



Beginning as a Cardboard Prototype, the 2022 F-150 Lightning Pickup's Mega Power Frunk Now Boasts the Largest Front Trunk in the Truck Industry

- Ford truck and fleet owners and customers guided decision-making for the innovative design of the F-150 Lightning pickup's Mega Power Frunk, leading to multiple power sources and enough space to house two golf bags
- Ford user experience team uncovered important customer wants with cardboard prototype made in a few hours with scissors, a razor blade and a hot glue gun
- Mega Power Frunk design and engineering teams faced lofty challenges, including an asymmetrical frunk, drainable floor and waterfall hood design to meet customer expectations

DEARBORN, Mich., Nov. 16, 2021 – A cardboard box found a new lease on life after being recruited by Ford to help develop a new feature known as the Mega Power Frunk. The all-electric 2022 F-150 Lightning pickup's new front trunk or, as it's known in industry speak "frunk" is the largest in the truck industry – with 400 liters (14.1 cubic feet) of cargo space and maximum payload capacity of 400 pounds.¹

"The F-150 Lightning pickup's Mega Power Frunk is one of those features that reshape what vehicles can provide for customers. It's sheer size, ample power supply, drainable floor and open and close system that opens with the touch of a button make it frunking awesome!" said Linda Zhang, F-150 Lightning Chief Program Engineer.

What many don't know is this spacious and dynamic space began life as a simple cardboard box with a cutout front door and a liftable hood.

Understanding the Customer's Needs

It began back in February 2018 with Team Edison – Ford's dedicated battery electric vehicles incubator that incorporates close collaboration between different teams to find solutions to customer needs. A small group of young user experience designers set out to California, where they sat down with actual Ford truck and fleet customers to talk about how they might use such a feature. The prototype, made of cardboard for simplicity and cost and built in about a day using scissors and hot glue, was brought to every meeting to help customers visualize the opportunity.

In the studio, Greg Ardisana, design strategy director, passenger vehicles, and other Team Edison research members worked as consultants alongside engineering and design whenever they had customer use questions, which led to a close-knit collaboration between groups.

"Since the frunk was a new space, all the truck customers we interacted with got really excited about what it could be and what use they could get out of it in their daily lives," said Ardisana. "We needed to take what they wanted and find a way to deliver on it."

Truck customers imagined fitting not one, but two golf bags, even when it wasn't a golf day. The additional permanent storage keeps valuables out of sight, is lockable and secure. Fleet owners saw their crews using the space to haul bags of concrete and charge their electric tools at construction sites. Customers also wanted lights to see at night, electric outlets,

a work surface and optimized access height to make the space truly usable. All of these valuable insights were derived from a simple piece of cardboard.

An asymmetrical frunk for two golf bags

There were challenges. Due to cargo volume numbers provided by vehicle architecture engineers, the first was the size of the frunk. It had to fit two golf bags, but this meant sacrificing a symmetrical frunk design.

The team treated it like a cooler box that needed to be durable and easy to clean, and have a rubberized floor with anti-slide properties. Once the frunk fit the main shell, finding ways to add all of the features on the customer wish list was the next hurdle.

Lighting and power

Lighting began as typical trunk lighting. It was functional, but the “wow” factor was missing. So the team pivoted and installed truck bed lamps in the frunk hood. The lamps offered a lighting source on the inner side of the hood, which prevented cargo from blocking lights and did away with unwanted glare and shadowing of the load area.

Four electrical outlets and two USB chargers were added to provide versatility for work and play. 2.4 kilowatts of power are available for everything from TVs to laptops, speakers to crockpots, power tools and other devices.

Accessible, drainable and opening and closing with ease

Lastly, access to lift and remove objects from the frunk had to be waist-height, as customers did not want to have to reach over the truck’s bed rails for their equipment. The waterfall grille was integrated into the hood by the engineering and design teams who were able to create an accessibility height that is similar to the rear cargo area of a Ford Expedition. The Mega Power Frunk has a powered open and close system also with six different ways to open it, including from your phone on the FordPass app as well as through an integrated push button on the grille².

Once the frunk is open, customers can fill it with ice and drinks to “frunkgate” it, since it’s water-resistant, cleanable and has a drainable floor.

Steve McInally, frunk feature supervisor, said the team explored every detail as an opportunity. “We put the customer first in every decision we made and were able to deliver on a Mega Power Frunk,” he said. “And it’s going to blow people’s minds.” The 2022 F-150 Lightning pickup will be available starting Spring 2022.

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¹Cargo and load capacity limited by weight and distribution.

²FordPass App, compatible with select smartphone platforms, is available via a download. Message and data rates may apply.

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