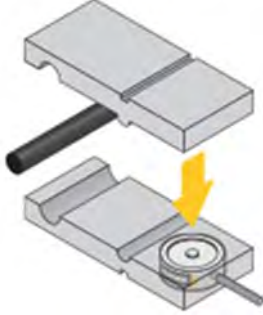



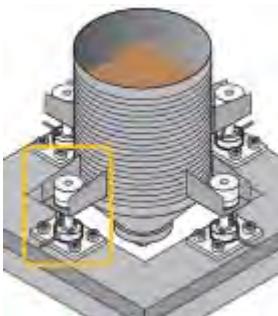
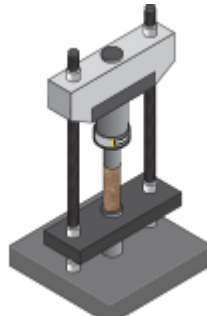


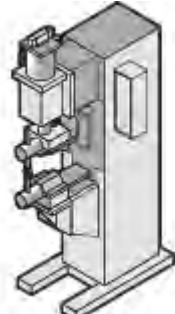




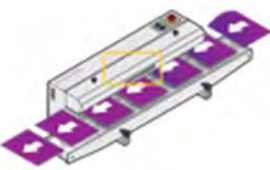

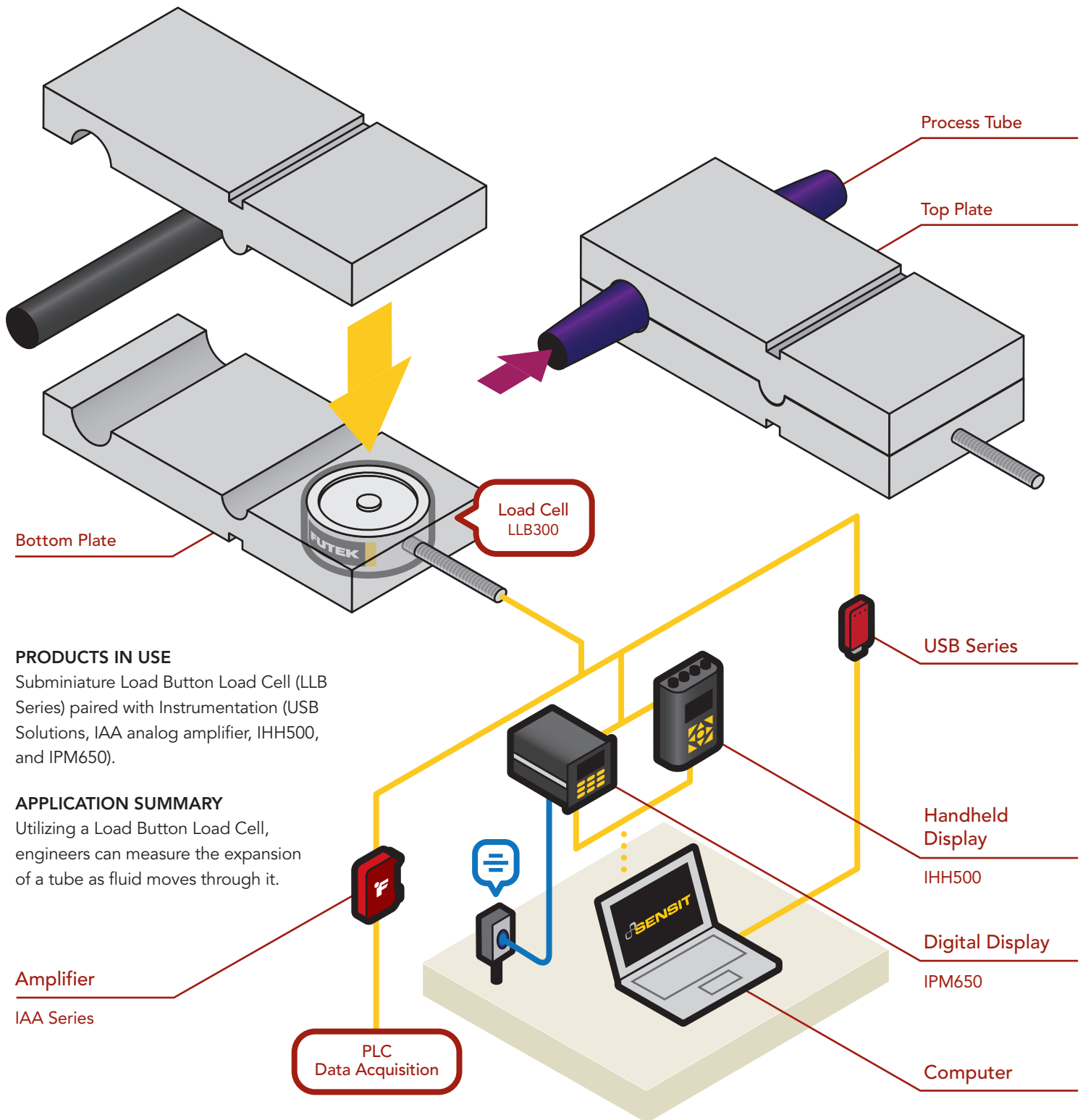


## Celle estensimetriche a bottone

Una linea prevalentemente miniatura di celle di carico, adatte per test ad alta resistenza. Dalla ricerca medica alle applicazioni di produzione industriale, versatili nel loro utilizzo.

Tube Expansion Measurement (Application 110)	Automotive Pedal Force Testing (Application 115)	Robotic Tactile Sensing (Application 117)
		
Snow Shoe Testing (Application 118)	Batch Weighing (Application 119)	Material Force Testing (Application 120)
		
Bite Force Measurement Study (Application 121)	Vampire Bite Force (Application 127)	Resistance Welding (Application 141)
		

Power Window Pinch Test (Application 146)	TAVR Durability Testing (Application 148)	Spring Testing System (Application 149)
		
Automotive Seat Testing (Application 152)	Bag Sealer Validation (Application 158)	Package Drop Test (Application 162)
		



## PRODUCTS IN USE

Subminiature Load Button Load Cell (LLB Series) paired with Instrumentation (USB Solutions, IAA analog amplifier, IHH500, and IPM650).

## APPLICATION SUMMARY

Utilizing a Load Button Load Cell, engineers can measure the expansion of a tube as fluid moves through it.

