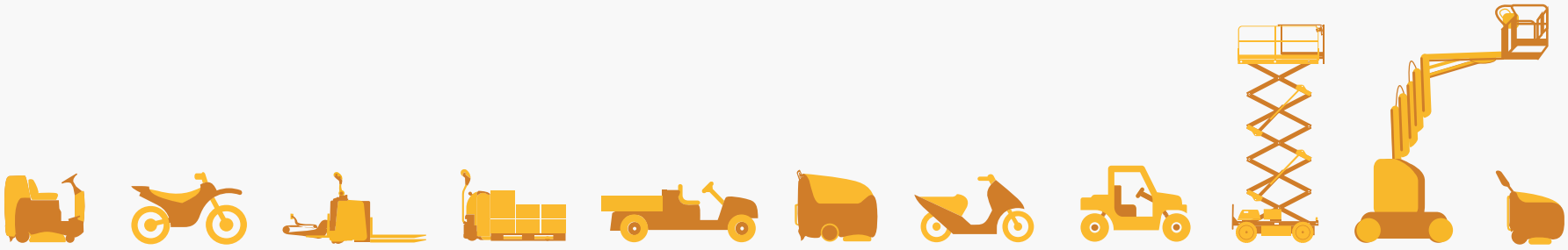
The Charge Series: Live Webinar

Day 4, May 21, 2020



Our Speakers

Conway Hui
Director of Sales Application Engineering and Customer Support

Amanda Yeo
Marketing Manager

About Delta-Q Technologies

- Leading manufacturer of battery chargers for lead-acid and lithium-ion batteries
- Supply chargers to Tier 1 OEMs in markets such as:
  - Floor care,
  - Material handling,
  - MEWP,
  - E-Mobility and
  - Golf
- 3M+ vehicles rely on Delta-Q chargers today

Agenda

- The Charge Series Recap
- How to Extract Charge Data
- Integration of High Reliability Chargers
- Product Reveal
- Q&A Session

The Charge Series Recap

Day 1

Charger Validation Testing

Minimize the risk of charger failure with charger validation testing and best design practices

Day 2

Charger Software

A wrong charge profile can lead to suboptimal charging, reducing battery life and machine runtime

Day 3

Charge Data

Charge data can predict potential battery failure, and gather information to help enforce warranty claims, avoiding expensive service calls, and more.

Poll: Which session was the most helpful?

a) **Day 1:** Prevent Charging Failures with On-Board Battery Charger Validation Testing

b) **Day 2:** Mitigating Premature Battery Failure with Charger Software

c) **Day 3:** How Leveraging Charge Data Can Save Thousands of Dollars

Q&A Session

Extracting Charge Data

Data Extraction: Direct Method

How to get this valuable information to the user/owner?

USB Drive

Data Extraction: Direct Method

How to get this valuable information to the user/owner?

