

Furukawa Electric Group Automotive Business



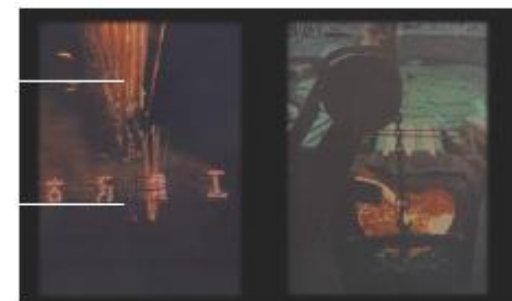
Global overview



(1RMB=15JPY)

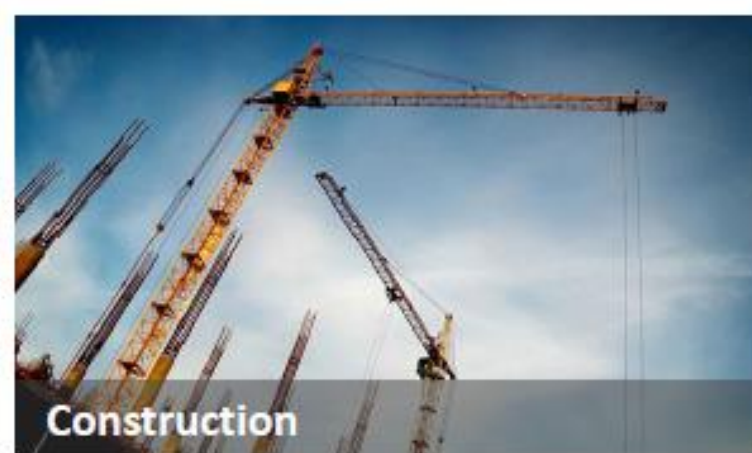
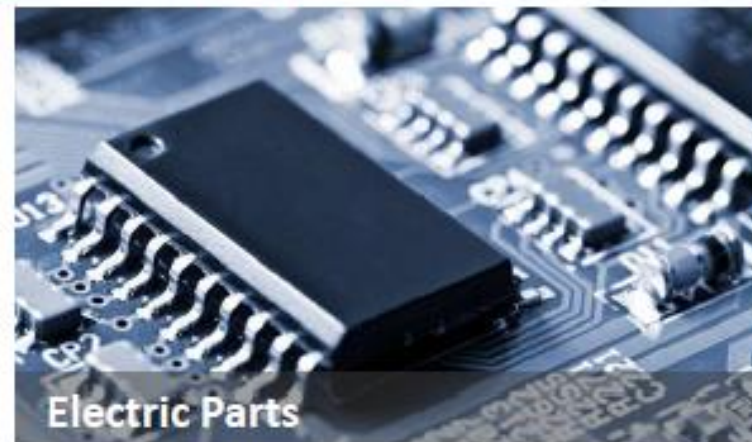
Company name	Furukawa Electric Co., Ltd.
Founded	1884
Paid-in Capital	69 Billion JPY (ca. 4.6 Billion RMB)
Amount of Sales	914 Billion JPY (ca. 61.0 Billion RMB) (Consolidated)
Employees	50,232 (Consolidated)
Head Office	Tokyo, Japan
Homepage	http://www.furukawa.co.jp/en/
JPX	TYO: 5801 / Nikkei 225 Component

Furukawa Electric has a proud
135-year history



Business Field

Our 3 core power components are “**metals**”, “**photonics**” and “**polymers**”.



Overseas bases meeting needs
worldwide

125 Group
companies
in total

Furukawa Electric has built a global network that responds to customer demand and earns customer confidence by quickly delivering products of excellent quality at highly competitive prices.



Diverse employees developing our business
all over the world

Consolidated
number of employees

50,232

Furukawa Electric is actively promoting diversity so that diverse individual employees can capitalize on their strengths.



CORPORATE PHILOSOPHY

Drawing on more than a century of expertise in the development and fabrication of advanced materials, we will contribute to the realization of a sustainable society through continuous technological innovation.

MANAGEMENT PHILOSOPHY

With an eye to the future, the Furukawa Electric Group management team pledges to:

- Live up to the expectations and trust invested in us by society, with fairness and integrity.
- Apply the sum total of our expertise to satisfy our customers and grow with them.
- Continuously strive to achieve world-class technological innovation, and transform ourselves in every area of endeavor.
- Nurture human resources at every level, so that we can become a more diverse and creative organization.



