

EV SCOOTER DESIGN & PRODUCT DEVELOPMENT

From 3D Scanning to Improved Design



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THE CHALLENGE

HEADLIGHT FITMENT & CLEARANCE ISSUES

An EV scooter manufacturer faced key integration challenges in the front assembly:



Headlight mounting and integration



Limited space in the front assembly



Headlight-mudguard interference during speed breakers

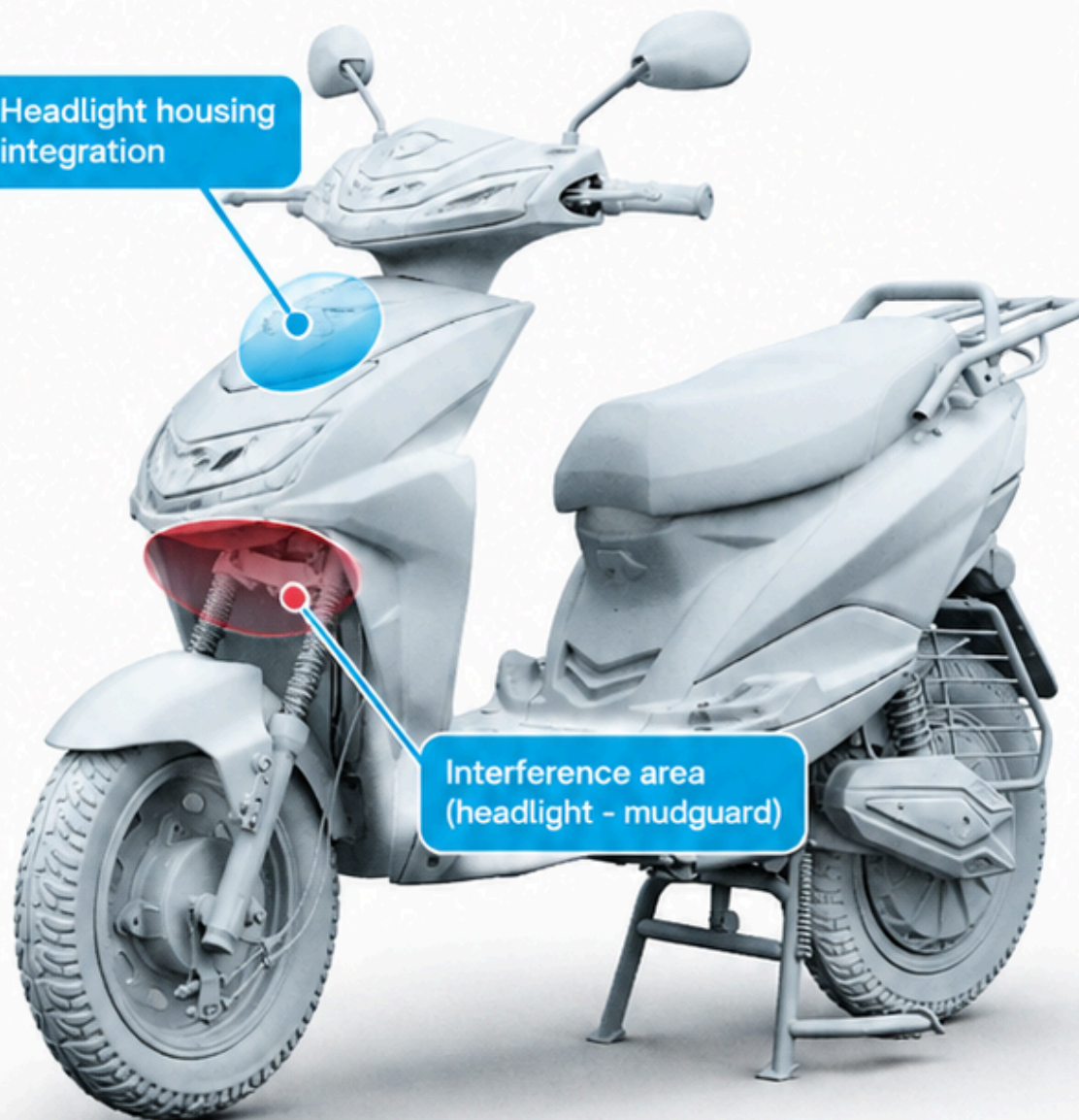


The Goal:

Better fitment. Improved clearance. Smarter design.

Headlight housing integration

Interference area (headlight - mudguard)



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OUR APPROACH SCAN. ANALYZE. REDESIGN.