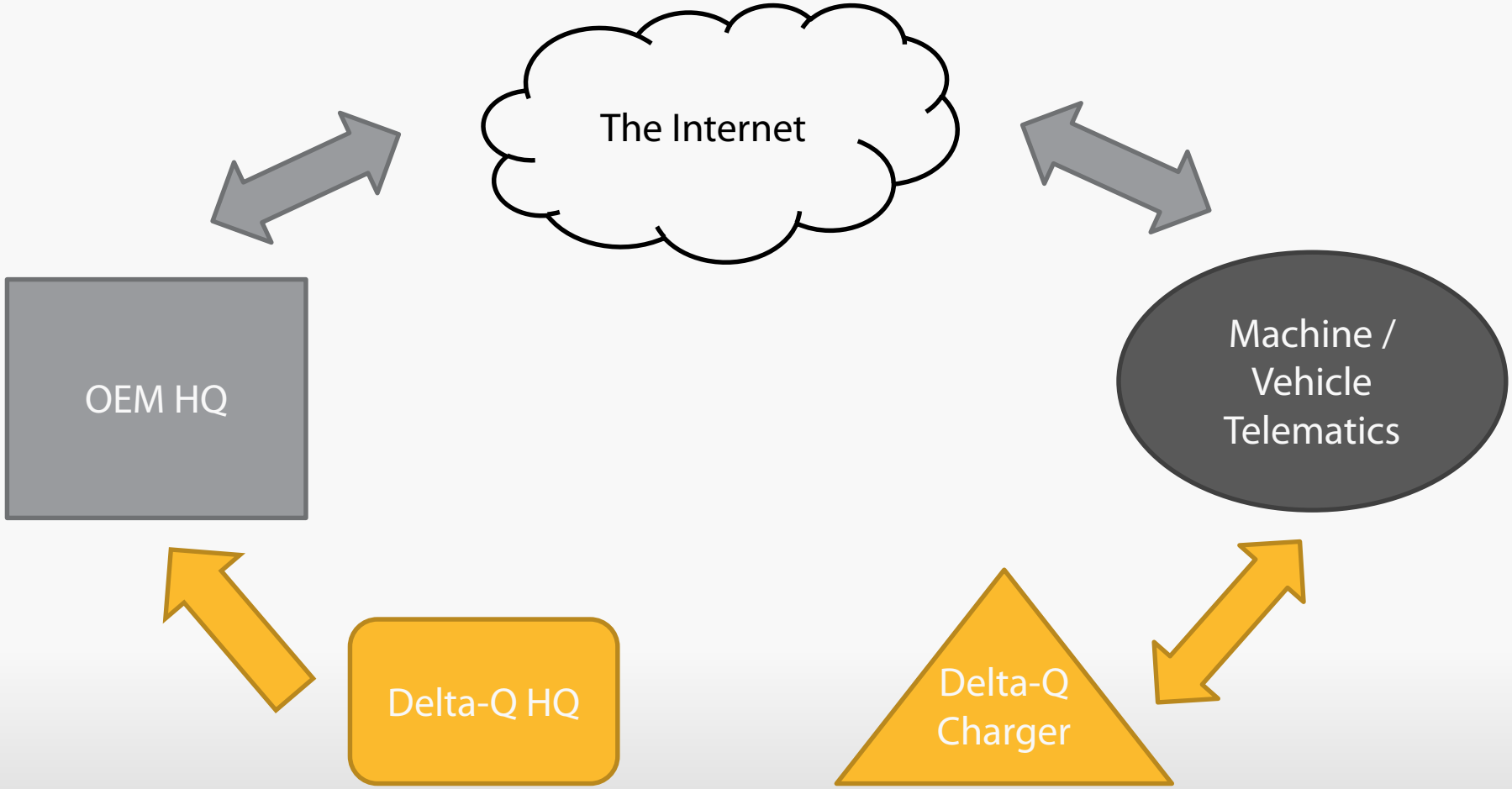
CAN Tool

Data Extraction: Direct Method

- Easily analyze the data locally at the machine or remotely
- Customers send data from their USB download for analysis
- Technician on-site can self-analyse with free “Simple IDAT” tool

Data Extraction: Telematics Path

Indirect Method: CAN-to-Cloud



Data Extraction Key Takeaways

- Delta-Q's preferred method is called the "telematics path"
- Allows information sharing from equipment in the field to your own cloud-enabled network
- Key benefits:
  - Generate insights and solve common problems related to chargers
  - Guide future charger design improvements
  - Charger manufacturers can send software updates to chargers

Integration of High Reliability Chargers

Tip #1: Choose a Charger That is Compact & Sealed

Tip #1: Choose a charger that is compact, the right power, and sealed

- Small chargers can be installed in more places
- The right power level ensures space is not wasted on power that isn't needed
- Sealing prevents dust, water, and other fluids from entering the hidden charger

Tip #2: Allow for Airflow

Tip #2: Allow for air flow

- Providing space for convection air cooling will help it operate better
- Add a fan only if needed

Tip #3: Add a Remote Display

Tip #3: Add a remote display

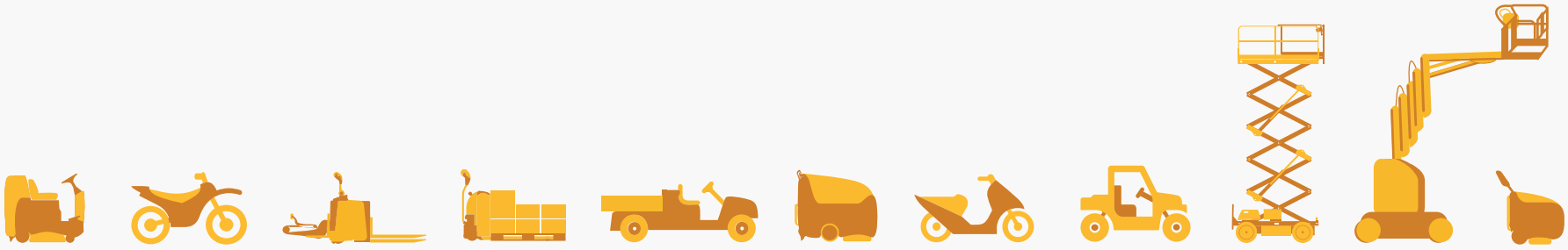
- Ensure the end user is able to get good information about charging
- Can be as simple as a single LED
- We recommend a CAN-based display

