



**Scintilla**

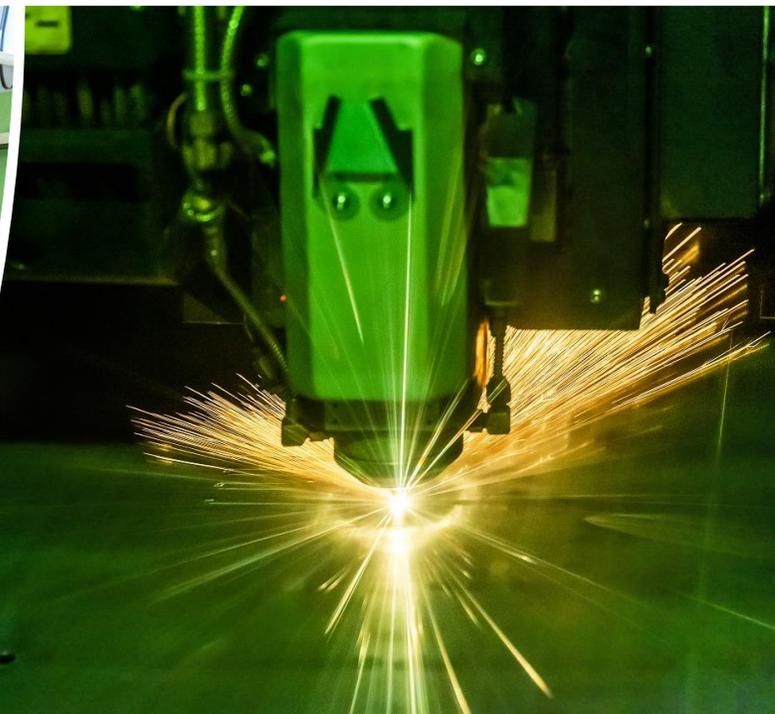
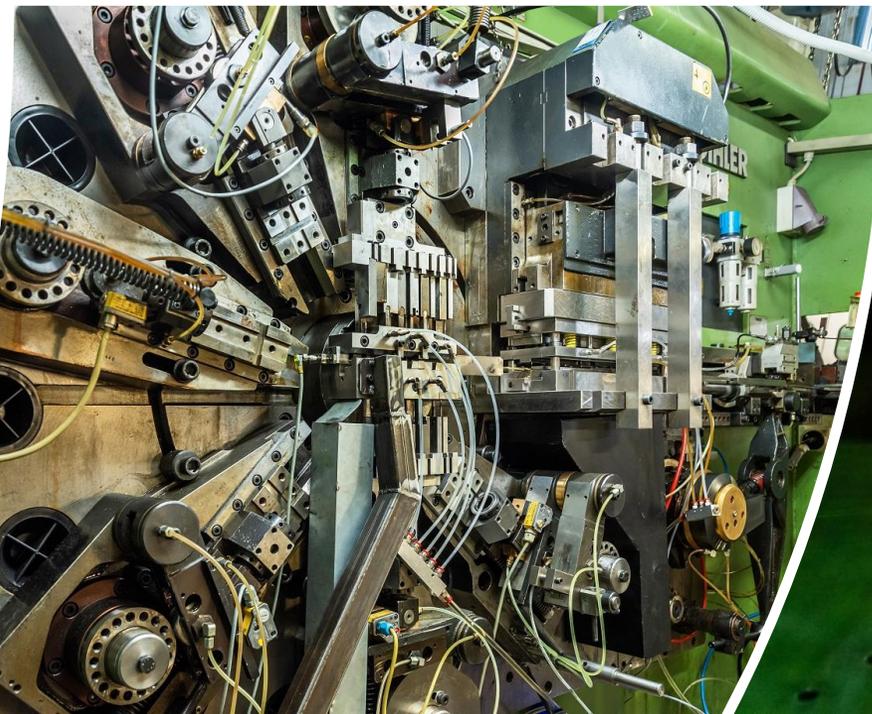
*Fabricated Metal Components*

*Introduction for*



Prima Power

Prima P





Szabolcs Szikra  
Managing Owner  
Scintilla Group

Dear Partner!

Scintilla has a history of serving customers and partners for over 25 years in Hungary and across the Globe. Having more than 20 years of Automotive industry experience we are committed to advancing the case of European mobility.

With our tooling, stamping, machining, cable confection, engineering and assembly capabilities we strive to be the partner of choice in high performance battery value chains.