Using i-Scan Light 3D Scanning Technology,
we captured the scooter's front assembly to:



Digitize existing
geometry



Analyze dimensional
constraints



Identify interference
areas



Support accurate
component redesign



DESIGN & SCANNING WORKFLOW



Result: A reliable representation of the existing geometry
to support accurate redesign.



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THE DESIGN SOLUTION ENGINEERING A BETTER FRONT ASSEMBLY

Using the scan data, we analyzed and redesigned the affected components to resolve the fitment and clearance challenges.

KEY DESIGN IMPROVEMENTS



New front nose component
to accommodate the headlight housing.



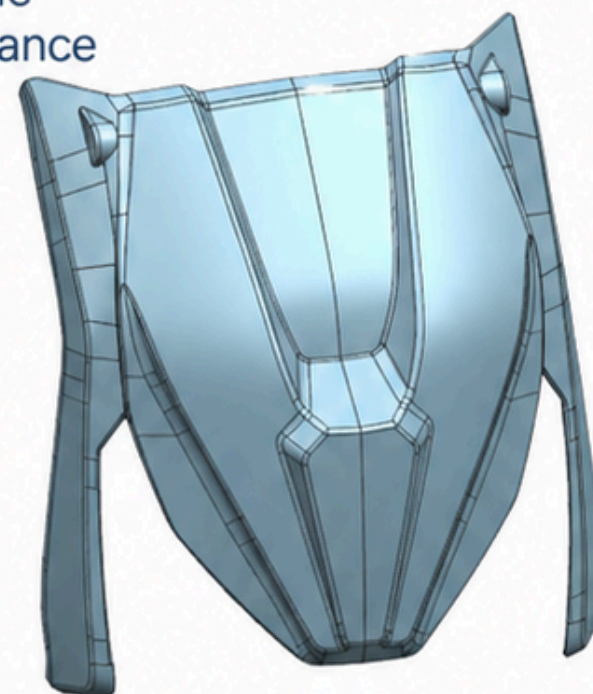
Improved supporting structure
for headlight integration.



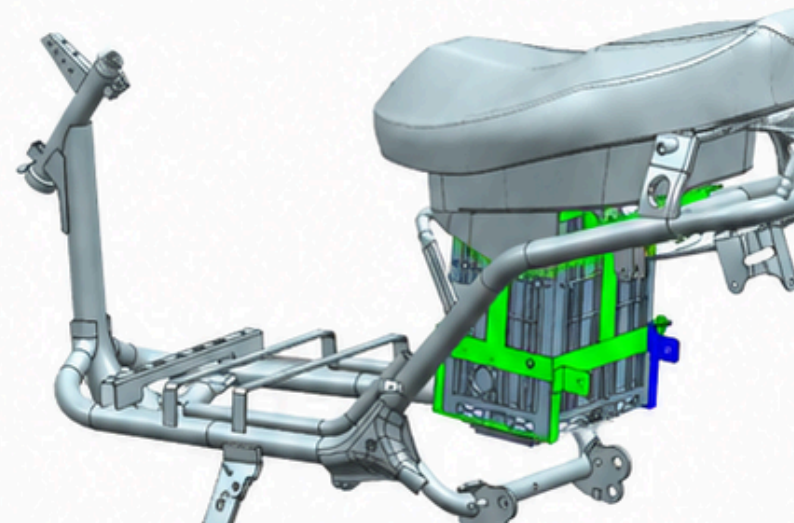
Revised geometry
to address headlight-mudguard interference.



Updated CAD files
for prototyping, testing and manufacturing support.

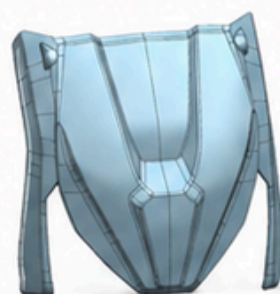


Redesigned Front Nose Component
(CAD Model)



THE OUTCOME FROM PHYSICAL COMPONENTS TO DIGITAL DESIGN.

By combining 3D scanning, dimensional analysis, and CAD design, we supported the development of an improved EV scooter front-end design.



3D Scan Data
(Front Panel)



Redesigned Component
(Seat Frame Assembly)



3D Scan Data
(Rear Bumper)



Improved Supporting Structure
(CAD Model)



3D Scan Data

Digital capture of
real geometry.



Dimensional Analysis

Understanding
fitment constraints.



Redesigned Components

Improved integration
and clearance.



Updated CAD Files

Ready for prototyping,
testing and manufacturing.



Need 3D Scanning or CAD Design Support?

**LET'S TURN YOUR PHYSICAL COMPONENTS INTO
ACCURATE DIGITAL DESIGNS.**