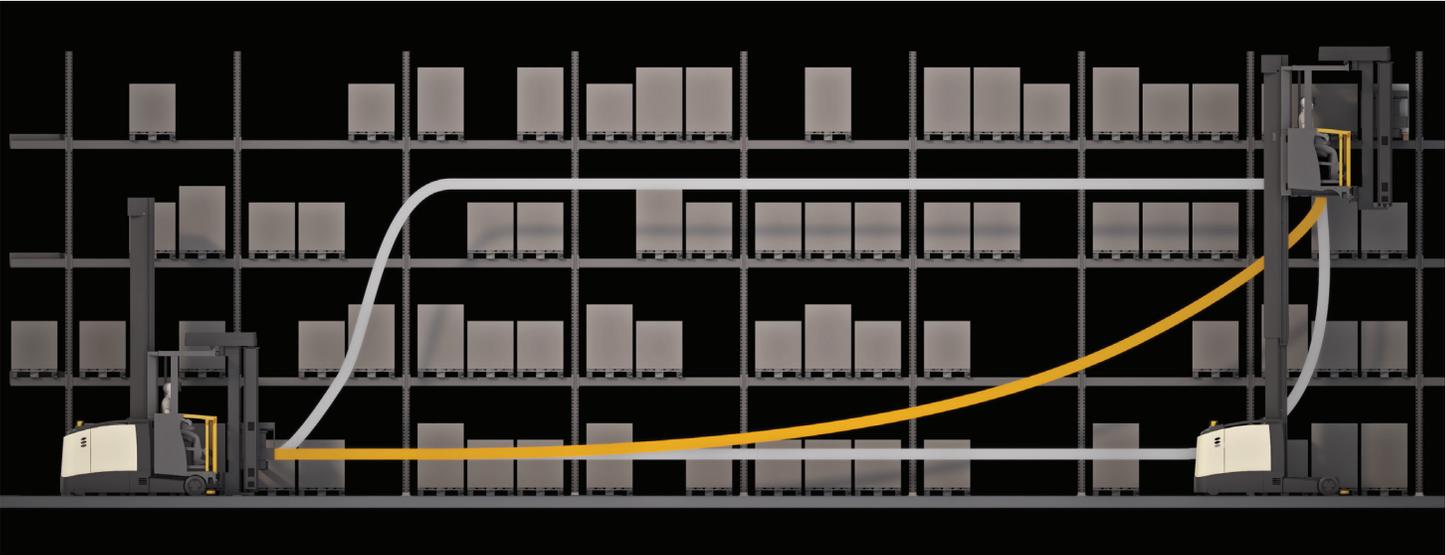


Helping Operators Work Smarter, Safer and Faster

The TSP Series can be equipped with advanced operator assist features that enable safer, more efficient operation.

Auto Positioning System uses a precise blend of travel and lift functions to take the most effective route to a designated rack location, boosting the expertise of the operator and increasing productivity up to 25%. Elevate your facility with:

- Increased Pick Accuracy
- Flexibility
- Reduced Training Time
- Reduced Operator Fatigue



Auto Fence slows or stops travel and limits lift height within the very narrow aisle based on lift truck location.

- Improved Safety
- Upgradeability
- Reduced Operator Fatigue



Speed Limits



Slow/Stop



Height Limits

Safety Focus Builds Confidence

Working at height provides a whole new perspective. The TSP 1000/1500 is built with safety in mind to provide guidance, help increase operator awareness and provide a safe and productive environment when working 56 feet in the air.

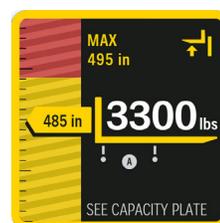
- MoveControl Seat rotates for unobstructed views.
- Presence pedals on the floorboard require the operator's feet to be in the proper position before activation.
- Side gates provide postural support and assist the operator in moving product.
- The front rail protects against intrusion and offers additional support when order picking.

Capacity Limit Alerts

The Capacity Data Monitor provides load weights, lift heights and capacity limits at a glance. Color-coded visuals are designed to alert the operator of current status, so they stay within specified load limits.