Scintilla's readily available technical and human capacities allow rapid start and fast scaling of programs in competitive cost environments.

Access to a network of qualified local, regional, and global suppliers ensure efficient and comfortable cooperation right from the beginning of the development cycle.

We are looking forward to working with you.

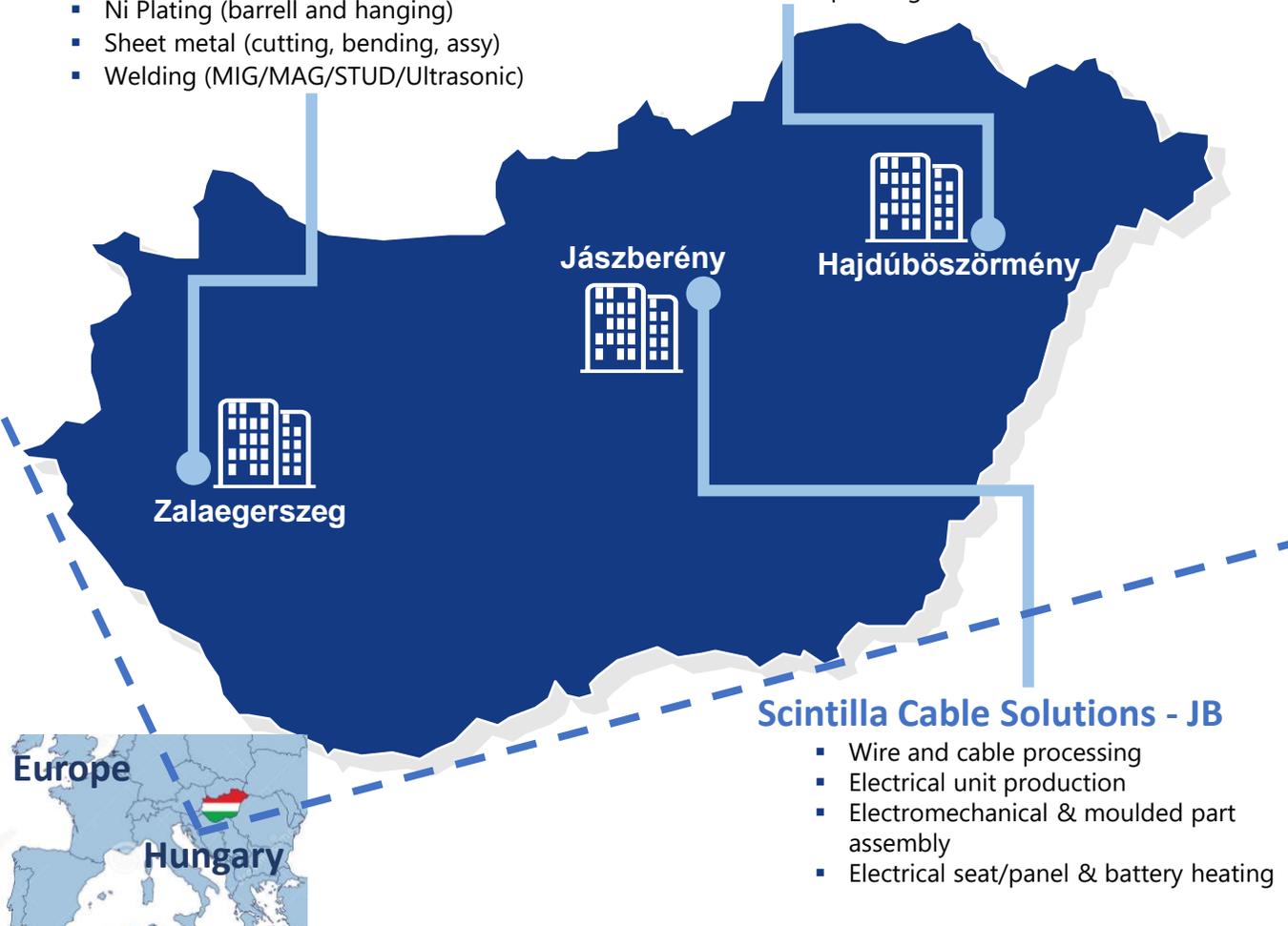
# Group level introduction

## Scintilla Metal Solutions - ZEG

- Metal Tool shop
- EDM, CNC Machining
- Metal stamping
- Deep drawing
- Ni Plating (barrell and hanging)
- Sheet metal (cutting, bending, assy)
- Welding (MIG/MAG/STUD/Ultrasonic)

