EXOSKELETON / EXOSUIT TRIALS

ottobock.

3.5 Rating

Cost	Donning	Help	Comfort	Feedback
	★	★	½	★

Trialed at Norcross, GA

laevo exoskeletons

1.5 Rating

Cost	Donning	Help	Comfort	Feedback
★		½		

Trialed at Lanett, AL & Hendersonville, NC

VERVE MOTION

4 Rating

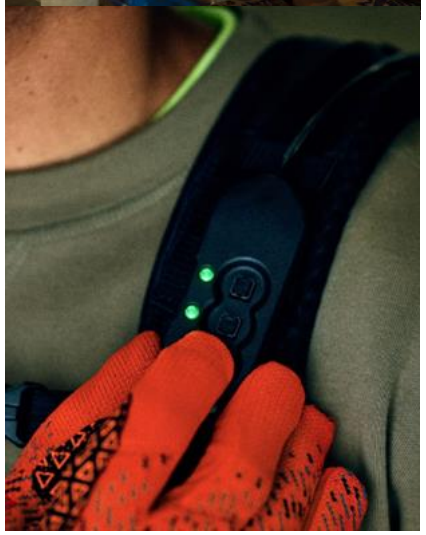
Cost	Donning	Help	Comfort	Feedback
½	½	★	★	★