## Sensor Solution Source

Load · Torque · Pressure · Multi Axis · Calibration · Instruments · Software

[www.futek.com](http://www.futek.com)

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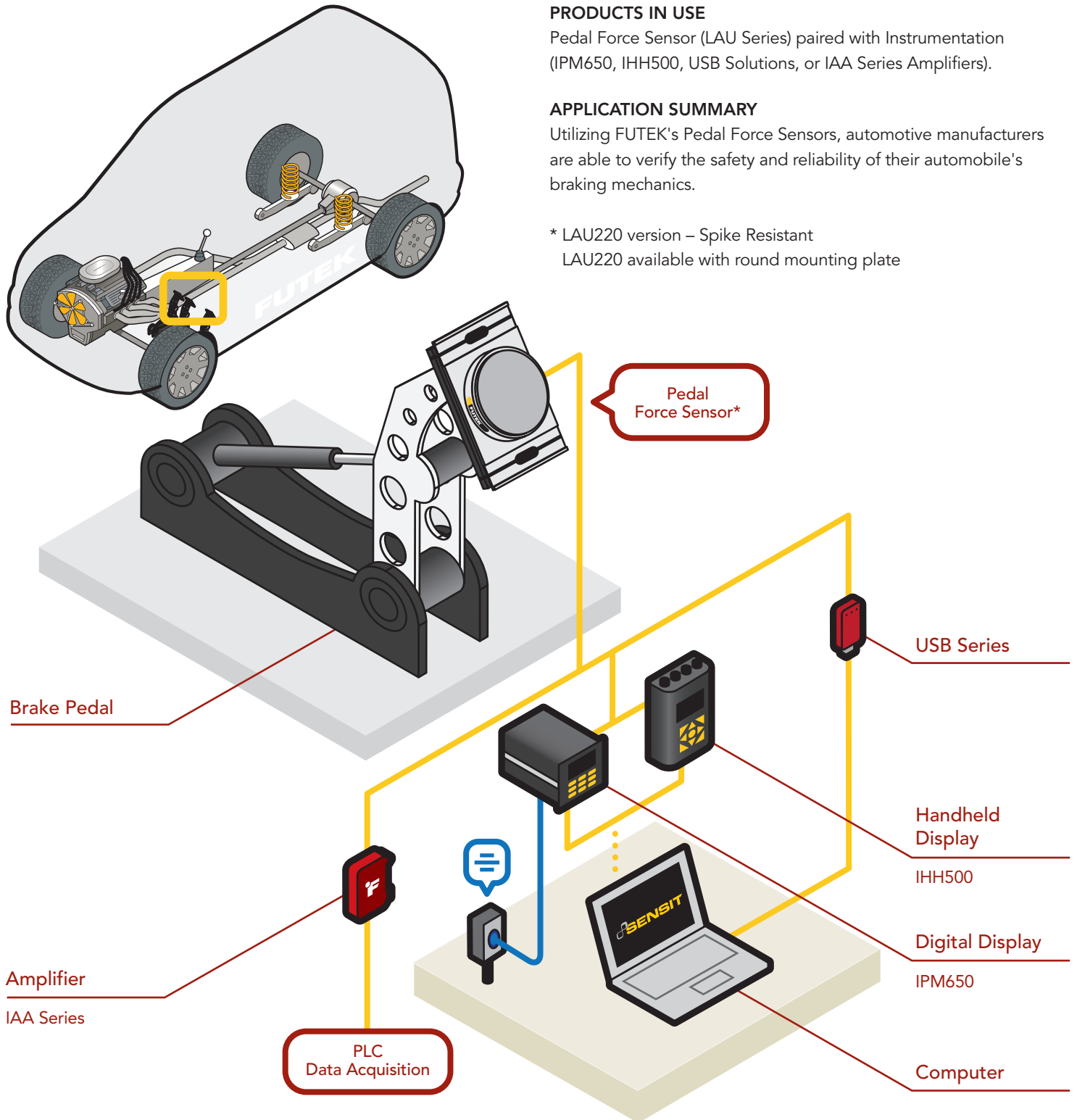
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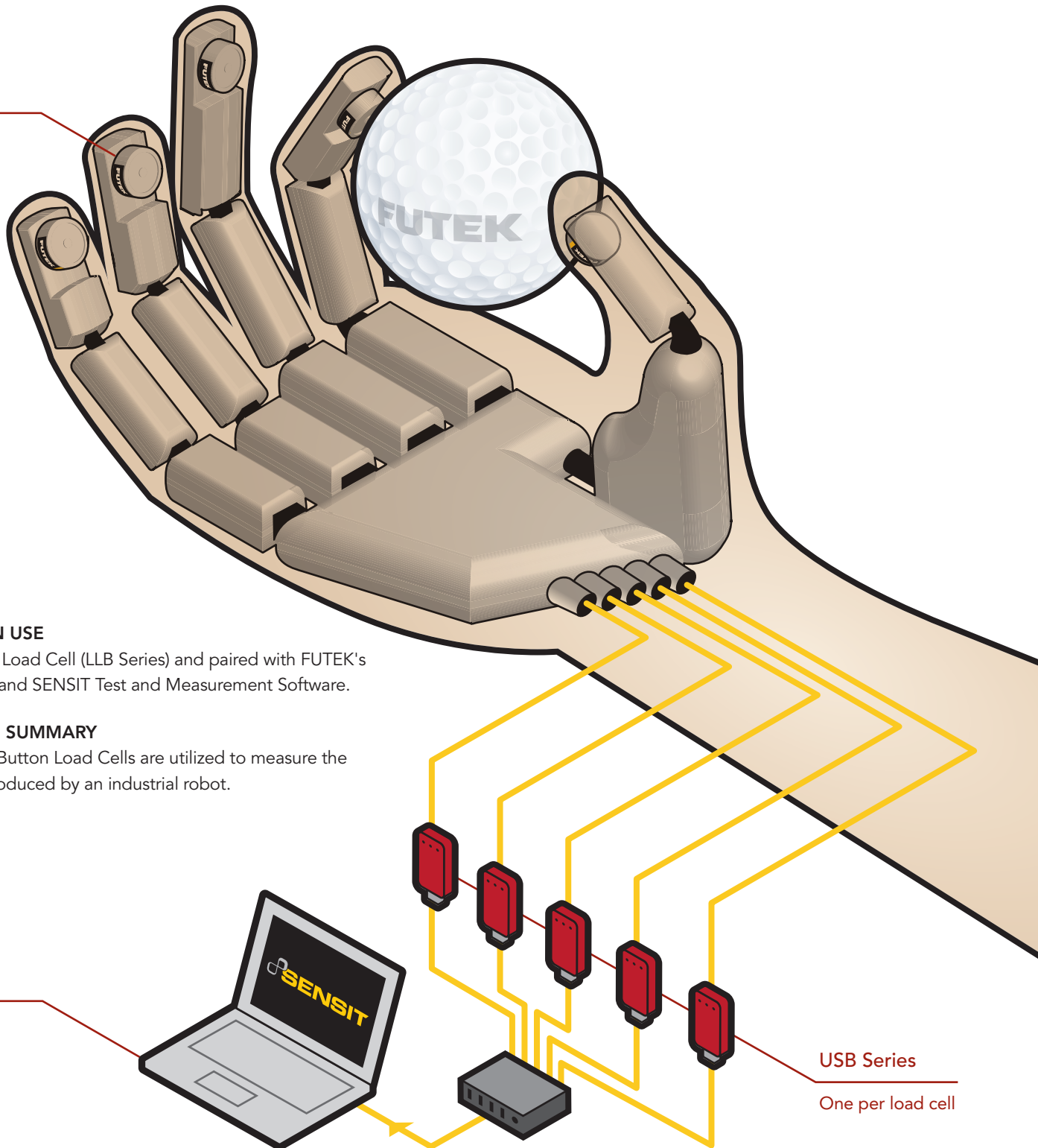
U.S. Manufacturer