Gray – load is below capacity and lift height limit.



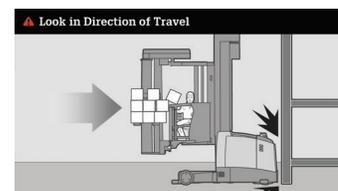
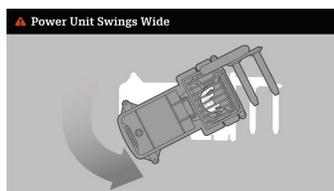
Yellow – load is approaching the lift height limit.



Red – load exceeds capacity or is above lift height limit.

Safety Reminders

Upon login, the TSP Series displays safety messages paired with illustrations to remind operators of their training.

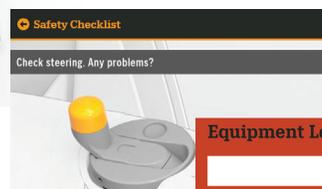
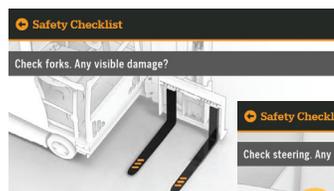


Simplified InfoLink Integration

The TSP 1000/1500's Gena operating system is designed for easy integration with Crown's InfoLink Operator and Fleet Management System.* InfoLink provides real-time and historical operational data that reveals areas of risk and identifies areas of opportunity. InfoLink features that help promote safe operating behavior include:

- Access control
- Visual inspection checklist
- Impact detection and alerts
- Equipment lockout

InfoLink



*Requires InfoLink service plan



Smarter System Longer Uptime

Turret trucks are important investments for the productivity of your operation. Optimized uptime and performance are critical. That's why Crown offers a combination of advanced technology and robust construction to deliver serviceability and reliability required for success.

Service Simplicity

Wireless system updates keep lift trucks updated without burdening technicians.

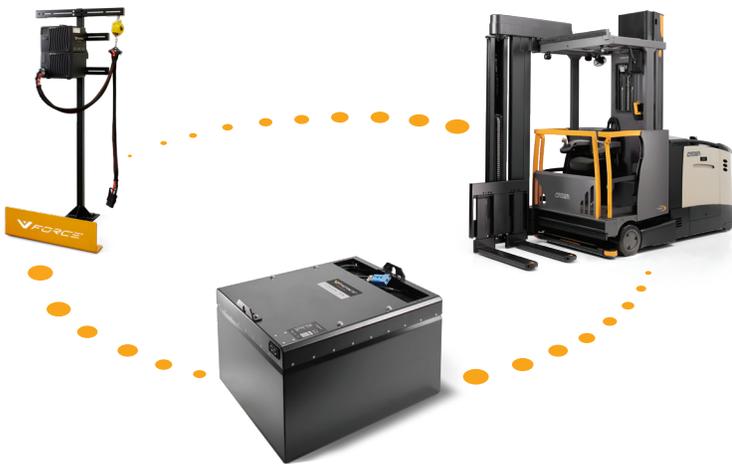
Easy-to-adjust settings or return to factory defaults save technician time.

Analyzer allows the selection of individual system components and view of all associated inputs and outputs.

Step-by-step calibration instructions with visuals for improved technician efficiency and consistency.

Easy access covers, panels and skirt door can be quickly removed or opened for inspection and service.

Separate electronics and hydraulic systems keep oil and heat away from electronics for greater long-term reliability.



Power Up with a Single Source

From our expertise in power management to our complete line of V-Force Energy Solutions, Crown utilizes a system approach to provide solutions you need to power your forklift fleet.