Group Vision 2030

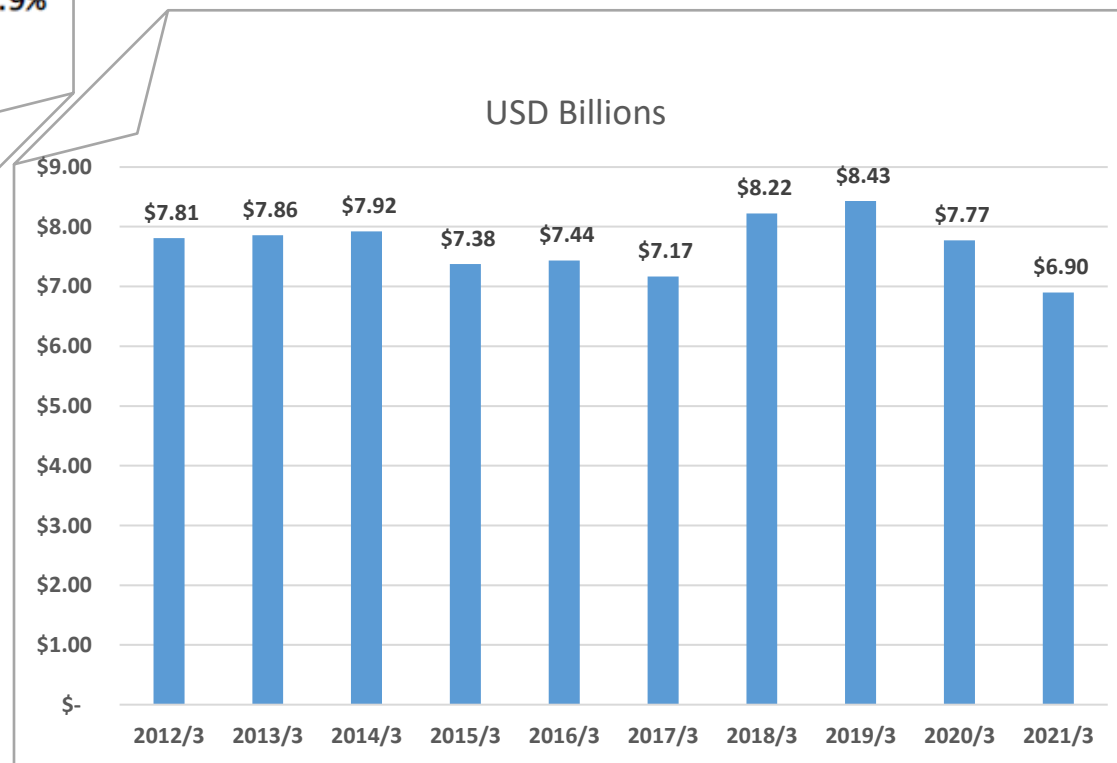
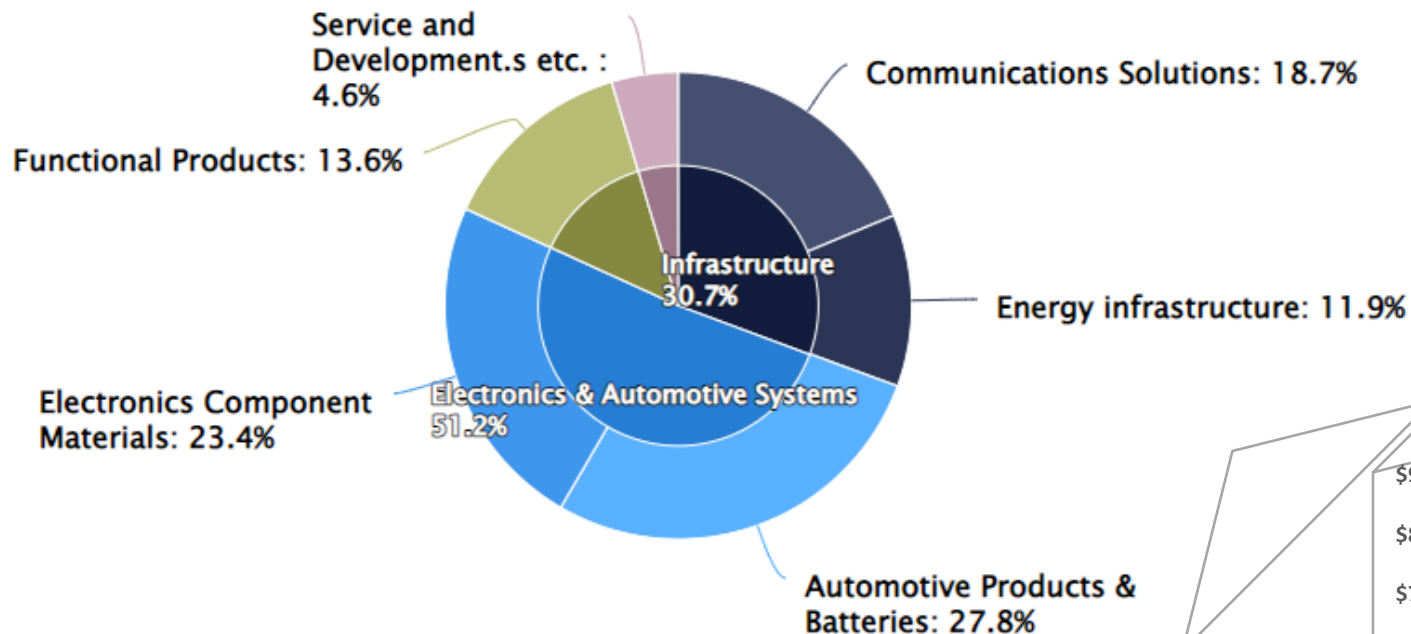
In order to build a sustainable world and make people's life safe, peaceful and rewarding, Furukawa Electric Group will create solutions for the new generation of global infrastructure combining information, energy and mobility.