Load Cell  
LLB Series

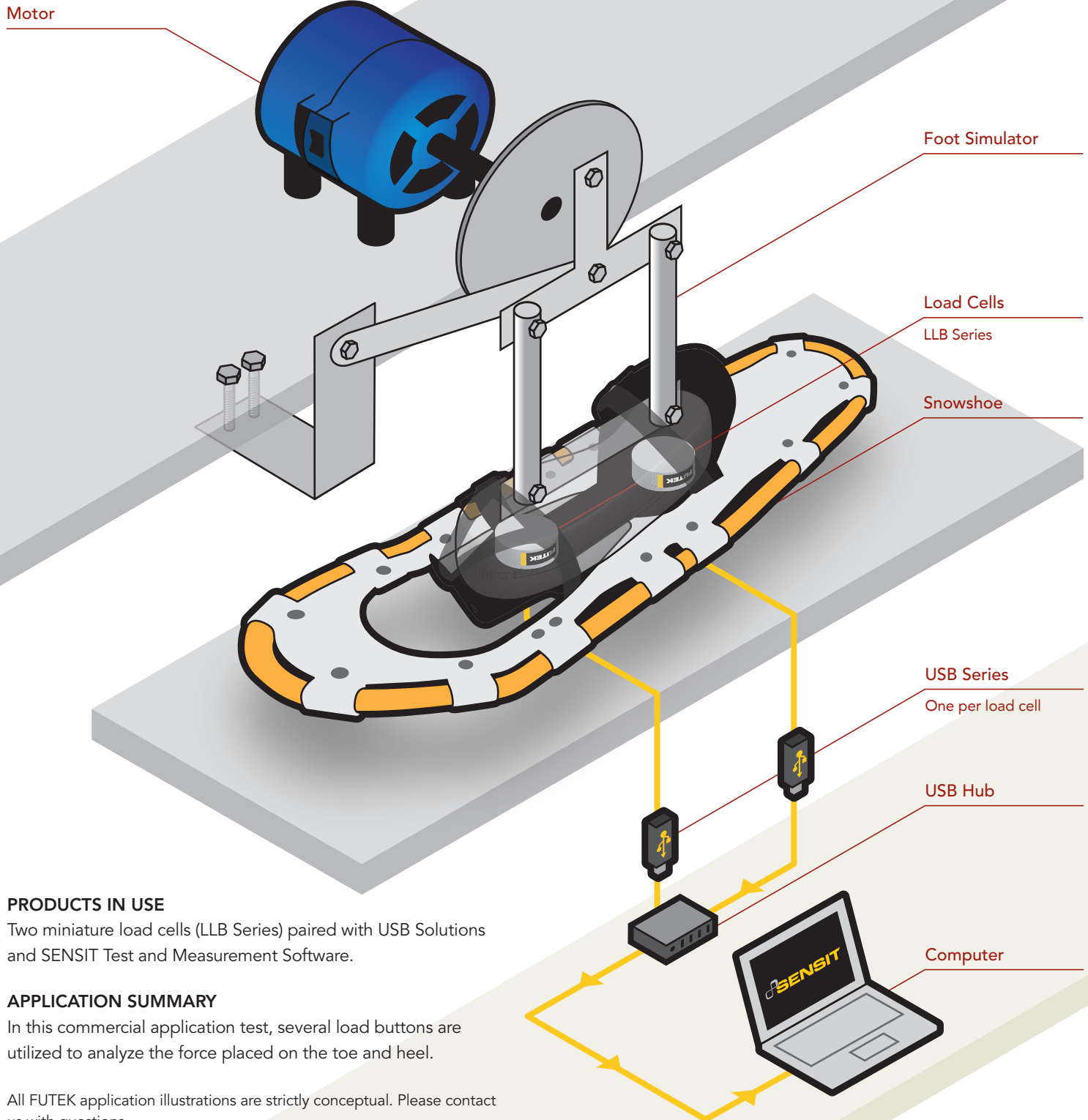


#### PRODUCTS IN USE

A Load Button Load Cell (LLB Series) and paired with FUTEK's USB Solutions and SENSIT Test and Measurement Software.

#### APPLICATION SUMMARY

Multiple Load Button Load Cells are utilized to measure the tactile force produced by an industrial robot.



## PRODUCTS IN USE

Two miniature load cells (LLB Series) paired with USB Solutions and SENSIT Test and Measurement Software.

## APPLICATION SUMMARY

In this commercial application test, several load buttons are utilized to analyze the force placed on the toe and heel.

All FUTEK application illustrations are strictly conceptual. Please contact us with questions.

## Sensor Solution Source

Load · Torque · Pressure · Multi Axis · Calibration · Instruments · Software

[www.futek.com](http://www.futek.com)

AP1025





Outside Structure

Batching  
Container

## PRODUCTS IN USE

One load cell (LLB Series) used per each supporting joint paired with Instrumentation (USB Solutions, IAA analog amplifier, IHH500, and IPM650).

## APPLICATION SUMMARY

Known for their endurance testing capabilities, FUTEK's Load Button Series can be utilized in manufacturing batch weighing applications.

Amplifier

IAA Series

PLC  
Data Acquisition

Load Cell  
LLB Series

Junction Box

IAC200

Digital Display

IHH500  
IPM650

USB Series

Computer

## Sensor Solution Source

Load · Torque · Pressure · Multi Axis · Calibration · Instruments · Software

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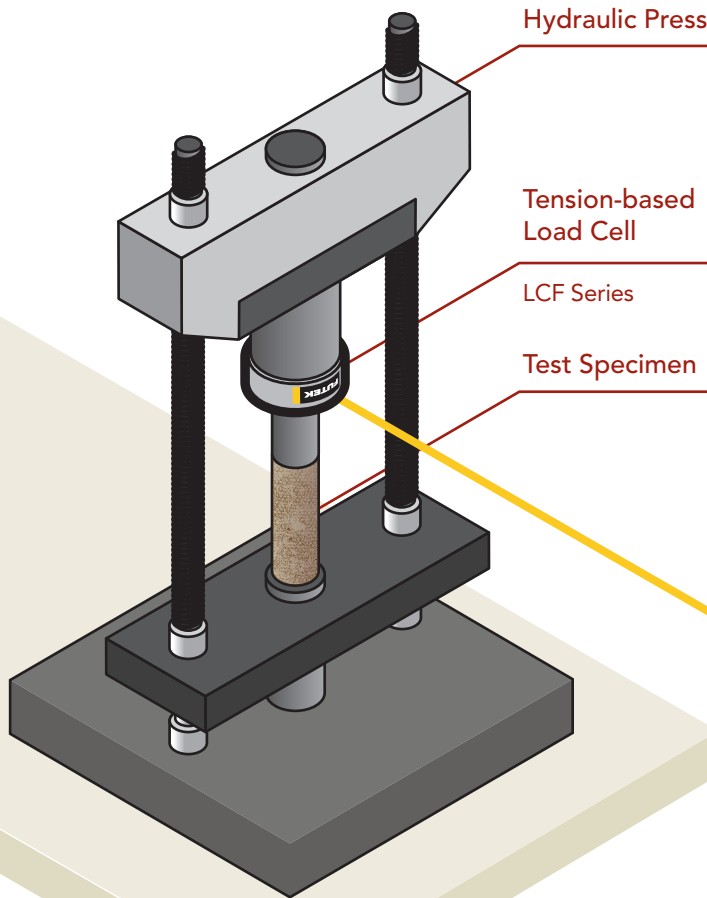
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U.S. Manufacturer



