

NTEA COMMERCIAL VEHICLE UPFITTING SUMMIT

Next-Gen Hydraulics

Quieter, More Efficient Solutions for Upfitters

Introduction

Who am I and who is Bucher Hydraulics?

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Speaker – David Stevenson

Bucher Hydraulics

- 18 Years at Bucher Hydraulics
- Global Product Manager – Hydraulic Power Units

Education

- BBA, Business Management and Marketing, Grand Valley State University
- MBA, Davenport University

Expertise

- Self-contained mobile hydraulic systems

Motivation

- My 2 children



Bucher Hydraulics

Who are we?

- A leading manufacturer of state-of-the-art hydraulic solutions
- ~3000 employees
- Over a dozen production sites globally

Markets

- Work trucks, agriculture, materials handling, construction

Products

- Fluid pumps & motors, valves, HIC solutions, cylinders, power units, mobile drives systems



Upfitting for the Future

What you upfit today, defines how fleets perform tomorrow...

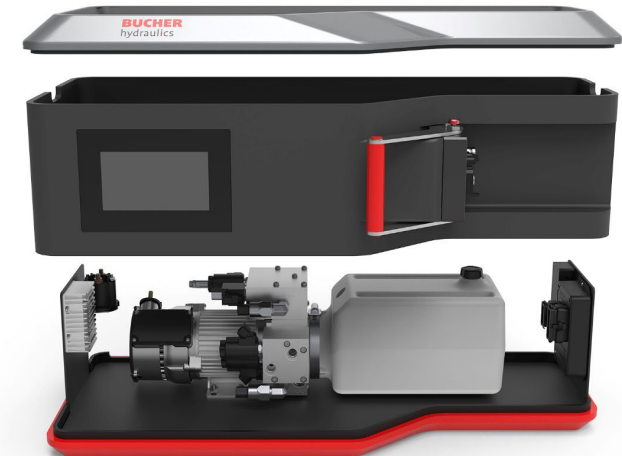
Market Drivers for Upfitters

- System uptime
- Noise regulations
- Operator comfort & functionality
- Efficiency & sustainability
- Customer expectations
- Technology adoption

System Uptime

What to expect in coming years:

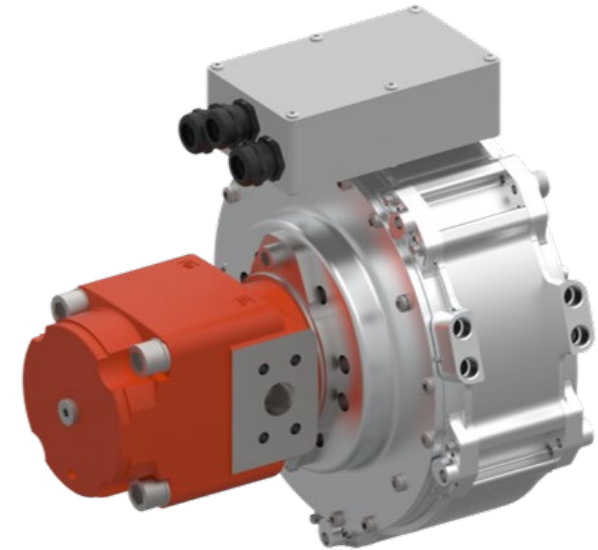
- Predictive maintenance
 - More sensors (vibration, temperature, flow...etc.)
 - IoT integration
 - CANbus communication
- Improved runtime for battery-powered systems
 - New pump, motor and valve technologies are allowing for reduced battery consumption
 - Energy recouperation will be integrated into many applications to recapture power.



Noise Regulations

What to expect in coming years:

- Much quieter hydraulic systems
 - Improved product designs that reduce driveline noise
 - Improved controllability of motor/pump RPM and valve function to reduce hydraulic system noise output
- Increased functionality to reduce noise
 - Examples: Soft-close tailgates, ramp up/down of truck mounted cranes...etc.
- Power on demand with variable output
- Diesel-driven PTO systems replaced with ePTOs