► Slogan for Change

Open, Agile, Innovative.
Let's all create the No.1 business!



Percentage of net sales by segment (FY2020 as of March 2021)



FAS Company Profile

FAS

FAS
古河AS株式会社
FURUKAWA AUTOMOTIVE SYSTEMS INC.
CORPORATE PROFILE

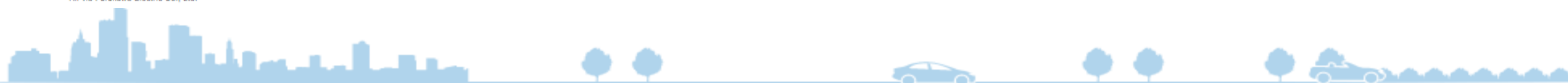


Company Outline

Company Name	Furukawa Automotive Systems Inc.
Headquarters	1000 Amago, Koura-cho, Inukami-gun, Shiga Tel: 0749-38-4150
President	Shigenobu Abe
Capital	100,000,000 yen
Turnover	139,600,000,000 yen
Founded	November 1950
Business Group	Furukawa Electric Co., Ltd.
Number of Employees	2,102 (as of March 31, 2020)
Business Operations	Design, development, manufacture and sale of wire harnesses (cable assembly for automobiles), related electronic products and other in-car functional products
Main Clients	Toyota Motor Corporation, Daihatsu Motor Co., Ltd., Honda Motor Co., Ltd., Suzuki Motor Corporation, Isuzu Motors Limited, Mazda Motor Corporation, Subaru Corporation, Nissan Motor Co., Ltd., Tokai Rika Co., Ltd., Denso Corporation, etc.

*All via Furukawa Electric Co., Ltd.