Hydraulic Press

Tension-based  
Load Cell

LCF Series

Test Specimen

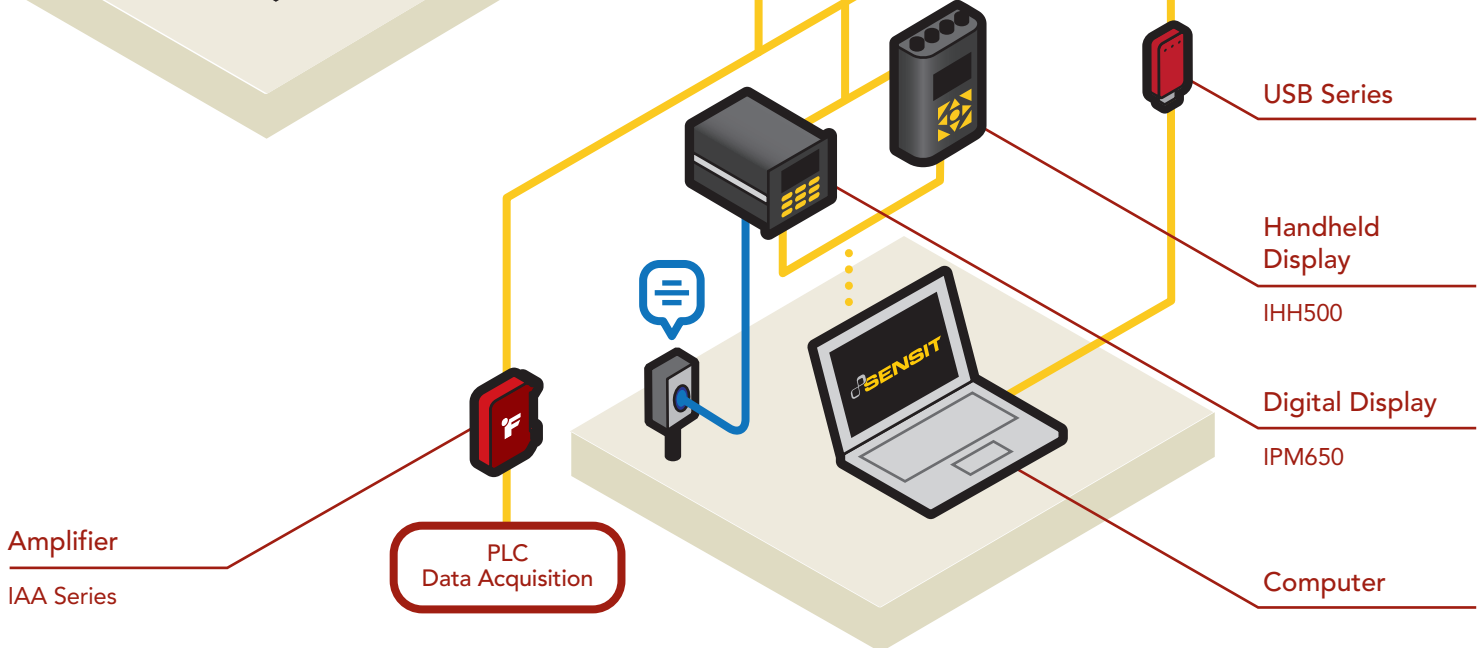
## PRODUCTS IN USE

A Pancake Load Cell (LCF Series) paired within Instrumentation (IAA analog amplifier, IPM650, IHH500, USB Solutions).

## APPLICATION SUMMARY

Utilizing a robust, high capacity load cell (LCF Series), industrial operators can measure the force applied to materials via a hydraulic press.

All FUTEK application illustrations are strictly conceptual. Please contact us with questions.



Amplifier  
IAA Series

PLC  
Data Acquisition

USB Series

Handheld  
Display

IHH500

Digital Display  
IPM650

Computer

## Sensor Solution Source

Load · Torque · Pressure · Multi Axis · Calibration · Instruments · Software

[www.futek.com](http://www.futek.com)

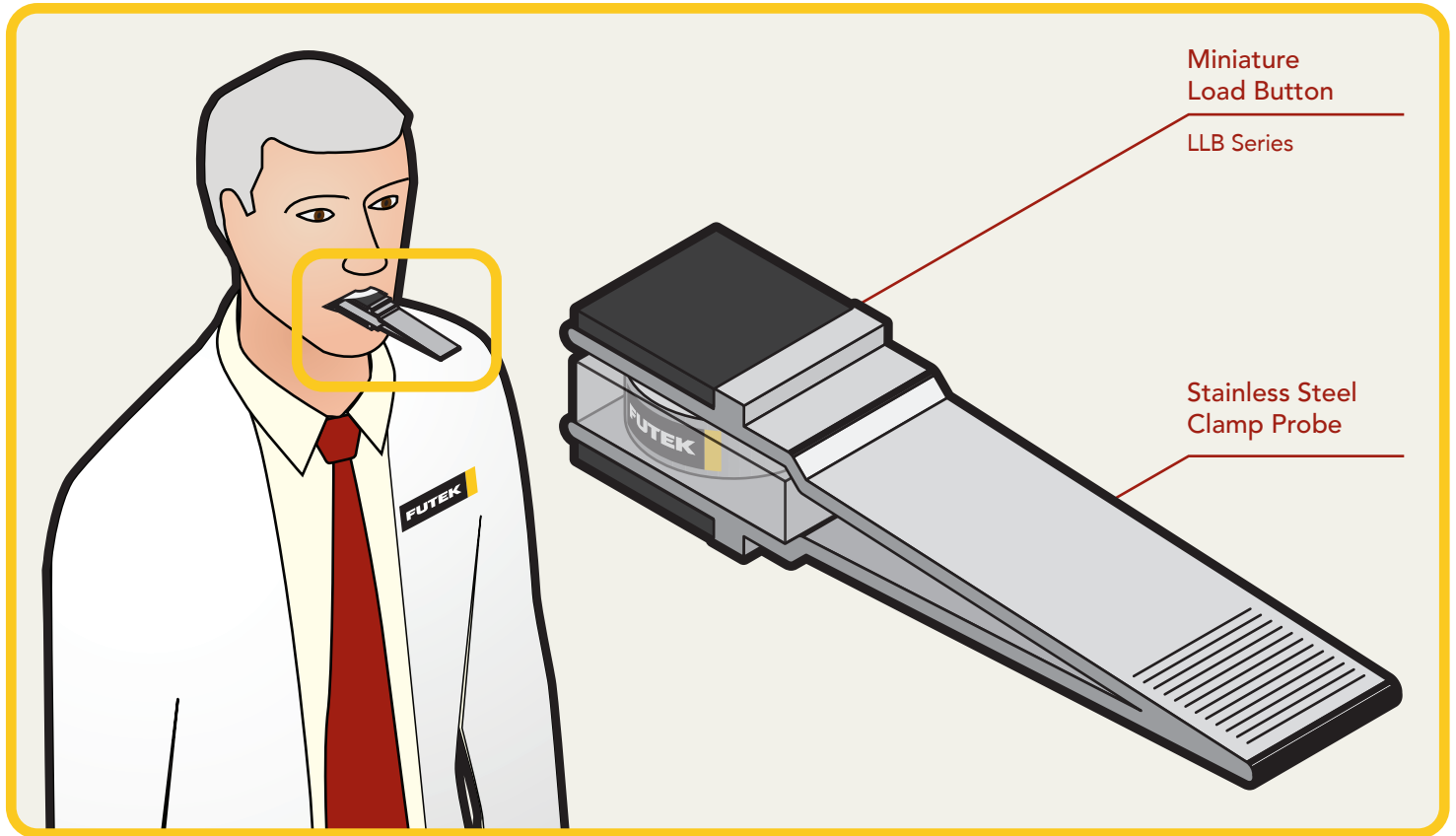
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U.S. Manufacturer