## Scintilla Machining - HB

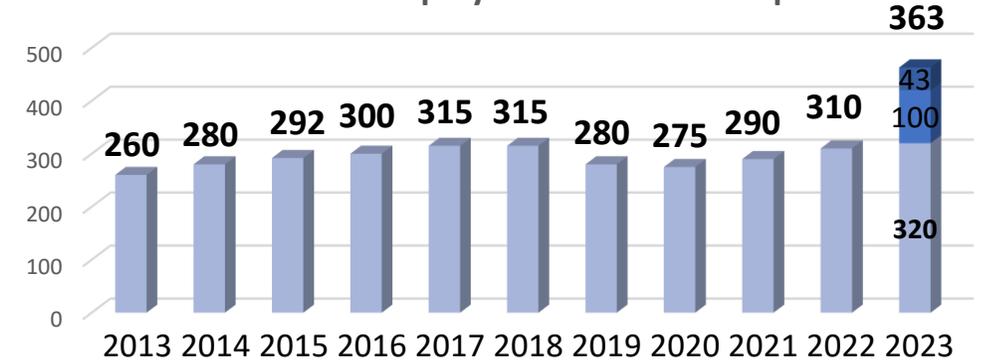
- CNC Machining (turning, grinding, milling)
- Traditional Machining
- HP Water Jet cutting
- Welding - ISO 3834-2
- Solvent based painting



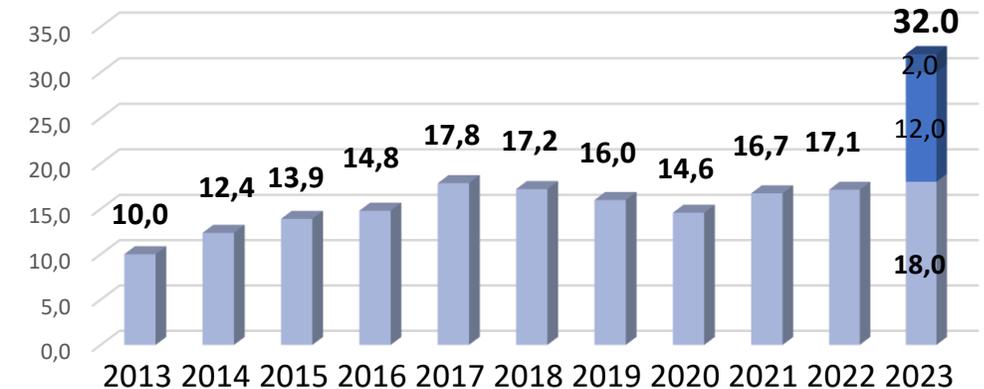
## Scintilla Cable Solutions - JB

- Wire and cable processing
- Electrical unit production
- Electromechanical & moulded part assembly
- Electrical seat/panel & battery heating

Number of employees - Scintilla Group



Sales revenue (M EUR) - Scintilla Group



■ Scintilla Cable Solutions JB
 ■ Scintilla Metal Solutions ZEG
 ■ Scintilla Machining HB



## ZALAEGRSZEG

- Established: 1976
- Heritage: GE, Tungfram
- Headcount: 100 employees
- Revenue: 12 M EUR

### METAL SOLUTIONS



#### Plant profile

Metal toolshop

EDM, CNC Machining

Metal stamping

Deep drawing

Plating

Ultrasonic welding

Sheet metal

Products

Customers

## Plant profile

### Company data

- Name: Scintilla Fémalkatrész Kft.
- Head office: 8900 Zalaegerszeg, Alsóerdei út 3.
- Tax number: 32177752-2-20
- Company reg.nr.: 20-09-078568
- Operative Director: Zsolt Balogh
- Managing Owner: Szabolcs Szikra

### Stamping

- 100+ presses (1-250T)
- Biggest **Bihler** capacity in Hungary
- Deep-drawing
- Roll forming

### Sheet metal

- Turret presses
- Fiber laser
- Press breakes
- Welding
- Stud welding
- Fastener pressing

### Metal toolshop

- Design
- Simulation
- Construction
- Testing
- Maintenance

### Complementary capabilities

- Plating, degreasing
- Bolt pressing
- Insulation insertion
- Welding (MIG/MAG, spot, ultrasonic)



9001:2015



14001:2015



45001:2018



\* All certifications are under review.  
They systems behind the certifications are working!

