

Logistics News: Crown Equipment Corporation Releases Innovative New IC Fork Truck Developed in Partnership with John Deere

C-5 Series Designed with Operator Needs and Maintenance Costs in Mind, Company Says

SCDigest Editorial Staff

The News: Crown Equipment unveiled its new internal-combustion (IC) industrial grade 6,500 pound capacity forklift called the Crown C-5 Series. Featuring a rugged John Deere "diesel-like" inline 4-cylinder 2.4 liter LPG engine, with on-demand cooling and power brake system, the new C-5 Series will be built at Crown's manufacturing facility in Green Castle, Indiana. It is the first IC truck manufactured by Crown, which has been in the electric truck market for 50 years.

The first C-5 shipped 3 yrs ago and there are now over 300 units operating in customer facilities in a variety of applications as part of a lengthy development and testing cycle. The product has now been officially released in the market.

To see our Video Review of the new Crown C-5, go here: [Crown C-5 Fork Truck Video Review](#).

Why it's Worth Noting: The product marks the first entry by Crown in the IC market, and the new C-5 will turn a few heads given its innovative design.

In business for 5 decades, Crown has grown into one of the world's largest manufacturers of lift trucks, with \$1.8 Billion in annual sales. Well known for its broad line of electric lift trucks, with the introduction of its own IC forklift (the C-5 Series), Crown can now offer a full range of lift trucks for manufacturing and DC applications, mixing electric and IC.

Crown said that in researching the IC market, it found that IC truck cost-of-ownership could be reduced by upgrading or improving the design of engines, transmissions, radiators, and braking systems.

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Applying its own considerable lift truck design and application experience in close collaboration with John Deere's agricultural and construction engine group, Crown claims it has significantly improved the performance and reliability of its new IC forklift versus the current state of the market.

Perhaps surprising to some, IC trucks represent 50-60% of the total US fork truck market, and are required in many applications that demand more strength and durability than electric trucks. Common in manufacturing operations, today's IC trucks can easily be used in distribution environments that have good ventilation.

According to Crown President **Jim Dicke III**, "We saw this as an opportunity to help our customers move beyond the existing limitations of typical IC truck performance."

The Story: Based on service records kept by Crown's own "stores" and those of its dealers on thousands of IC lift trucks, Crown concluded that

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costly maintenance and repairs prove to be all too commonplace, especially for IC trucks operating in tough applications.

Crown believes that this sub-par performance can be traced back to the universal reliance on automotive-style power systems. Recognizing this as one of the key operational and productivity deficiencies, Crown's design engineers partnered with John Deere's industrial power systems engineers to produce a 2.4-liter industrial grade engine for the Crown C-5 that integrates the best practices from the rugged diesel engines used to power John Deere's agricultural and construction equipment with the best practices from Crown's considerable expertise in lift truck design.

Crown claims that this collaboration produced a new more robust power system specifically designed for handling the tough indoor and outdoor applications, while extending the C-5's lifespan to twice that of existing IC trucks. The C-5 is designed for 20,000 hours of use, according to the company. Crown also says the C-5's horsepower and low-end torque are the most powerful in the IC market, allowing for improved performance during acceleration, incline-loaded travel, and carrying or pushing heavy loads.

To solve engine overheating problems, Crown's design engineers equipped the C-5 with a dual-core radiator with separate cooling system for the engine and transmission. For heat intense and dirty environments, there is an optional and exclusive On-Demand Cooling system that automatically clears itself of debris and provides precise cooling when needed.

Crown says it also developed a unique self-adjusting power disk braking system that provides 90% more friction area than the typical drum brake. They claim that their new power brakes reduce operator pedal effort by 53% while improving responsiveness and brake life.

The C-5 comes with a long list of interesting standard and optional features - far too many to cover in any detail in this space. However, SCDigest did



<http://www.scdigest.com/ASSETS/NEWSVIEWS/09-11-10-1.php>

take special notice of the following operator features:

- **Driveability:** It appears that the C-5 is operator friendly starting with creature comforts like a brand new seat design Crown calls Flexseat, which it claims is the widest, most durable and flexible seat on the market. There is considerable more headroom and convenient hand-holds for ease of entry and exit. Also, equipped with Crown's "floating cab" technology that minimizes impact and vibration, there should be less wear and tear on the operator over a work shift thereby increasing productivity.
- **Visibility:** According to Crown, loaded forklift trucks are driven in reverse more often than forward because a full pallet load blocks forward vision. In addition, based on the way various companies interpret OSHA regulations with regard to unobstructed visibility, they require their drivers to operate the truck in reverse all the time. Therefore, Crown's design engineers created a large "rear window" by lowering the C-5's counterweight and LP bottle bracket while at the same time providing a higher and wider seat. Also, the Flexseat back is contoured to make it easier for the operator to look over his or her shoulder.
- **Fuel Efficiency:** The C-5 can operate in two modes: normal or productivity mode, when speed and performance are the top priority; and

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"economy mode," which scales back performance slightly but results in much reduced fuel usage.

Crown says the C-5 is slightly more expensive than existing IC trucks, but that those additional costs are easily overcome by extended truck life, reduced maintenance costs, and improved productivity.