Miniature  
Load Button

LLB Series

Stainless Steel  
Clamp Probe

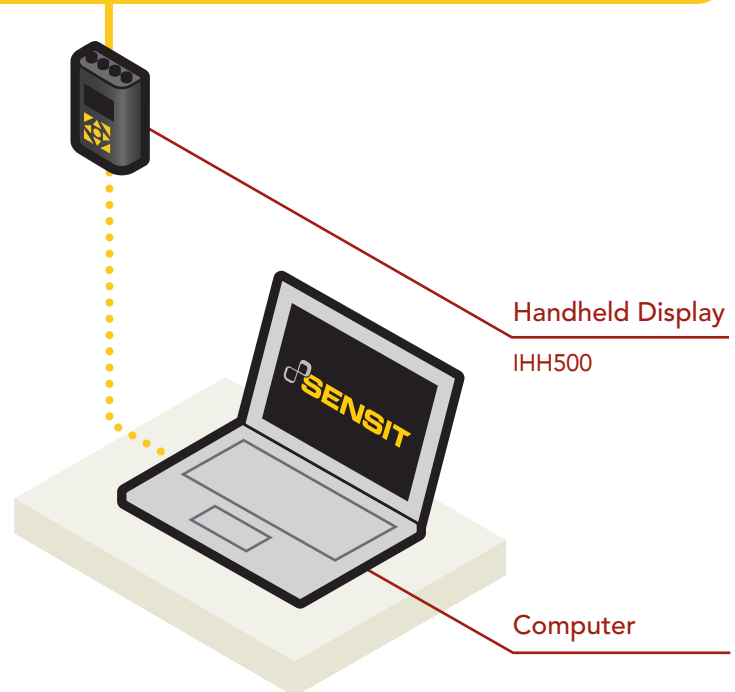
#### PRODUCTS IN USE

Miniature Load Button Load Cell (LLB Series) paired with FUTEK's Handheld Digital Display (IHH500).

#### APPLICATION SUMMARY

Miniature Load Button Load Cells have been utilized in medical research studies by the University of Amsterdam to measure the bite strength of dementia patients.

All FUTEK application illustrations are strictly conceptual. Please contact us with questions.



Handheld Display

IHH500

Computer

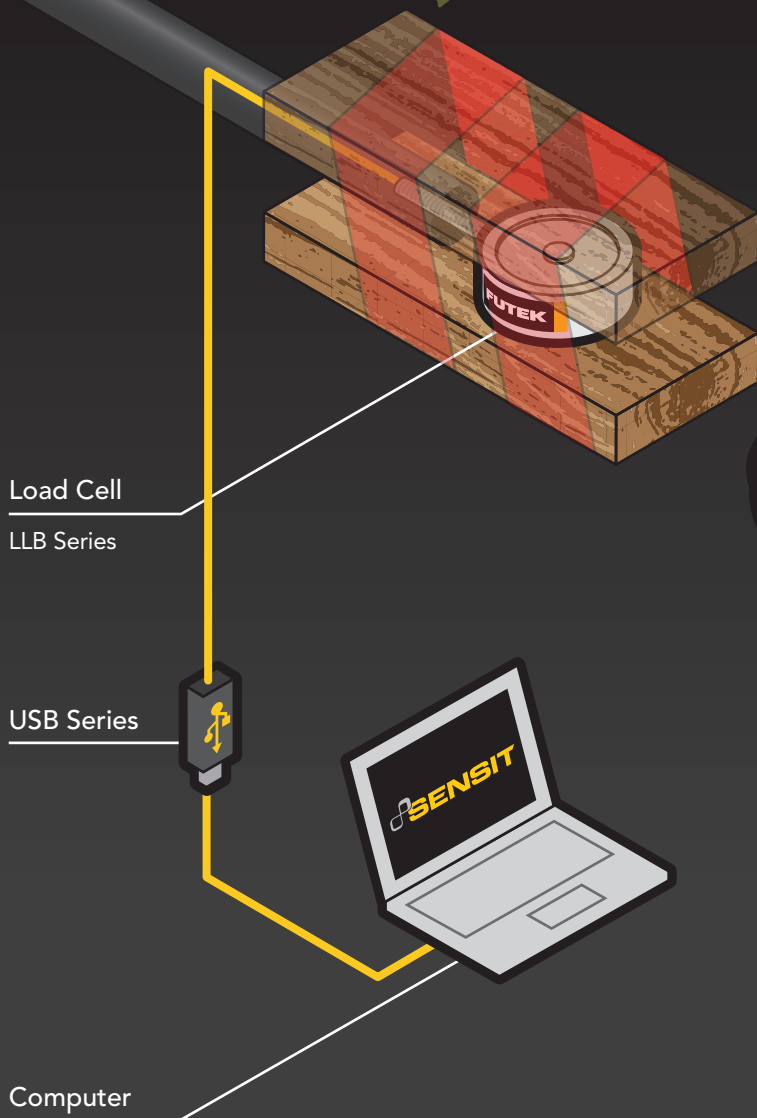
#### Sensor Solution Source

Load · Torque · Pressure · Multi Axis · Calibration · Instruments · Software

[www.futek.com](http://www.futek.com)

AP1028





#### PRODUCTS IN USE

Miniature Load Button Load Cell (LLB Family) paired with FUTEK's USB Solutions and SENSIT™ Test and Measurement Software.

#### APPLICATION SUMMARY

In an attempt to estimate the strength of a vampire's bite, Spike TV's *Deadliest Warrior* called upon the assistance of a four-legged friend: an alligator. Utilizing FUTEK's LLB Miniature Load Button Load Cell, the esteemed group of experts for DW were able to confirm a bite force of nearly 1,800 lb.

All FUTEK application illustrations are strictly conceptual. Please contact us with questions.

#### Sensor Solution Source

Load · Torque · Pressure · Multi Axis · Calibration · Instruments · Software

[www.futek.com](http://www.futek.com)