# Tooling & metal stamping overview

- ✓ **In-house metal progressive tool design and production**
- ✓ **Significant stamping tool transfer experience** (10-50 tools/year, overall 500+ tools transferred)
- ✓ **Reverse engineering** knowledge
- ✓ **Rapid prototyping** capability
- ✓ **1+ billion stamping** capacity per year
- ✓ **40+ years experience**, GE & Tungram heritage



- ✓ *With these technologies we are ready to produce You:*  
**HIGH VOLUME metal CANS, CASES, CAPS, PINS, TABS, BUSBARS.**

# Metal stamping (details)

## MACHINES

- 100+ presses (1-300T)
- Biggest Bihler capacity In Hungary

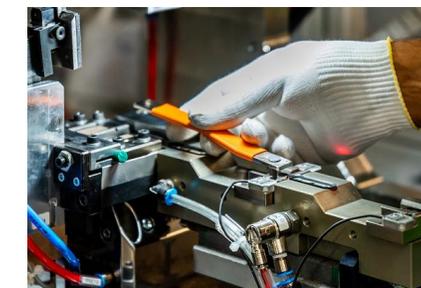
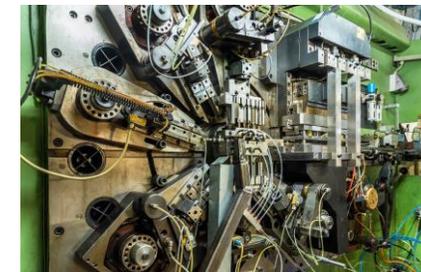
Excenter press 250 tons	1
Excenter presses from 1 to 100 tons	50+
Bihler 35, 50, 80 ton multislide machines (some with welding and mangling units)	12
Transfer presses 35, 50 tons	54
Stand-alone manual presses (1 – 63 tons)	10
Trowalizing and degreasing equipment	15
Nickel plating line (barrell)	1
Ultrasonic welding (metal)	2

## PRODUCT SIZES & TOLERANCES

Material thickness – pressing and bending (depends on raw material alloy and technology)	0,1 – 6 mm
Material thickness – deep drawing	0,1- 6 mm
Tolerance of cutted parameters (depends on material thickness)	+/-0,02 mm
Tolerance of flatness (depends on component size and geometry)	min. 0,03 mm
Biggest stamped component (always to be confirmed by technology)	120x120x2 mm
Maximum progressive tool size	Length: 2 meter
Maximum number of steps in transfer tool	9

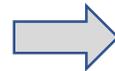
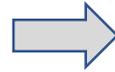
## RAW MATERIALS

- Aluminium
- Copper
- Brass
- Bronze
- Steel
- Silver



# Metal stamping products & customers

- Industrial components



- Automotive components



# CNC sheet metal forming overview

*Our progressive tooling based stamping and deep drawing activities are complemented by the below CNC sheet metal forming capabilities:*

- ✓ *Cutting - fiber laser (1 pc) and turret presses (2 pcs)*
- ✓ *Bending - press brakes (7 pcs)*
- ✓ *Assembly - MIG/MAG, stud welding, fastener pressing*



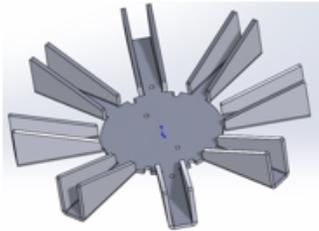
✓ *With these additional CNC technologies we are ready to produce You:*

**LOW VOLUME metal TABS, CONTACTS, CANS, CASES, RINGS, DISCS, CAPS, SPACERS, AL-CU BUSBARS, PLATES, HOUSINGS with SHORT LEAD TIME.**

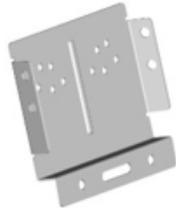
# CNC formed sheet metal products & customers