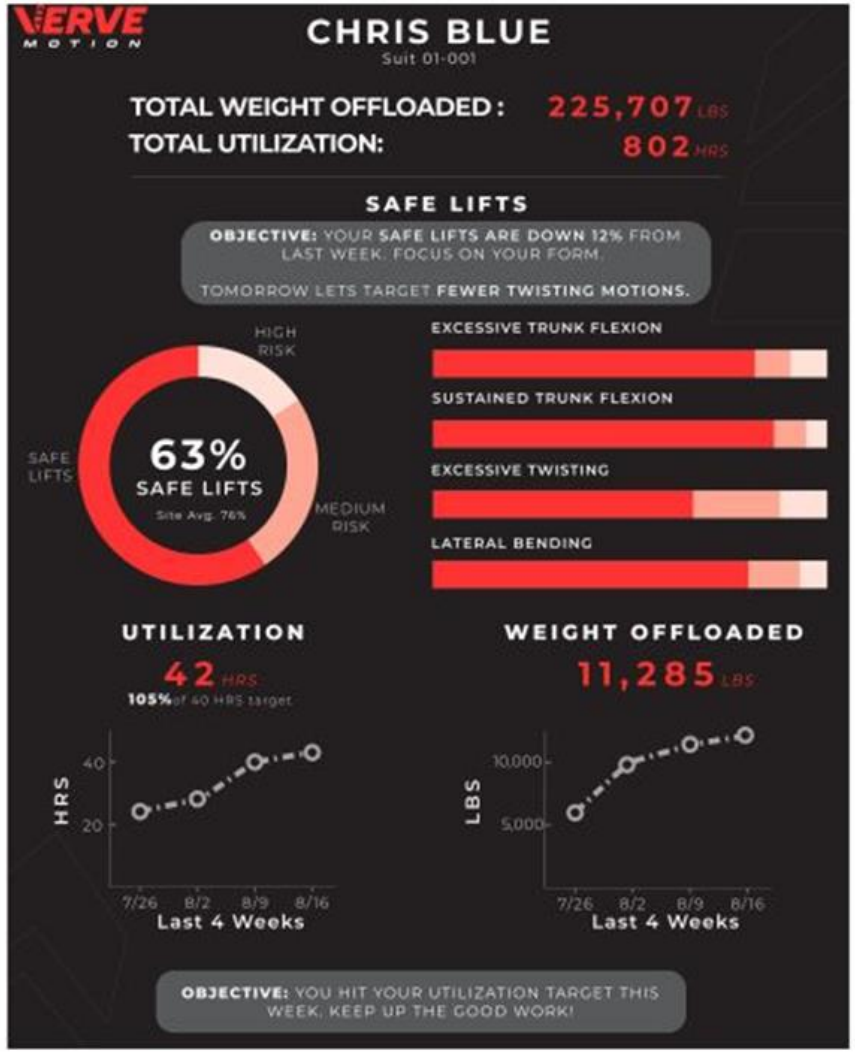
Trialed at Holland, MI

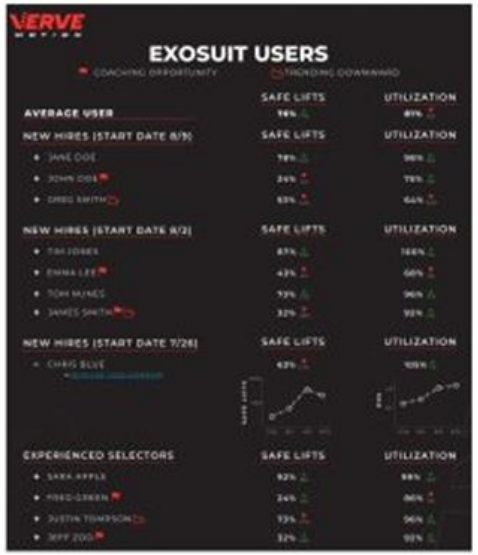
WestRock

EXOSKELETON TRIAL

Holland, MI Consumer Container, December 14, 2022







RITE-HITE®
ALWAYS LOOKING AHEAD

INTERACTIVE ENGINEERING

HIT-NOT®
PROXIMITY DETECTION

Dock / Warehouse Safety

PIT / Pedestrian Interface Protection

WestRock

OUR APPROACH PER EACH USE CASE

- Brainstorming options by category (research/site recommendations)
- Narrow options to evaluate product/vendor for overview (webinar/virtual)
- Narrow options for site proof of concept and trials on site (short day/two on site)
- Narrow options to one/two to pilot product (max of 90 days on site)
- Select an option to scale/deploy to higher risk sites (MSA agreement)

Critical to evaluate any legal risk/impact:

- Privacy Laws (California, Illinois, New York, Canada & other International)
- NLRA / Labor Considerations
- ADA / EEOC Laws/Impact
- OSHA / Exposure Data
- Workers Compensation Laws
- General Medical / HIPAA Laws

SET CLEAR GOALS…AND SET BOUNDARIES OF TARGETED USE

Goals / The Why!:

- Use technology to proactively keep teammates safe using leading data
- Use to support improvements on machines, workstations and controlling risk

Do's

- ☑ Proper use case and deployment guidelines are reviewed by site prior to use
- ☑ Use of wearables to collect body mechanics and work area data will be voluntary
- ☑ Teammates will sign an authorization of voluntary participation to use wearables
- ☑ Share data collected with volunteering teammates
- ☑ Prior to any site rollout, sites will meet with teammates to discuss use cases
- ☑ Set data retention timelines and/or anonymize data whenever possible

Don'ts

- ☒ Will not use wearable data to discipline teammates
- ☒ Will not use data to rank teammates or use in any way related to performance
- ☒ Will not use to incentivize or monetarily recognize teammates
- ☒ Devices will not track employees visa via GPS or areas outside of workstation
- ☒ Will not collect certain biometric data (body temp, heartbeat, fingerprints)

Artificial Intelligence / Learning via Cameras for Safety

This pilot was conducted to understand the technology, how it works, costs, time allocation, issues to ultimately understand possible further expansion

Artificial Intelligence and Safety – General Background

- Tested at a single South American Operation
- Technology Tested – **SparkCognition software** using existing inhouse security camaras
- Areas Tested – PPE (eye and hearing protection), Pedestrian & Forklift interactions, Pedestrian Pathway compliance
- Cost - ~15K for software, cost of any additional camaras added to coverage, site personal time
- Personal Identification – In the testing, all faces were blurred so individual colleagues were not recognizable

What Did We Find?

What did we learn?	How do we know?
Technology works, but may require changes for certain use cases	Technology worked very well for pedestrian pathways and pedestrian/forklift interactions. Was not generally successful for PPE because it had a difficult time seeing smaller objects, like clear eyeglasses and inserted HP. If we wanted to do something like machine guarding, LOTO, or other operational checks, would need to get cameras closer to the action so everything is clearly visible.
Technology was fast to setup	Site spent less than 18 hours on use case development and setup time before data was able to be gathered. Note that a security system already existed.
Server space and technical hurdles were pretty low	Application worked locally and then processed and sent data to the cloud. No space limitations to worry about. No images are stored in the cloud.
The mobile app was effective at communicating real-time data based on the alerts you wanted to know about	Customizable and easy-to-use app to allow for real-time response to items, as necessary (learning) and addressing alerts

What Did We Find cont.?

The technology really is learning and getting better with the more time spent 'teaching'	Were able to go in and review alerts and then correct the program so it learns which alerts we want and don't want. For instance, a person pushing a trash can triggered an alert as a forklift and pedestrian interaction – site was able to go in and select the 'not valid' option so it wouldn't trigger as an alert again. In order to get the most possible value out of the system, one needs to make sure you are spending adequate time reviewing alerts and teach.
Potential value seems limitless right now	We can track basically anything we want, which is both a little scary and shows that technology is taking a huge leap forward in capability if smart about deployment. Results from the use cases we tested were collected in only one month: • PPE – 149 alerts • Forklift & Pedestrian Interaction – 49 Alerts • Pedestrian Pathway Compliance – 12,346 Alerts
Technology general thoughts, concerns, hurdles	Saw immediate value in the technology and thought of numerous use cases they wanted to try. Area of concern is acceptance with unions and issues based on site cultures. Operations has a lot of interest.

THANK YOU

QUESTIONS?