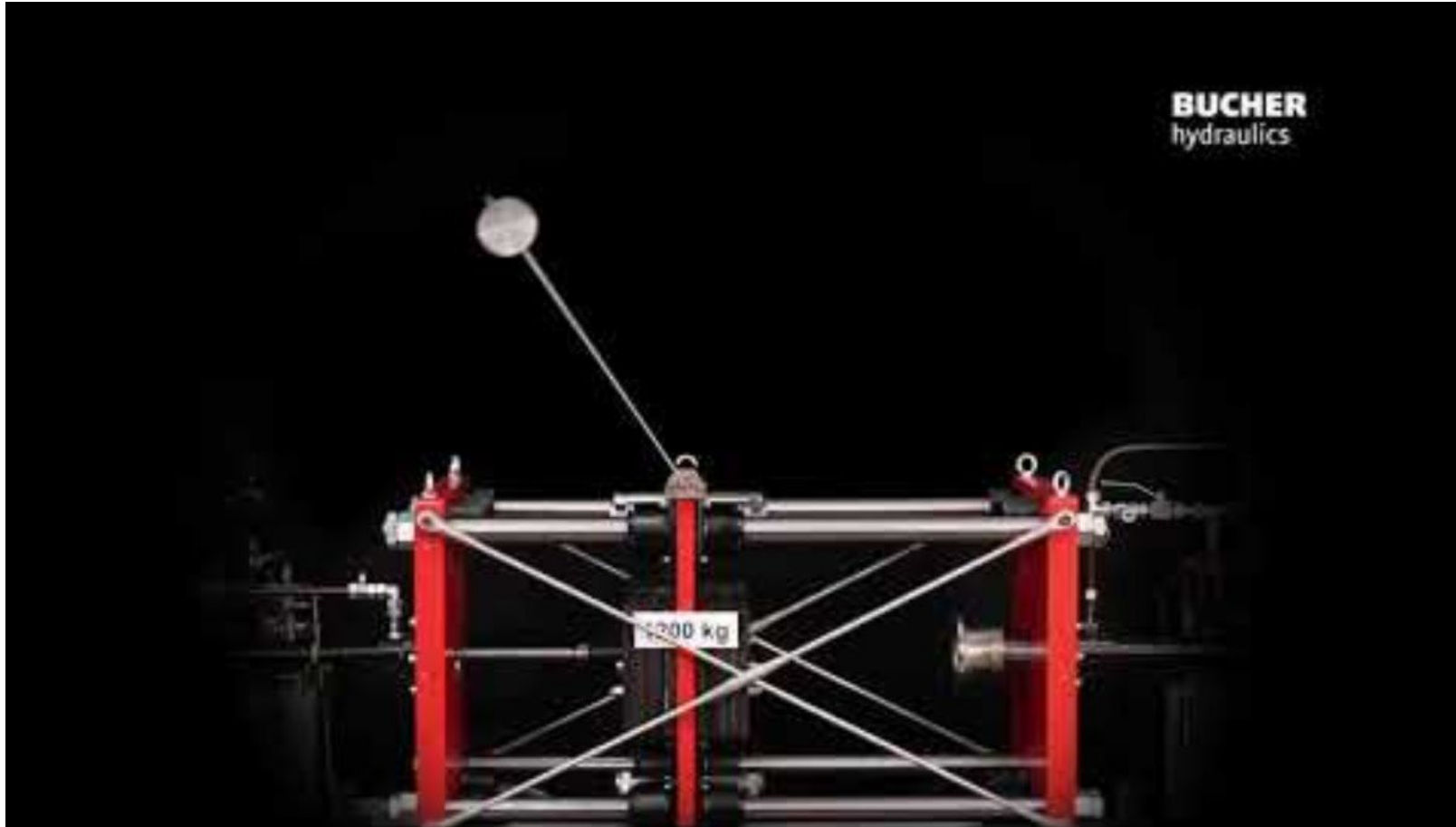
Operator Comfort

What to expect in coming years:

- Improved control options
 - CANbus, wireless, bluetooth, Zigbee technology allows for:
 - Increased wireless options (tablet, belly pack, phone, joystick...etc.)
 - Real-time feedback to user
- Precision movements
 - Improved motor technologies
 - Improved valve options
 - Fast and accurate sensor feedback
 - Ability to add functions through software
 - Vibrate function to dump body
 - Soft-close profile to a liftgate
 - Return to position on a crane