Website: <http://www.furukawaas.co.jp>



Furukawa Automotive Systems Only

2,181

Furukawa Automotive Systems Group

44,201



Business Locations in Japan

27 

Business Locations Outside Japan

 **24**

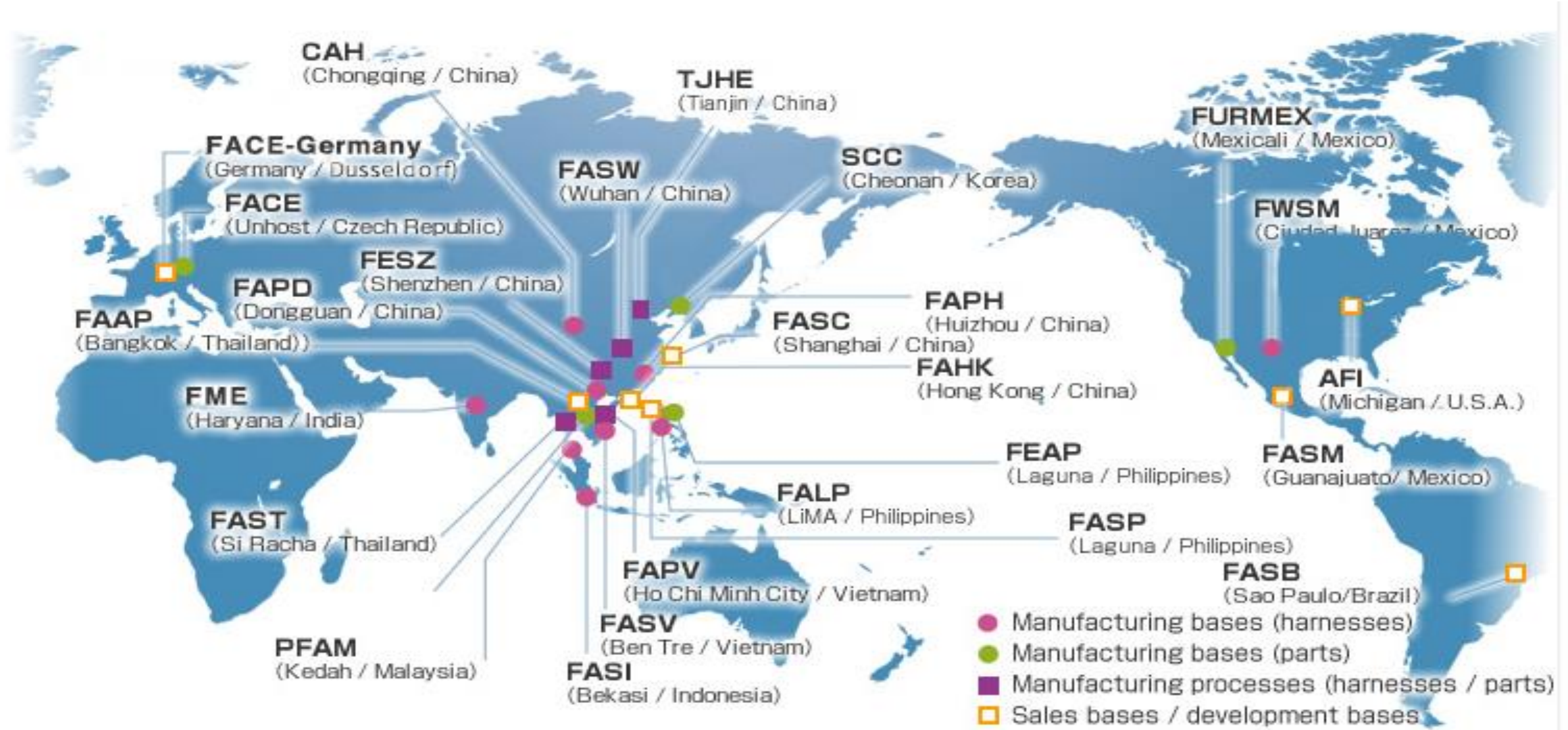
in 12 Countries



Net Sales

\$ 1.11 Billions in USD





Name	Furukawa Mexico S.A. De C.V. (FURMEX)
Address	Mexicali, Baja California, Mexico
Estd.	September, 1997
Customer	AFI (Honda, GM, Toyota, Tokai Rika)
Products	Manufacturing Cable Reel, JB.



Name	Furukawa Automotive Systems Mexico S.A. De C.V. (FASM)
Address	Valle de Santiago, Guanajuato, Mexico
Estd.	April 2016
Customer	Nissan, Honda & Mazda
Products	Manufacturing Wire Harness



- Production Site (Wire Harness)
- Production Site (Components)
- Sales / R&D Site



Name	American Furukawa Inc. (AFI)
Address	Plymouth, Michigan, USA Columbus, Ohio, USA
Estd.	January 1997
Customer	Honda, GM, Toyota, Tokai Rika
Sphere of business	Sales, design and development of Wire Harness, Cable Reel, JB, RB

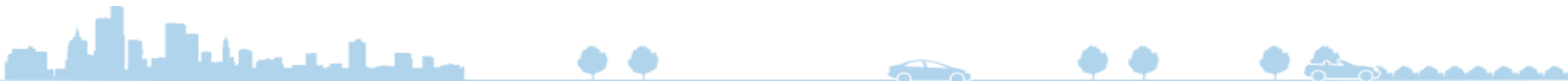


FASM Company Profile

Company Name:	Furukawa Automotive Systems Mexico (FASM)
Paid Capital:	\$7.5M USD (FEC 40%; FAS 60%)
President:	Yasufumi Kurogi
Products:	Wire Harnesses
Employees:	1,249 Associates



Valle de Santiago,
Guanajuato
Open: April 2016



FASM Location

Map of Mexico



FASM was strategically located in Guanajuato state in order to support the wire harness needs of OEM customers located in Bajío area such as Nissan, Honda, Toyota and Mazda.





ABS Quality Evaluations

Certificate Of Conformance

This is to certify that the Quality Management System of:

Furukawa Automotive Systems México S.A de C.V.

Manufacture Site (Valle de Santiago)

Circuito Zelkova # 5

Parque Industrial Sendai

Valle de Santiago, Guanajuato 38422

México

(WITH ADDITIONAL FACILITIES LISTED ON ATTACHED ANNEX)

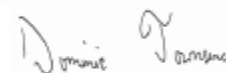
has been assessed by ABS Quality Evaluations, Inc. and found to be in conformance with the requirements set forth by:

IATF 16949:2016

The Quality Management System is applicable to:

MANUFACTURE OF WIRE HARNESSSES
EXCLUDING : PRODUCT DESIGN - IATF 16949:2016 CLAUSE 8.3

Certificate No: 61596
Effective Date: 27 January 2022
Expiration Date: 26 January 2025
Revision Date: 27 January 2022
IATF No: 0442330



Dominic Townsend, President



Validity of this certificate is based on the successful completion of the periodic surveillance audits of the management system defined by the above scope and is contingent upon prompt, written notification to ABS Quality Evaluations, Inc. of significant changes to the management system or components thereof.

ABS Quality Evaluations, Inc. 1701 City Plaza Drive, Spring, TX 77389, U.S.A.
Validity of this certificate may be confirmed at www.abs-qa.com/cert_validation.

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FASM



STRUCTURE PARTS

Direct Backlight unit



Flexible tube



Polyethylene form



Anti-sulfide Ag plating



Whisker free plating



POWER AND SIGNAL WIRING

Wire harness



Battery state sensor



Aluminium wire / Corrosion-proof terminal



Onboard connectors



High voltage harness



Sliding door harness



FUNCTIONAL PARTS

Multi mode radar



Steering roll connector
Clock spring



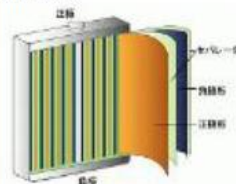
Junction Box /
Metal-Core PCB/ ECU



Aluminum / Copper Bus-bar and Case



Copper and Aluminum
foils for lithium ion
batteries



Starting lead battery



High voltage winding wire (HVWW®)



8.2 Furmex
4.4 FWSM
2.1 FASM
Million Units/Year



Wire Harness



**Combo
WH+SRC**



**A/B Wire
Harness**

**5.2 Million
Units/Yr Furmex**



Roller SRC



U-Turn SRC



Spiral SRC

**2.0 Million
Units/Yr Furmex**



Relay Box



Relay Block



Connectors





I N F I N I T I®



**INFINITI QX50 | QX55 car
set (Main harness, Door
harness, Rear harness, Rattery
harness, Back Door harness,
Chassis harness).**