## Bended parts I.



Heat sink  
Dia: 250 mm, Th: 2 mm Alu



Bracket  
W: 120 mm, Th: 1,5 mm Steel

## Simple Assemblies



Electrical Cabinet plate + PEM  
W: 300 mm, Th: 1,5 mm Steel



Electrical Cabinet sheet+PEM  
W: 500 mm, Th: 1,5 mm Steel

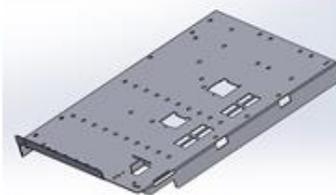
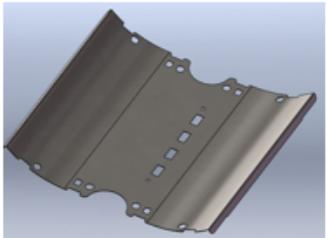
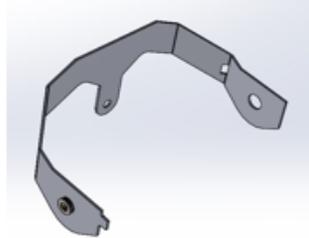


Plate + PEM  
W: 600 mm, Th: 0,8 mm Steel



Reflector  
W: 500 mm, Th: 0,8 mm Plated Steel



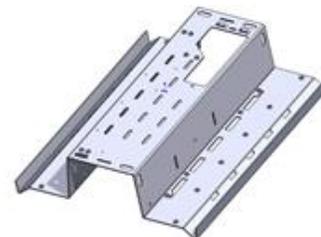
Cardan + PEM  
W: 300 mm, Th: 1,5 mm Steel



Reflector holder + PEM  
L: 800 mm, Th: 1 mm Plated Steel



BT22 box  
W: 450 mm, Th: 0,7 mm Steel



Holder  
L: 500 mm, Th: 1,5 mm Steel



77 ELEKTRONIKA

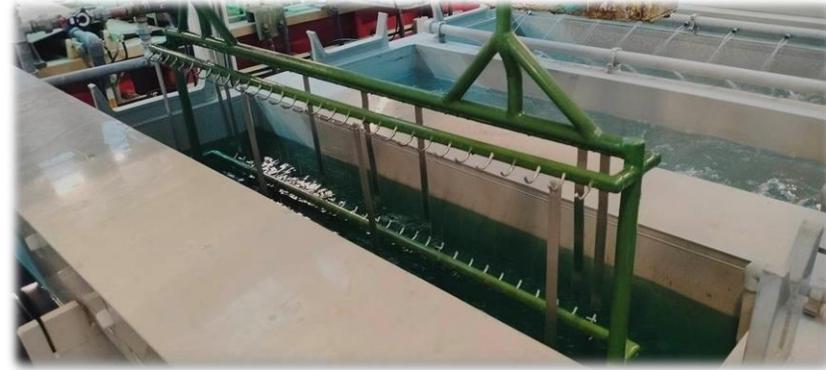


# Plating, surface treatment overview

*We provide our customers with a wide range of surface treatment procedures in-house with our skills or with the help of our close partners.*

## **IN-HOUSE NICKEL PLATING**

- ✓ Materials available for plating – **copper / steel**
- ✓ Technology - **barrel / rack**
- ✓ Nickel layer thickness - **1,5-15  $\mu\text{m}$**
- ✓ Weight of parts in barrel - **15 - 30 kg**
- ✓ Cycle time - **2 h / 4 h**
- ✓ Takt time - **325 s / 630 s**



## **EXTERNAL SURFACE TREATMENT POSSIBILITIES (with short LT within 200km range)**

- ✓ Tin plating
- ✓ Silver plating
- ✓ Zn plating
- ✓ Flash copper/silver/gold
- ✓ Anodizing
- ✓ Cromate/phosphate coating

*With these surface treatment technologies we are able to **coating your metal TABS, CONTACTS, CANS, CASES, RINGS, DISCS, CAPS, SPACERS, AL-CU BUSBARS, PLATES, HOUSINGS.***

# *APPENDIX*

# STAMPING & BUSBARS

*We are traditional stamping metal components manufacturer of the electronic and automotive industry.*

## **STAMPING:**

- ✓ **In-house metal tool design and production**
- ✓ **Significant stamping tool transfer experience** (10-50 tools/year, overall 500+ tools transferred)
- ✓ **Reverse engineering** knowledge
- ✓ **Rapid prototyping** capability
- ✓ **1+ billion stamping** capacity per year
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## STAMPING & BUSBARS

We are one of the **first and biggest busbar manufacturer/specialist** regarding **environmental-friendly** (EV, BEV, HEV, PHEV) **vehicles** in the CEE region.