Q&A Session

delta-q TECHNOLOGIES

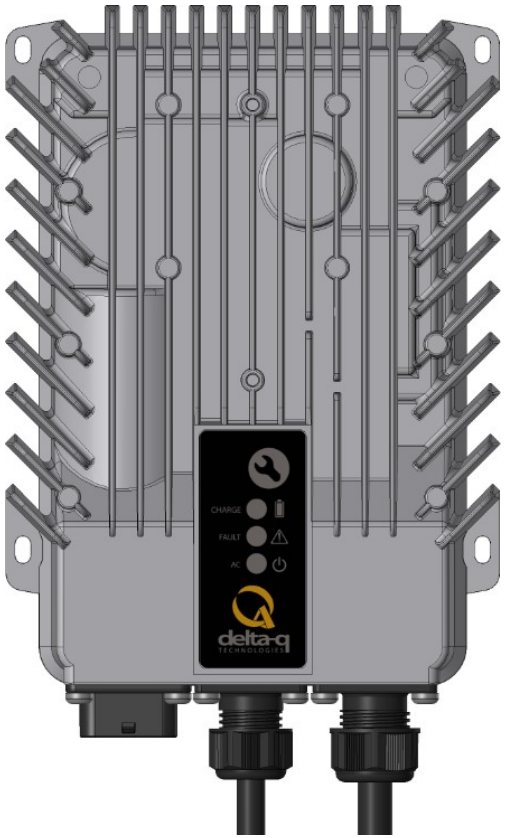
Introducing the RQ350 Battery Charger

350W charger for lead-acid and lithium-ion batteries



Why the RQ350?

- Deliver features, such as fast charge and high reliability, which are rare among 350W chargers
- Durable, automotive-grade and fully sealed charger
- Ensures maximum machine uptime and high battery performance