**Except Engine Harness*



FASM Current Products

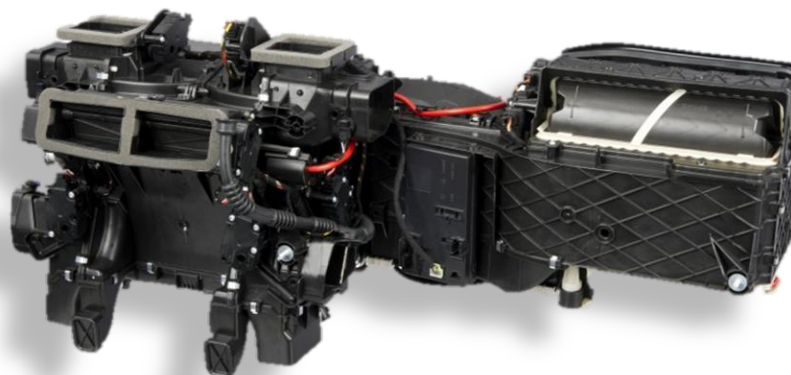


HONDA



HONDA
HR-V | PILOT |
ODDYSEY | ACURA
Several Harness Applications
(Floor Harness,
Cord Sunroof,
Cord Sunroof,
Cord C/R Sub,
Subcord FR ACM SO L,
Rear Wire Harn,
FR BPR Subcord,
RR Bumper Wire Harn,
Subcord Sunroof Motor,
Cable Start Bat,
Cable Batt Earth,
Subcord Tild & ST Op)





HIGHLY MARELLI
SENTRA | FRONTIER |
QX50 | QX55
HVAC Harness
Blower Unit Harness



Sales Distribution



PILOT



HR-V



ODYSSEY



ILX



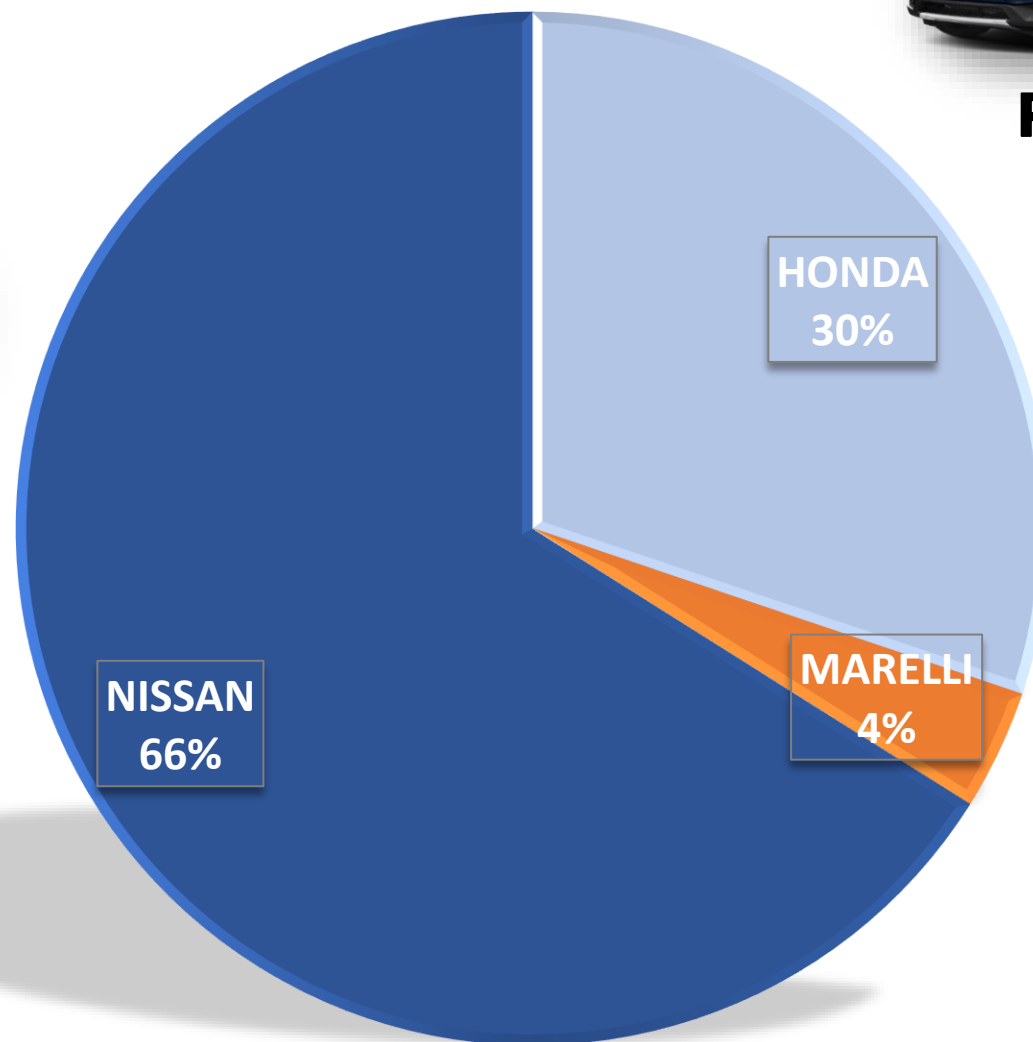
**HVAC - WIRE
HARNESS SYSTEM**



QX50



QX55





Furukawa Mexico- “Furmex” (Mexicali, Mexico)

•Development & Manufacture of Automotive Wire Harness, Steering Roll Connectors (Clocksprings), Relay, Junction and Fuse Boxes, Connectors and Injection Molded Parts

•Serves as the main production facility in North America for American Furukawa, Inc.