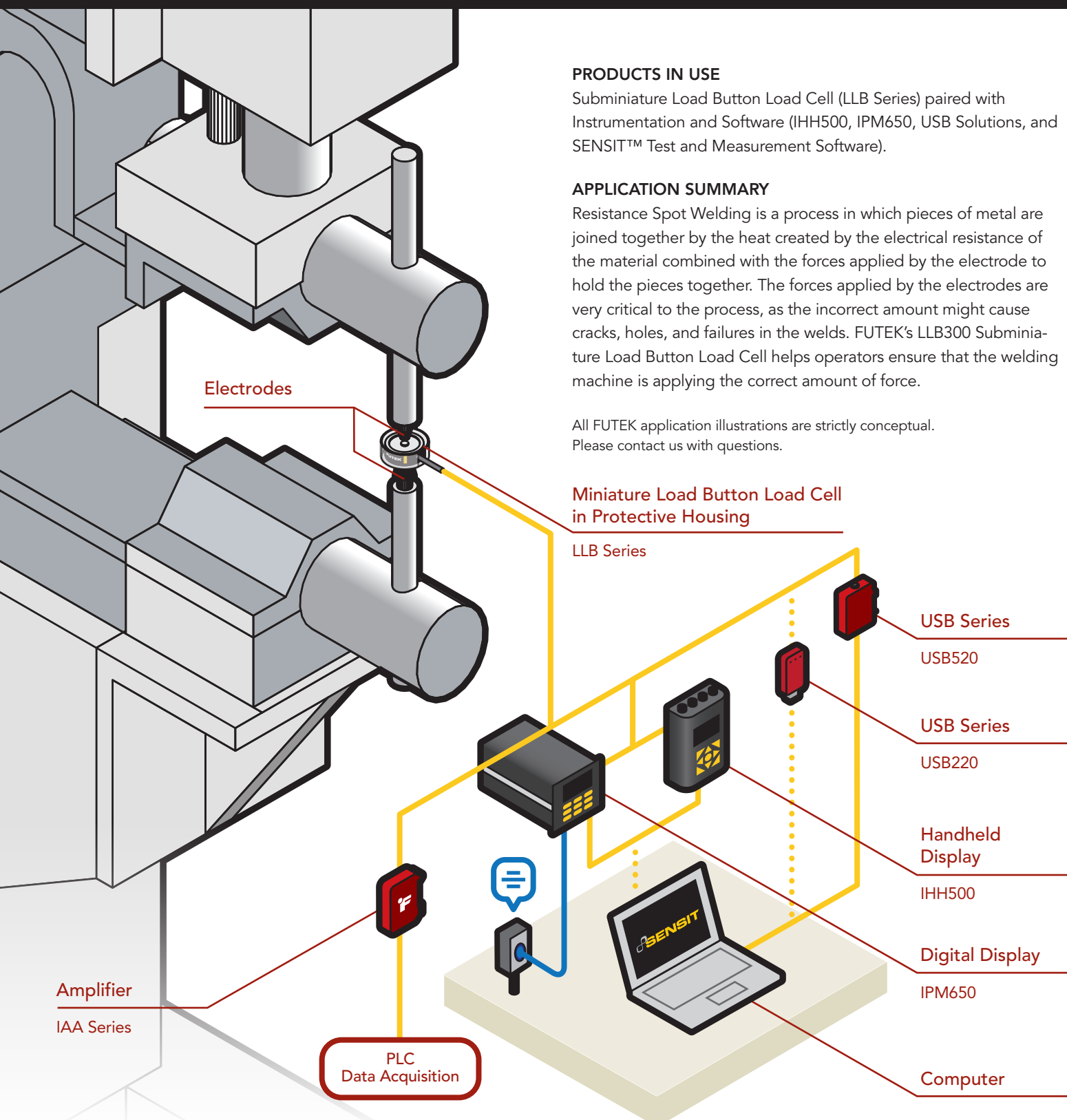


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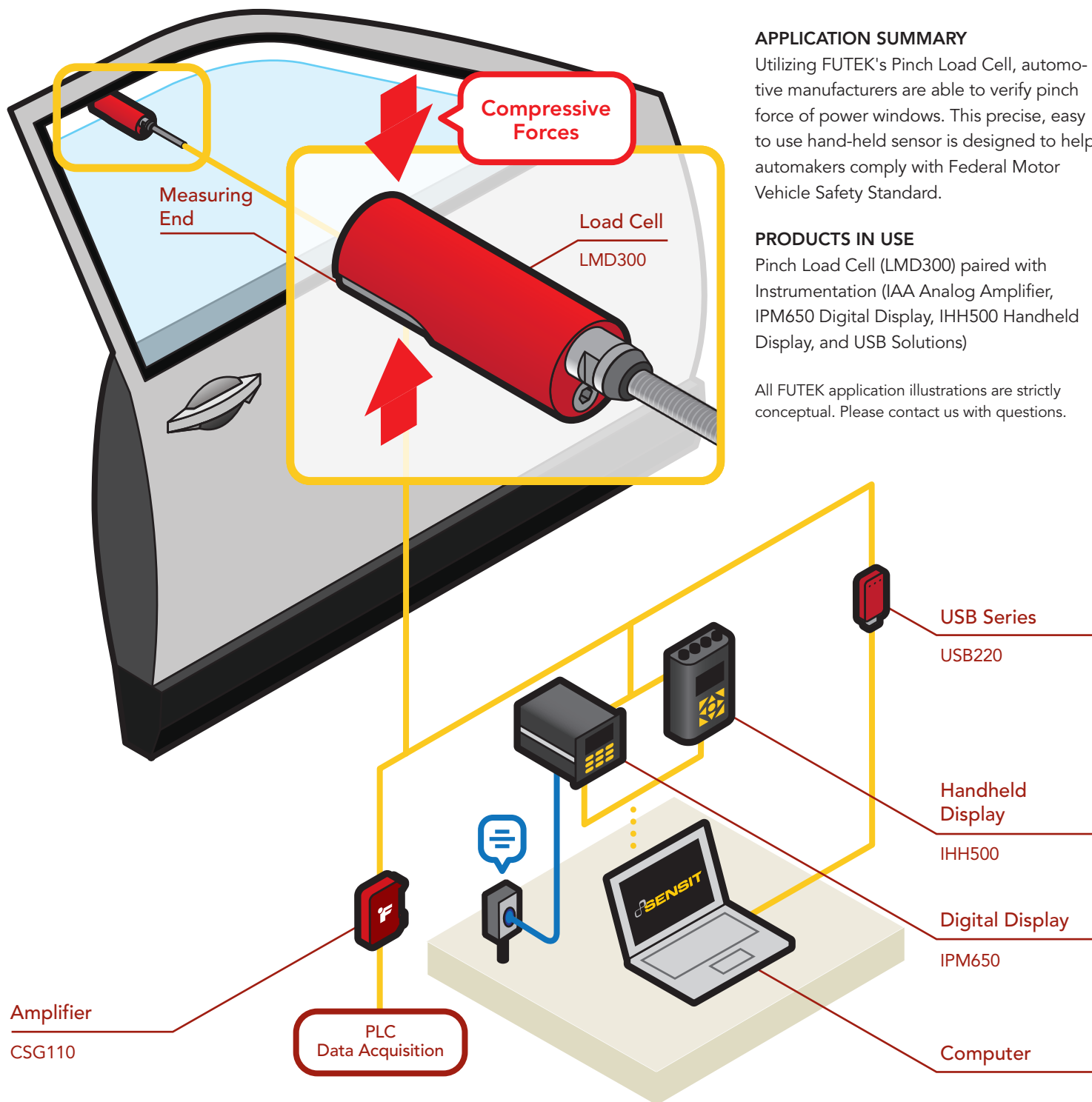
## PRODUCTS IN USE

Subminiature Load Button Load Cell (LLB Series) paired with Instrumentation and Software (IHH500, IPM650, USB Solutions, and SENSIT™ Test and Measurement Software).

## APPLICATION SUMMARY

Resistance Spot Welding is a process in which pieces of metal are joined together by the heat created by the electrical resistance of the material combined with the forces applied by the electrode to hold the pieces together. The forces applied by the electrodes are very critical to the process, as the incorrect amount might cause cracks, holes, and failures in the welds. FUTEK's LLB300 Subminiature Load Button Load Cell helps operators ensure that the welding machine is applying the correct amount of force.

All FUTEK application illustrations are strictly conceptual. Please contact us with questions.



## APPLICATION SUMMARY

Utilizing FUTEK's Pinch Load Cell, automotive manufacturers are able to verify pinch force of power windows. This precise, easy to use hand-held sensor is designed to help automakers comply with Federal Motor Vehicle Safety Standard.