Market Challenges

High Charger Failure Rate

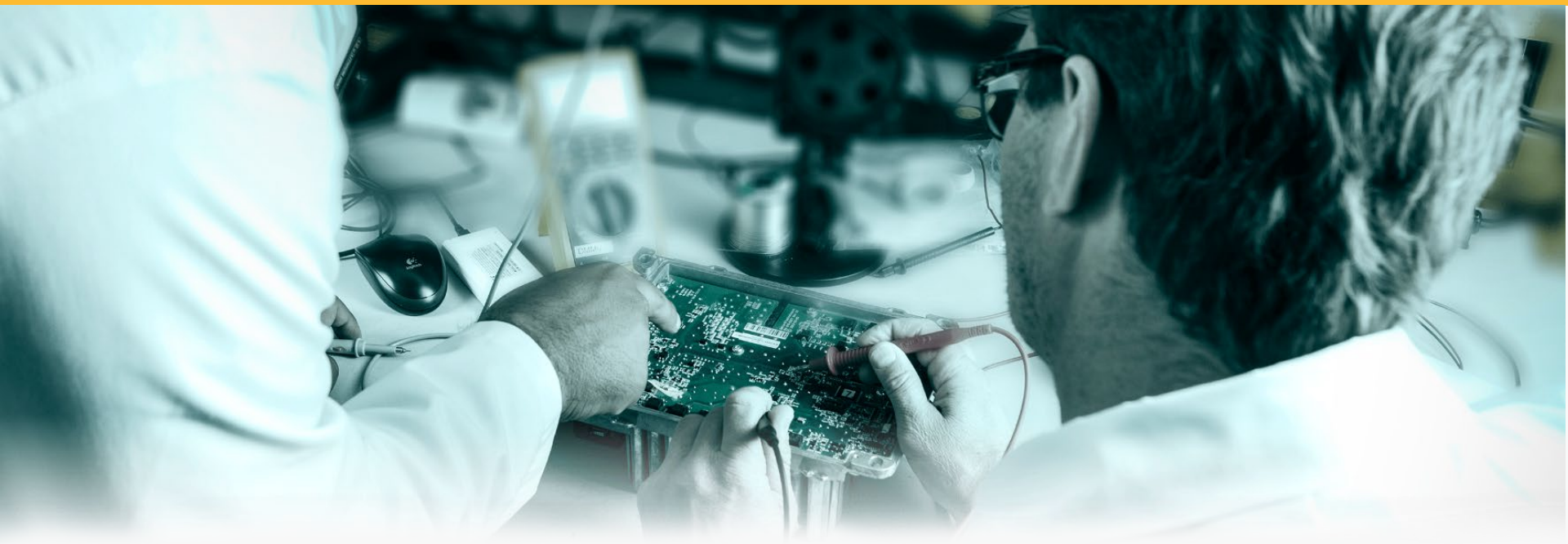
Unhappy Customers

Increased Warranty Costs and Maintenance Spending for Manufacturers

Addressing Market Challenges

The **RQ350 Charger** addresses all these challenges and provides numerous other benefits that is ideal for small floor care equipment

Advanced Battery Charger Design



- Designed for reliability, charge quality, and ease of integration
- All Delta-Q products share the qualities of charging performance through lab-validated charge profiles, advanced power electronics, and a customer-focused mindset

Charge Profile Menu

Key Benefits

SEALED & RUGGED
IP66 rated design for dirt, water and chemical resistance and to withstand automotive shock and vibration

COMMUNICATION & CHARGING CONTROL
CANopen and J1939 protocols to communicate with vehicle, telematics and Lithium BMS systems.

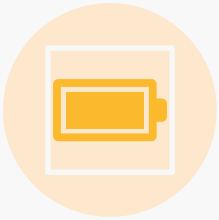
SYSTEM INTEGREATION
Capitalize on extensive battery management system (BMS) support and expertise

RESIDENTIAL/AUTO-MOTIVE EMISSIONS AND IMMUNITY
FCC B / CISPR 14 compliant for installation on residential power circuits. UNECE R10 compliant for EMC on-road vehicles.

Key Benefits

Reliability

Total Value of Ownership



Longer Battery Life

Fewer Warranty Claims

Data Integration Using CAN Communication

All of the **CAN integration** features in our other charger lines are available in the RQ350

Team of Experts

Dedicated global team to:

- Help you come up with a charger configuration and integration solution
- Train staff and service group
- Assist with field issues or questions about fielded chargers

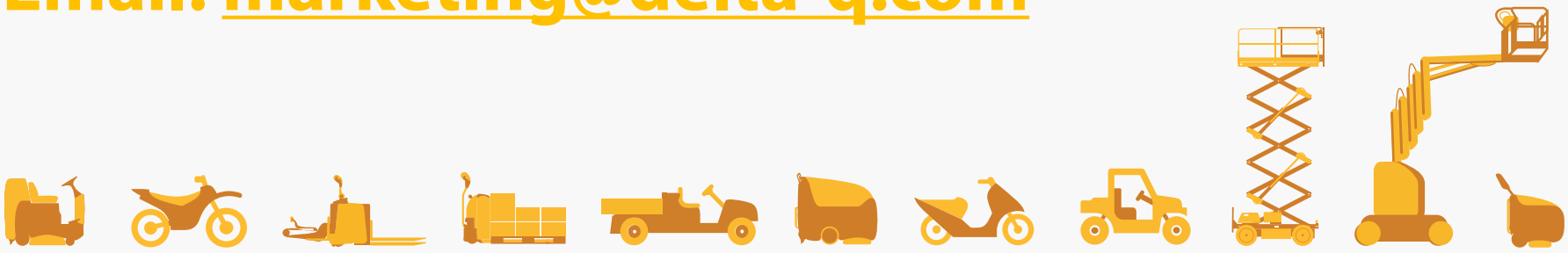
RQ350 Key Takeaways

- The RQ350 delivers features that are rare among existing 350 chargers for small floor care machines, such as fast charge and high reliability
- It is a durable, fully sealed, automotive grade battery charger
- Like all Delta-Q chargers, it shares the qualities of charging performance through lab-validated charge profiles that are developed in Delta-Q's state-of-the-art battery lab
- The RQ350 ensures maximum machine uptime and high battery performance

delta-q TECHNOLOGIES

Book a Consultation Call with our Team!

Email: marketing@delta-q.com



Thank you! Questions?