



CHARLATTE
A M E R I C A
FAYAT GROUP

Charlatte America
H2 @ Airports 2020
Rob Lamb – Vice President
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- CHARLATTE builds its first electric vehicle in 1984
- In 1993 CHARLATTE America incorporated
- In 1999 CHARLATTE acquired by FAYAT Group

Fayat Group is family owned in Bordeaux, France.

Comprised of 208+ companies with an annual revenue of over €4.5B.

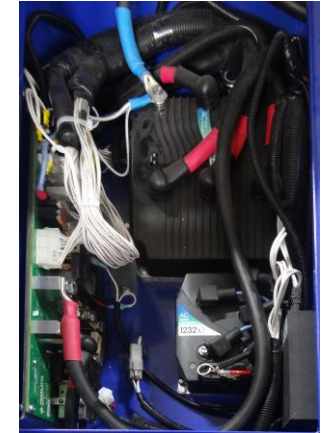
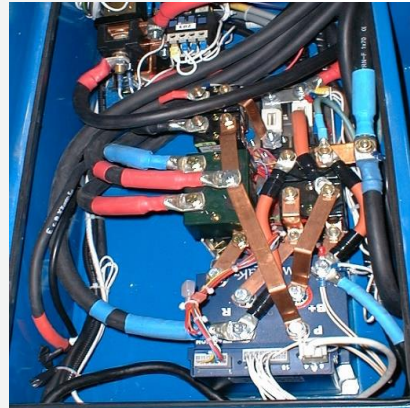


- #1 Manufacturer of Electric Tractors and Beltloaders
- More than 25,000 electric vehicles worldwide



Evolution of Airport GSE





DC Traction
Solid State
SCR
Controller

DC Traction
PowerpaK
Controller

AC Traction
Power
Curtis
Controller

AC Traction
AC Steering
Curtis
Controllers
PCBs

Battery Types

- Flooded Lead Acid
- Gel Cell
- Absorbed Glass Mat (AGM)
- Lithium Ion



Charging Methods

- Standard Overnight/Trickle
- Semi-Fast
- Fast/Rapid



- Alaska Airlines
- Amazon Air
- Delta Airlines
- FedEx
- United Airlines
- European Market – Surge in Electric Vehicles started here
– Airlines as well as Ground Handlers historically purchase 2X vehicles due to overnight charging vs. fast charging
- PAC-RIM – Emerging Market with most opportunity

Airports – Commitment Alternative Fuel

- SFO
- LAX
- PHX
- LAS
- JFK
- BOS



PLUG N PLAY
Choose Your
Energy Source



Obstacles

- Infrastructure Costs
 - Still Requires Upfront Costs
- Unfamiliar Technology – Acceptance

Advantages

- Virtually any type Electric Vehicle can use Hydrogen
 - Proven Technology – Well Accepted
 - Easier to Maintain, Easier to Troubleshoot, Clean
 - TCO is Highly Advantageous
- Faster Energy Replacement
 - Electric Power Limited by Recharge Times
- New Personnel – Open to Change/Adopting New Technology
 - Younger Generation Embracing Alternative Fuels



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Questions?