## PRODUCTS IN USE

Pinch Load Cell (LMD300) paired with Instrumentation (IAA Analog Amplifier, IPM650 Digital Display, IHH500 Handheld Display, and USB Solutions)

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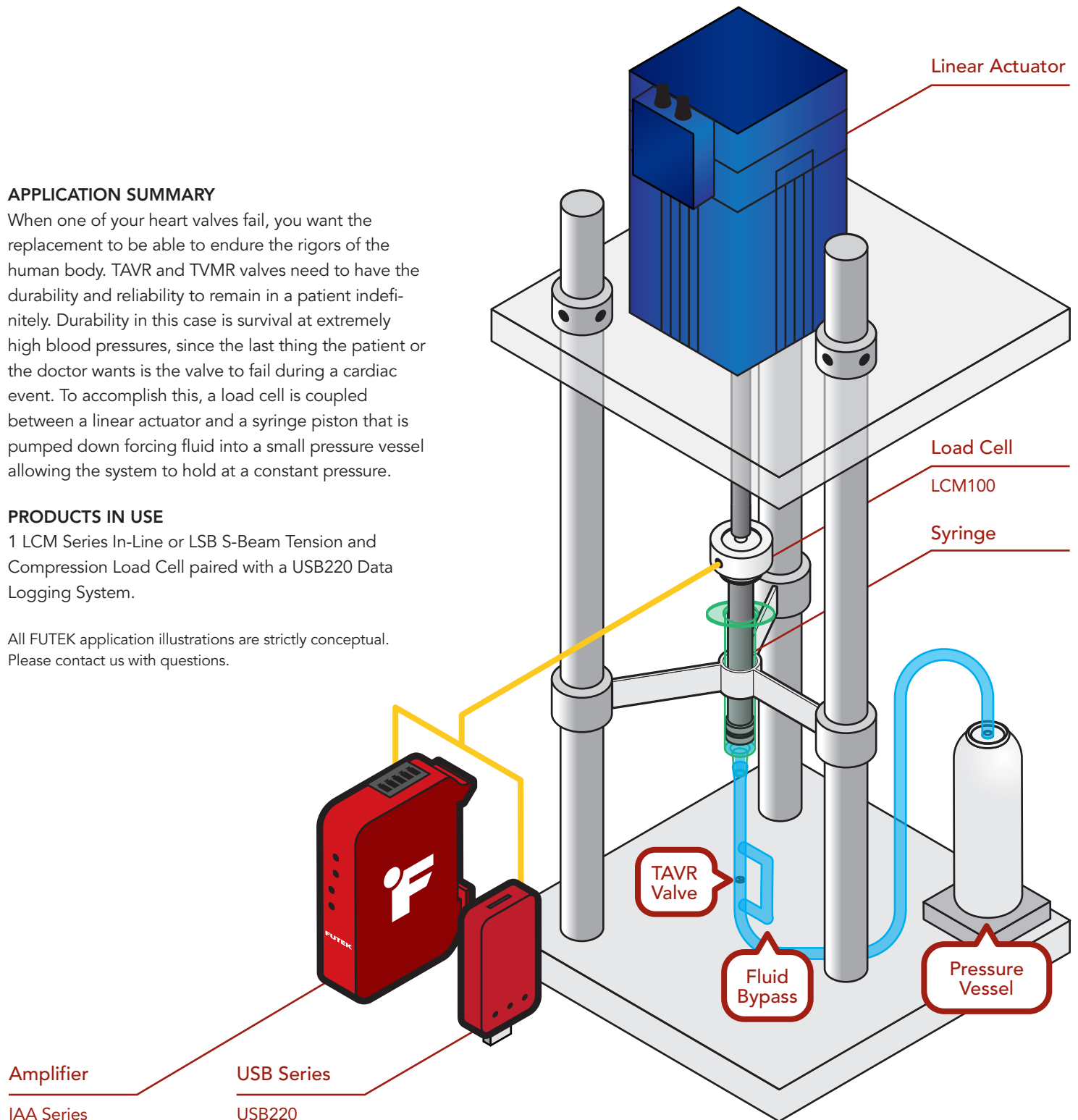
## APPLICATION SUMMARY

When one of your heart valves fail, you want the replacement to be able to endure the rigors of the human body. TAVR and TVMR valves need to have the durability and reliability to remain in a patient indefinitely. Durability in this case is survival at extremely high blood pressures, since the last thing the patient or the doctor wants is the valve to fail during a cardiac event. To accomplish this, a load cell is coupled between a linear actuator and a syringe piston that is pumped down forcing fluid into a small pressure vessel allowing the system to hold at a constant pressure.