Incorporated

1997

Production Start-up

April 22, 1998

Plant Size

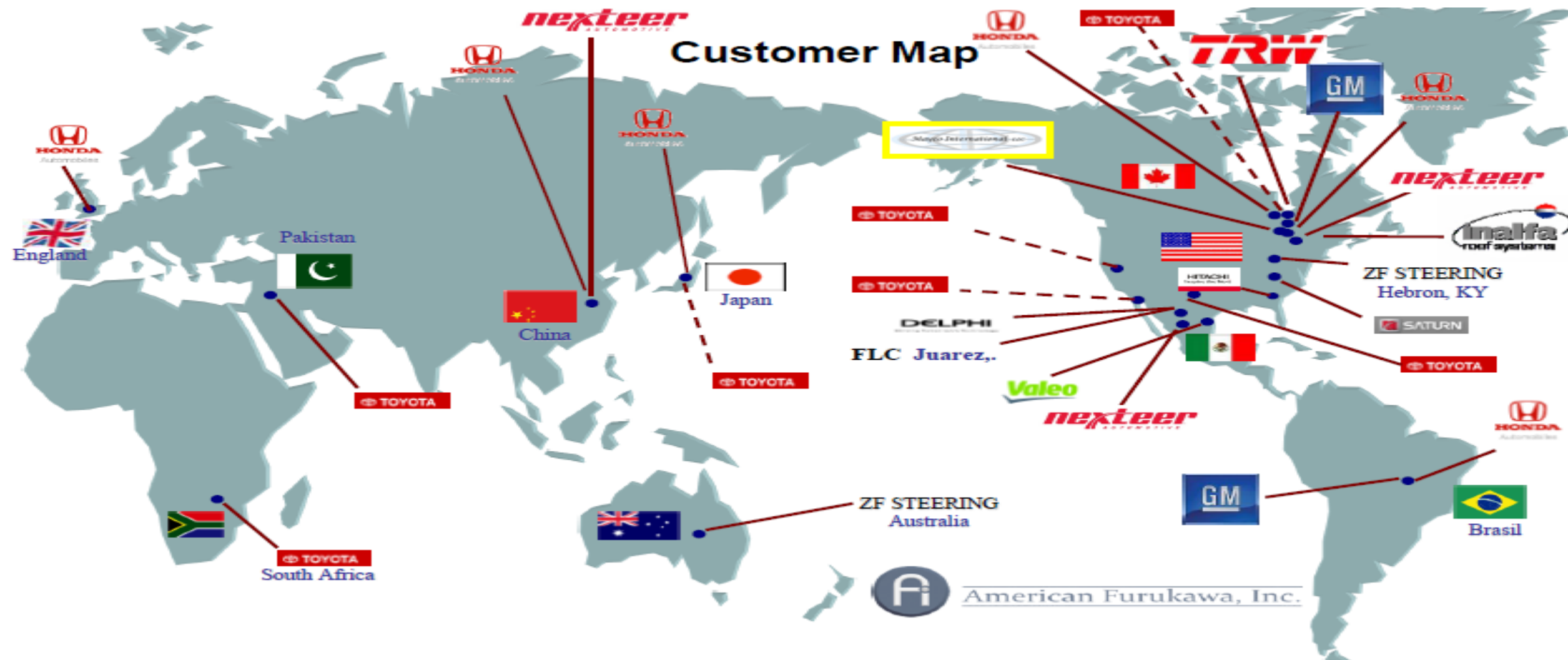
16,000 sq. m.