Control and Functionality

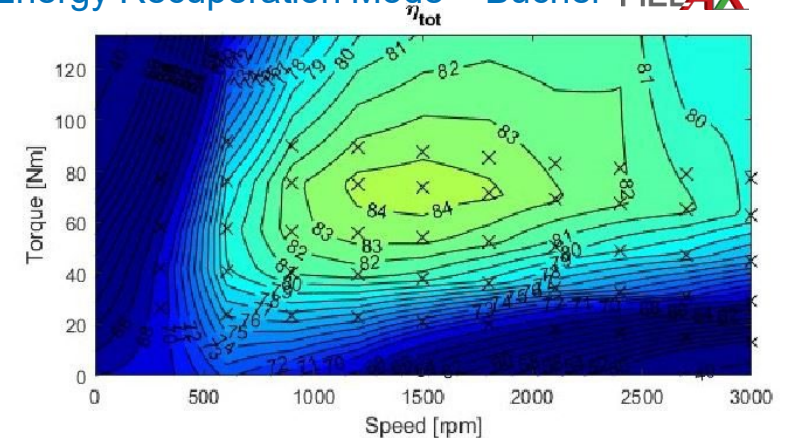


Efficiency and Sustainability

What to expect in coming years:

- Reduction in carbon output through
 - Regenerative hydraulics
 - Load-sensing and electronically controlled valves
 - Transition to battery powered systems in traditional PTO applications
 - Higher levels of overall hydraulic and mechanical efficiencies
- Higher voltage systems from OEMs and associated hydraulic systems
 - Smaller conductors
 - Higher efficiency electric motors

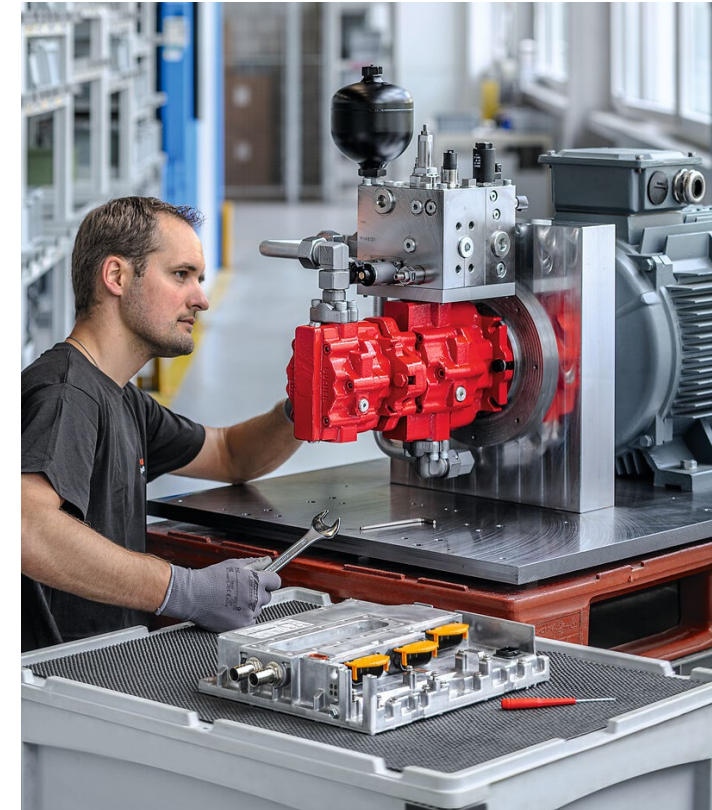
Energy Recuperation Mode – Bucher HELIX



Technology Adoption

What to expect in coming years:

- Electrified & hybrid work vehicles (green fleets)
 - As more vehicles become electrified, hydraulic efficiencies and noise emissions became integral.
- Telematics integrated into all major systems
 - Improving fleet management (uptime, lost trucks, maintenance & diagnostics...etc.)
- Intelligent controls
 - Systems will be simplified for the user with far more control and system information available.



What This Means for Upfitters

How do these changes impact my business?

New Products & Opportunities!

- Upfitters offering green fleet options can gain a premium
 - NTEA Green Truck Association is a great place to connect, learn and promote your green fleets.
- Increased access to specific local and regional markets with noise & or no-idle regulations (e.g. New York, Los Angeles, Chicago, Seattle...etc.)
- Use of telemetry and predictive maintenance can improve scheduling of service before a truck is down. This allows upfitters with service centers to keep their customers running and better schedule technicians.



How to prepare?

- Training sales and applications team on the upcoming changes in technology
- Promote benefits to customers with a focus on those who may be impacted by regulations
- Provide market feedback to manufacturers (i.e. Snowplow, liftgate, crane, dump bodies...etc.)
- Leverage leading technologies to differentiate your products/services
- Engage with Green Truck Association through NTEA 😊



Questions?

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Thank you for your attention

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