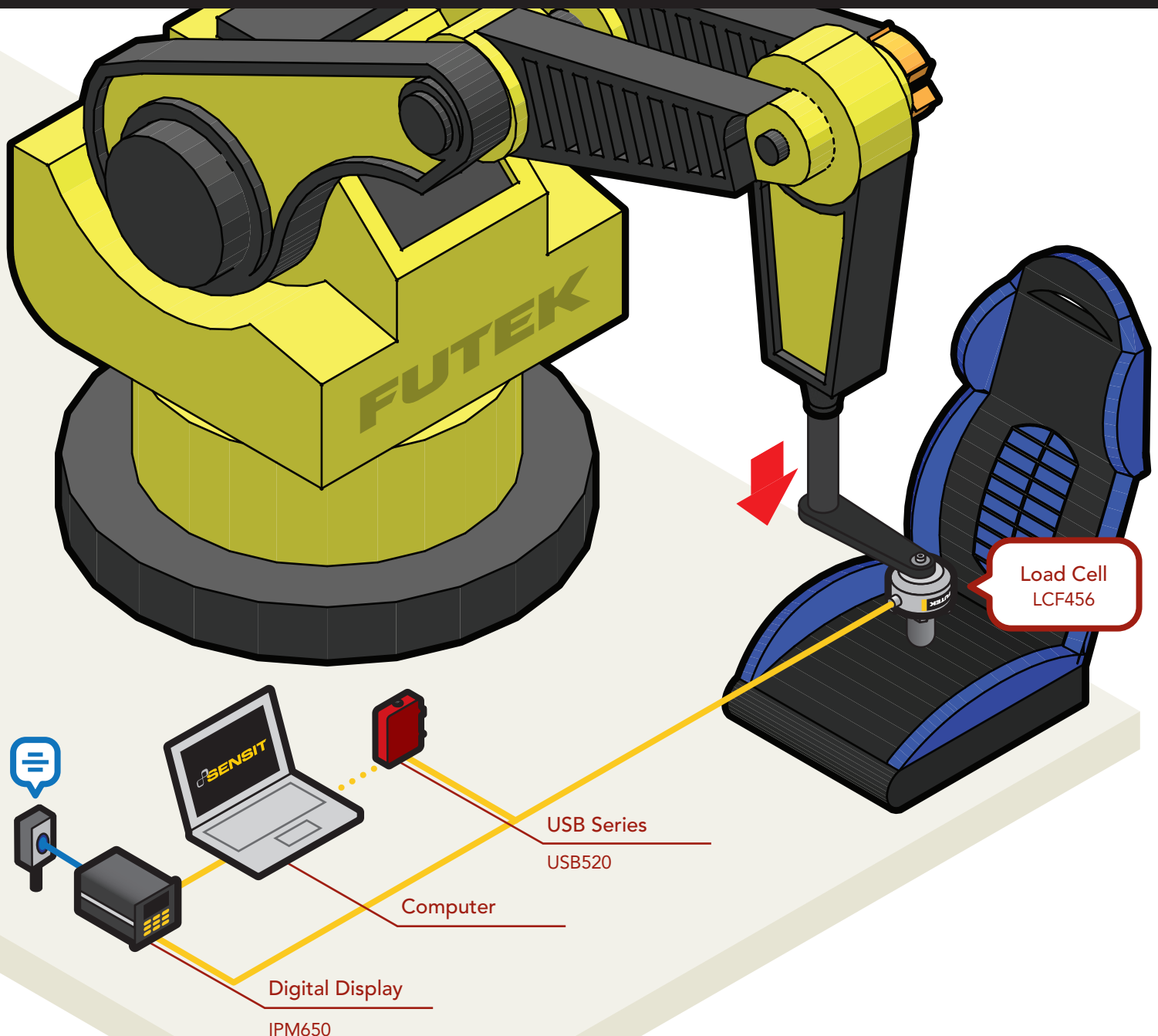
## PRODUCTS IN USE

1 LCM Series In-Line or LSB S-Beam Tension and Compression Load Cell paired with a USB220 Data Logging System.

All FUTEK application illustrations are strictly conceptual. Please contact us with questions.







## PRODUCTS IN USE

Pancake Load Cell (LCF456) paired with Instrumentation (USB Solutions or IPM650 Panel Mount).

All FUTEK application illustrations are strictly conceptual.  
Please contact us with questions.

## APPLICATION SUMMARY

In the automotive industry, robots are used to cycle test seats for wear and durability. Automakers research how people of all shapes and sizes affect the upholstery, seat cushions and seat structures over the life of the vehicle. FUTEK's Fatigue Rated Pancake Load Cell LCF456 is integrated into the custom testing robot to quantify data of the compression force placed onto a seat.

## Sensor Solution Source

Load · Torque · Pressure · Multi Axis · Calibration · Instruments · Software

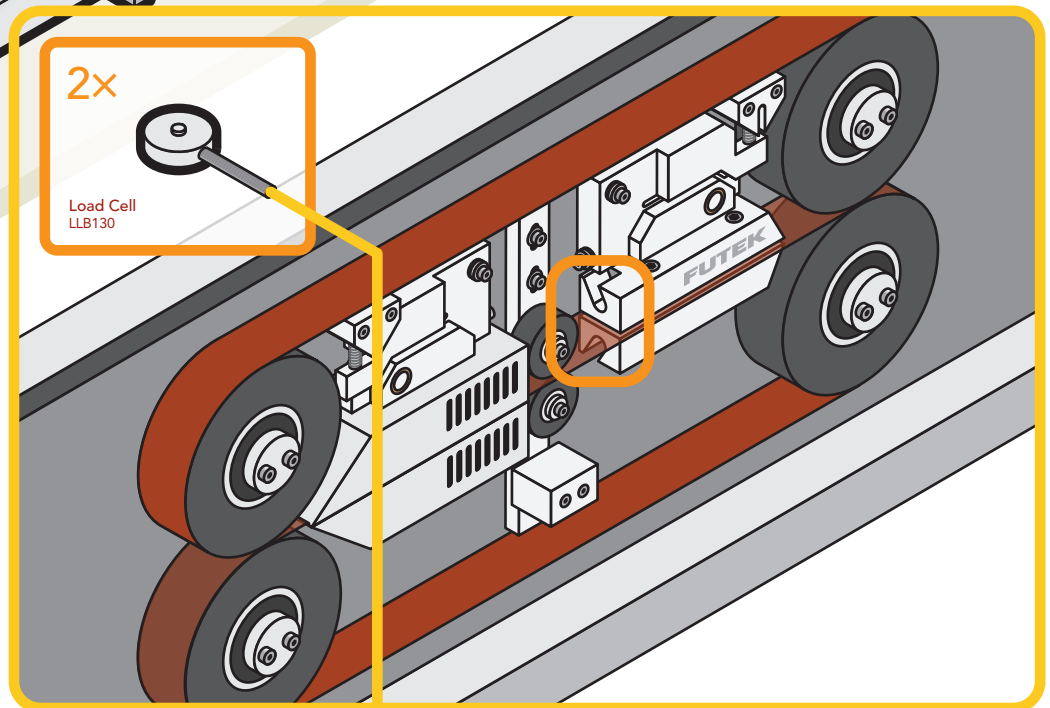
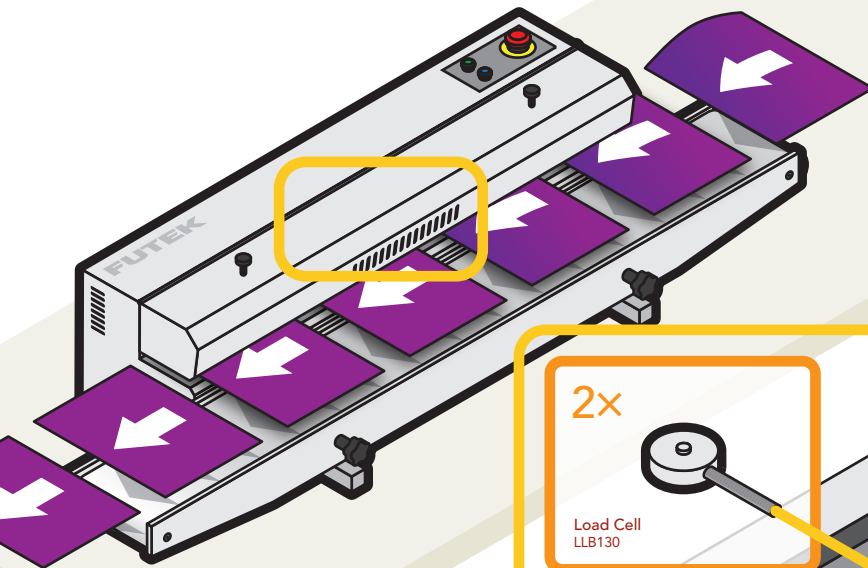
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## APPLICATION SUMMARY

For sterilized and other sealed packaging, leaks and partially broken seals are not always apparent. To mitigate this and ensure seal integrity, verification of the heat sealing force is critical, as over/under applied sealing force can cause premature failure of the seal. This application utilizes a pair of LLB130 load cells to monitor the force applied to the bag while the seal is made.

## PRODUCTS IN USE

FUTEK's Subminiature Button Load Cell (LLB Series) paired with instrumentation paired with the IAA series analog amplifier for feedback into a PLC.

All FUTEK application illustrations are strictly conceptual. Please contact us with questions.



Amplifier  
IAA Series

PLC  
Data Acquisition

## Sensor Solution Source

Load · Torque · Pressure · Multi Axis · Calibration · Instruments · Software

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Drop machine

Test object

Load Cell (4x)  
LCF Series

## APPLICATION SUMMARY

Drop testing packaging is a novel way of testing the viability of various packaging processes to ensure that packaged products arrive at their destination safely. To accomplish this, a system is designed to drop packages from varying heights onto a platform that rests upon load cells placed beneath the platform. The load cells output the force of the impact of the packaging. In addition, by making the platform removable, different platforms can be constructed to test different drops, such as dropping down stairs.

## PRODUCTS IN USE

4 FUTEK's Pancake Load Cells (LCF Series) coupled with 4 USB530 High Speed, USB Data Acquisition Kit.

All FUTEK application illustrations are strictly conceptual. Please contact us with questions.

USB Series

USB530  
One per load cell

Computer