**BUSBARS – the current & future high-runners of our stamping portfolio:**

- ✓ **Rapid busbar prototyping**
- ✓ **In-house washing and nickel plating**
- ✓ **Semi-automatic, robotized busbar production line**
- ✓ **Ultrasonic welding capability**
- ✓ **20+ million busbars produced per year (100+ million produced overall)**
- ✓ **5+ years dedicated busbar production experience**



## **STAMPING & BUSBARS - REFERENCES**

One of our first busbar project (from prototype till mass-production) was the **Stellantis FIAT500e** program, when we have been worked together with **Amphenol Sincere Industrial Product** and **Samsung SDI Graz**, so we have relevant busbar **project experience with Austrian partners**. We are working continuously on busbar NPI project with them.

We have several **stamping/busbar** component **customers from the Automotive Industry**.



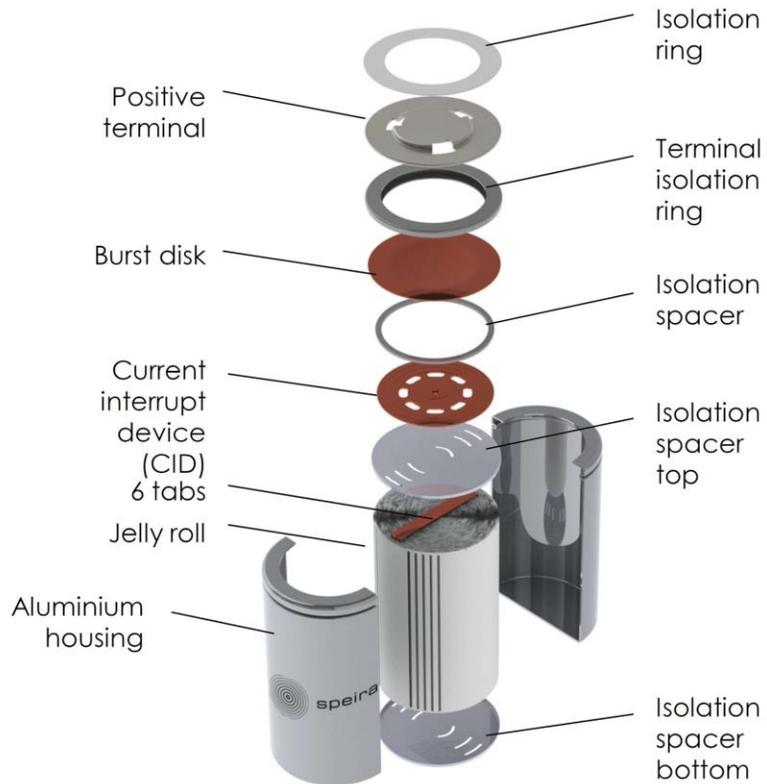


# Scintilla components for cylindrical battery cell series

## Cylindrical battery cell



## Cylindrical battery cell structure



- Metal:
- rings
  - disks
  - caps
  - spacers



- ALU & steel:
- housings

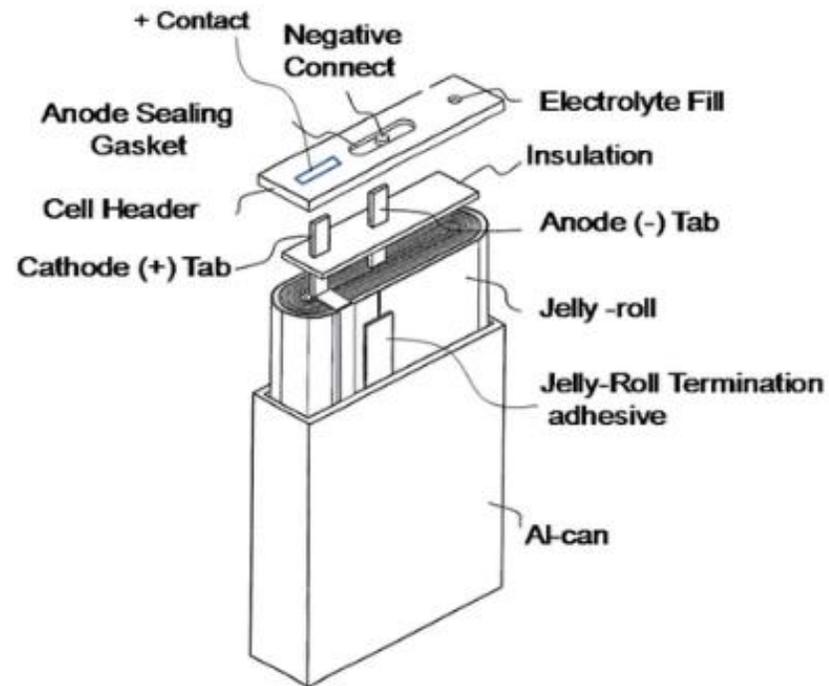


# Scintilla components for prismatic battery cell series

## Prismatic battery cell



## Prismatic battery cell structure



## Tabs, contacts

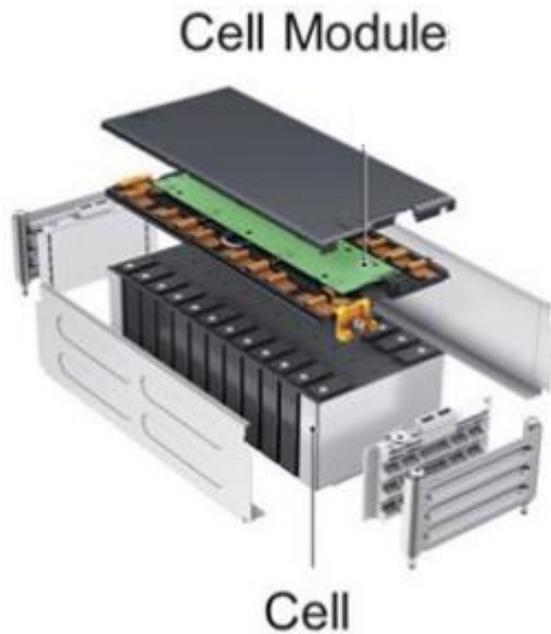


## Cans, housings

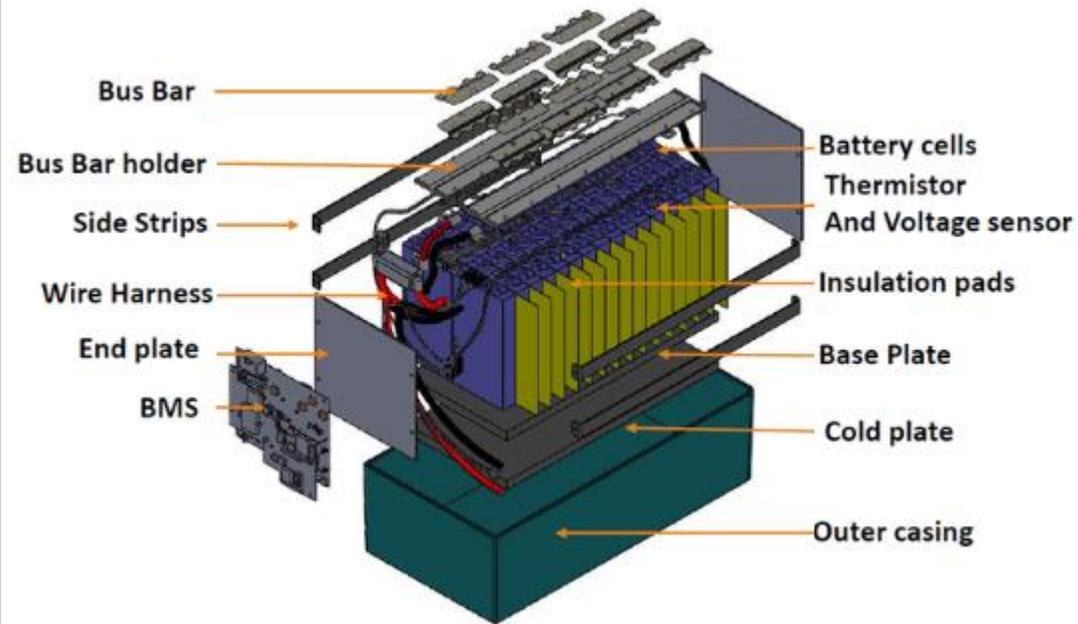


# Scintilla components for battery modules/packs

## Battery module



## Battery module structure



## components

AL, CU Busbars



Metal plates, cases, housings



*Thank you for your attention and trust!*