- Onsite Evaluations
- Fleet and Battery Management
- Integrated Solutions
- Complete Support
- Batteries, Chargers and Accessories for Lithium-ion and Lead Acid

Steel Where It Counts

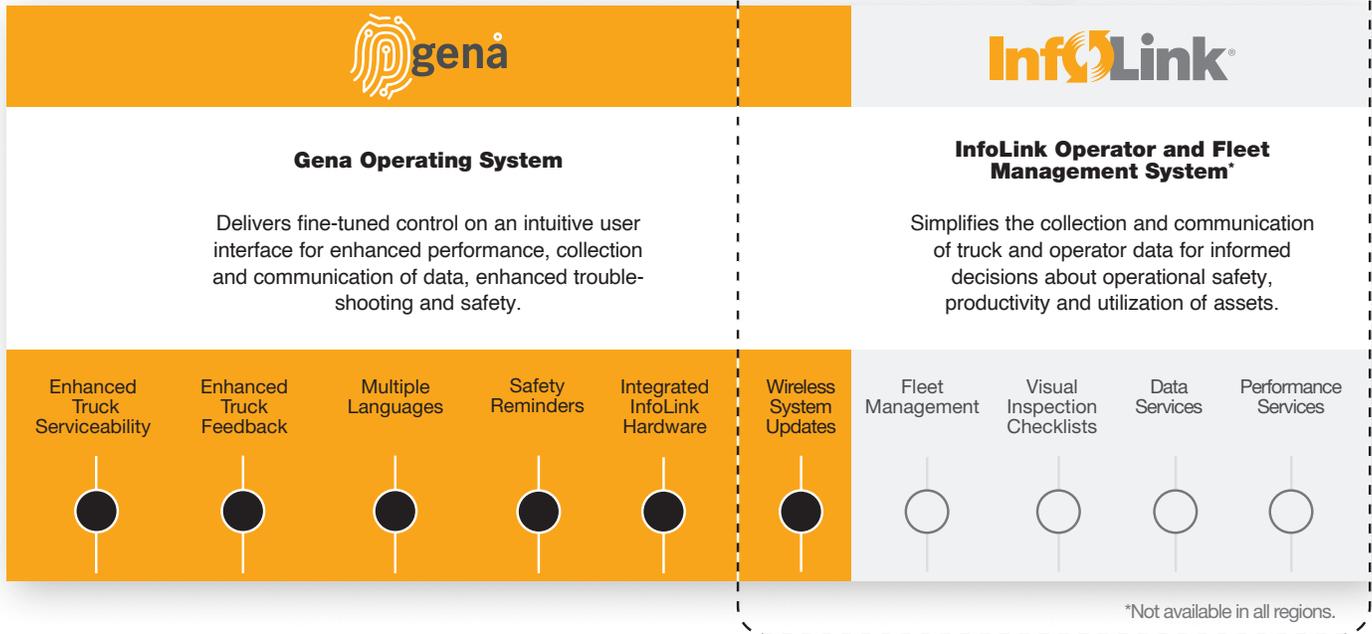
Crown's TSP Series features a heavy-duty steel frame and steel covers, combining a rock-solid foundation and robust component protection for longer lift truck life.



Connect to Achieve More

Crown connected solutions provide real-time, actionable data to stakeholders tasked with achieving and maintaining gains in areas of productivity, safety and utilization.

The TSP 1000/1500 Series comes standard with connected features through the Gena operating system, plus the option for additional features through Crown's InfoLink Operator and Fleet Management System.



Crown's Proven Support Network

Crown's expansive service network of technicians, supported by extensive parts availability, can provide the maintenance and training you need to fully leverage your investment.



Safety and Training

Our comprehensive training programs for operators, supervisors, technicians—and even pedestrians—can help support your efforts to provide a safe and productive work environment. Our DP TrainSafe Train-the-Trainer program, offered locally, can provide your organization with tools to efficiently train new operators using your own resources. Demonstrated Performance Service Technician Training goes above and beyond traditional classroom training, allowing participants to work on lift trucks with instructor supervision.



Forklift Maintenance and Repair

Crown's Integrity Service System keeps your forklifts running—regardless of brand. From time and material to complete maintenance, our Integrity Service System offers a variety of service plans to suit your needs in an efficient and cost-effective way. Our well-stocked, GPS-dispatched service vans help ensure your service technician arrives with the right part at the right time.

Put the TSP Series to Work for You.

Contact your local Crown dealer for a demonstration.



Visit crown.com

See the TSP 1000/1500 Series

ecologic

Clean Environment. Smart Business.

Printed on elemental chlorine free and sustainably forested paper.

CROWN

crown.com

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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