Employment

2,462 in 2 Shifts of Operation



FURMEX Customers



**Over 14 million units per year
manufactured in 3 facilities**



Steering Column



Sliding Door Harness



Sunroof



Torque Sensor



**Electric Power
Steering (EPS)**



**Engine Harness (Including
Battery)**



Seat



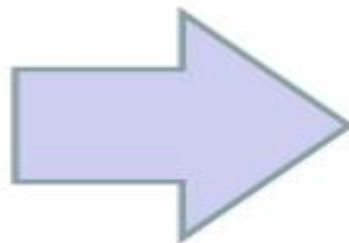
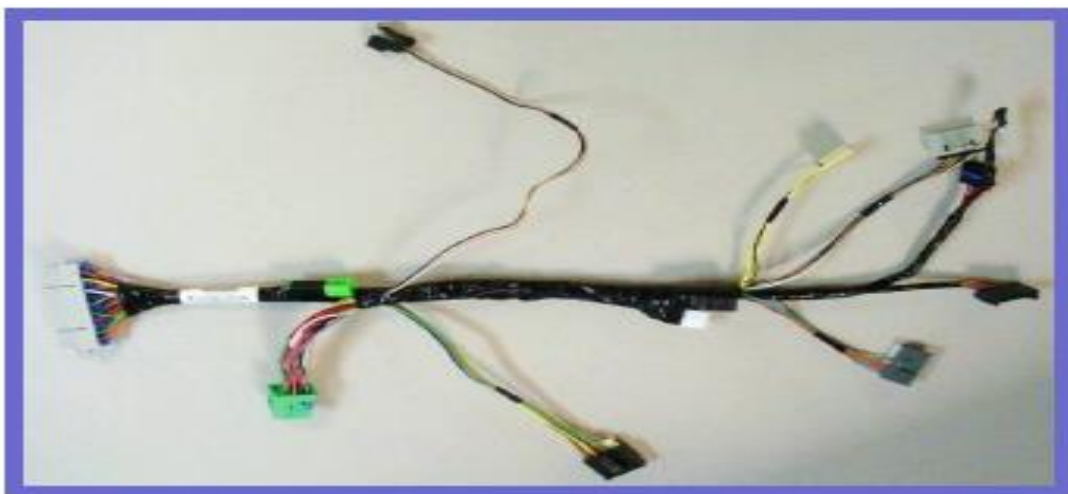
Console and HVAC



**Body Harness (Instrument
Panel)**



Furukawa in GM Trucks as the Column Harness Supplier



GMC Sierra



Cadillac Escalade



Chevy Silverado



GMC Yukon



Chevy Suburban



Chevy Tahoe



- **Current K2xx Column Harness**
- **CCT: 46~52 circuits.**
- **1.2 Million annual volume**

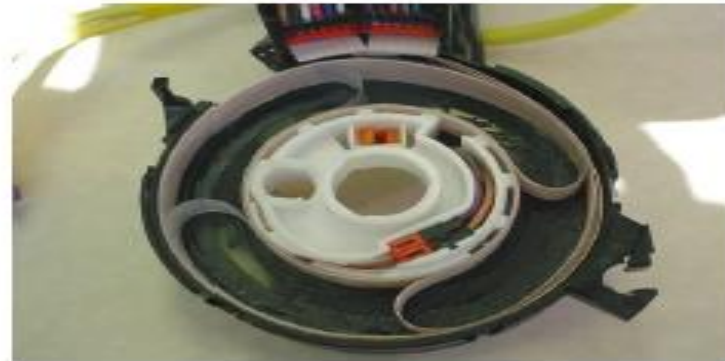


Steering Roll Connector (SRC) and Airbag Circuit Technology (a.k.a. Clockspring)

Spiral type



U-turn dummy cable

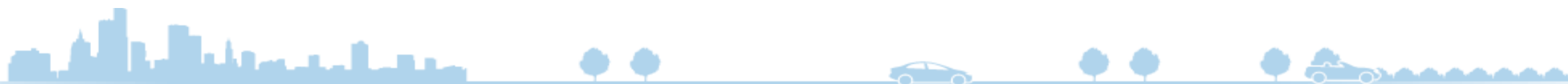


U-turn roller type



U-turn dummy cable advantages:

- Less components
- Low noise
- Less thickness
- Up to 5 cables with high current



Vertical Integration- Components Made 'In-House'

Circuit tape (FFC)



Molded components



Busbars/ lead frames



Purchased components are only:

- Copper
- Resin
- Wire
- Airbag connectors



Furukawa is a world leader in safety critical products and the #1 clockspring supplier in the world with a 40% share of the global market





Our products are in every car sold in America

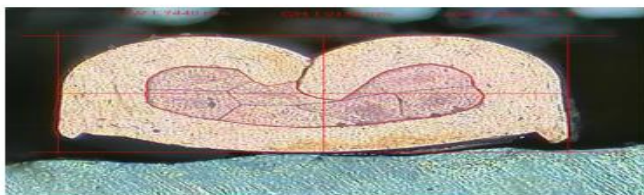
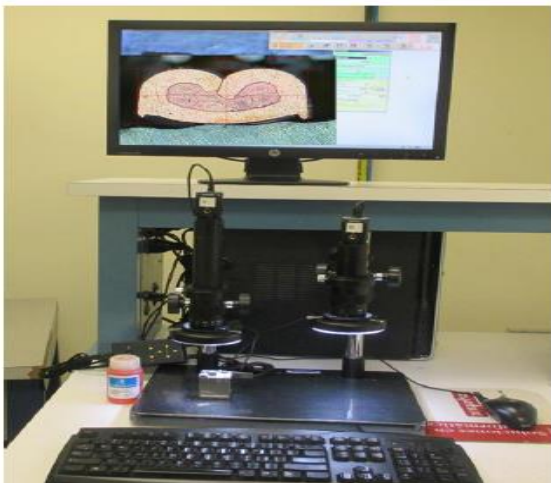


Cut & Crimping,
Pre-assembly &
Assembly of wire
harness



In-House Testing Laboratory

Crimping testing



Processed material

Cross section validation:

- Conductor Crimp Height
- Conductor Crimp Width
- Insulation Crimp Height
- Insulation Crimp Width
- Confirm compression ratio



Micrometer



Pull Tester

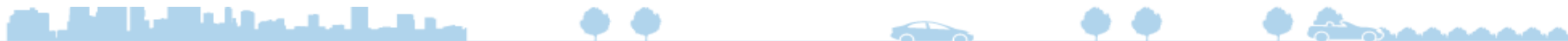
Testing and Measurement Capabilities



Cross section



Crimp Force Monitor



In-House Processes

Stamping



Ultrasonic Welding



Molding / Over Molding



Potting



In-House Processes

Vertical Type (Over molding) Molding Machines

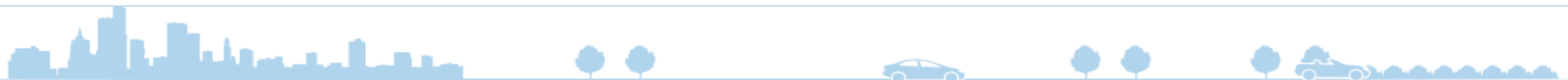
- 6 Injection Machine 40T (Single Type, Automatic reel feed)
- 4 Injection Machines 60T (Single Type, manual)
- 4 Injection Machines 75T (Rotary Table, manual)
- 5 Injection Machines 80T (Single Type, manual)

Horizontal Type Molding Machines

- 1 Injection Machine 40T
- 34 Injection Machines 80T
- 4 Injection Machines 110T
- 16 Injection Machines 210T
- 1 Injection Machines 350T
- 1 Injection Machines 450T

Stamping

- 2 – 40T Machines
- 1 – 45T Machine



Plastic / Insert Mold and Stamped Components

3,500,000 units/year



Connectors



ECU Cover



Terminals



Box Covers



Box Brackets



Column Brackets



Insert Molding



Vertical Integration - Components Made 'In-House'

Wire Harness



Molded components



Busbars / Terminals



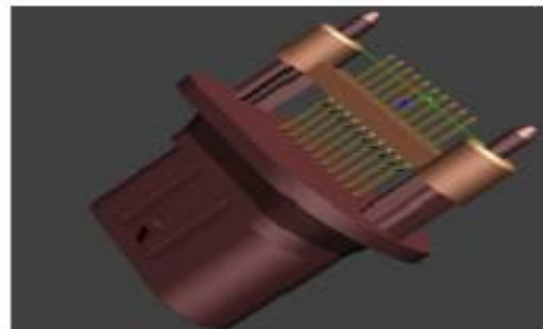
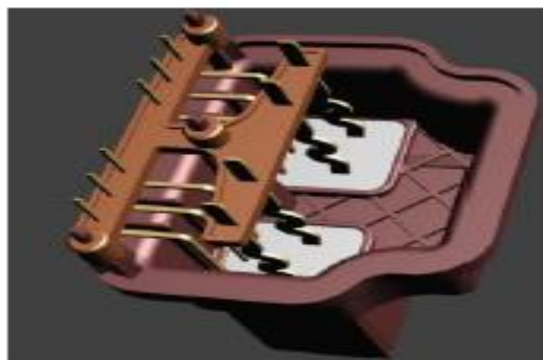
- Molding / Over molding
- Stamping
- Wire Harness Manufacturing

- Final Assembly
- Seal and Pressure Tests
- Electrical Continuity Test



Network and Probe Housing Assembly Projects

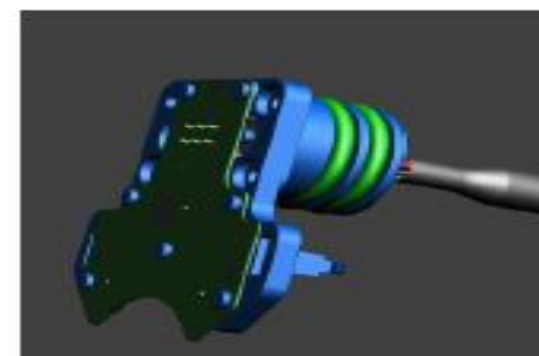
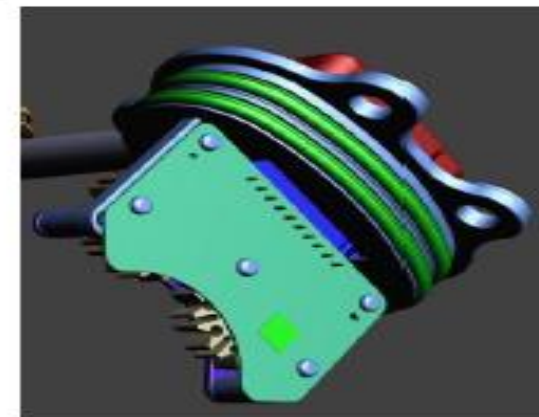
Header Only



Header and Harness



Probe Housing with wire harness



ABS Quality Evaluations

Certificate Of Conformance

This is to certify that the Quality Management System of:

American Furukawa, Inc.

Furukawa Mexico S.A. de C.V. dba Furmex
Ave. Circulo de la Amistad No. 2690
Parque Industrial Mexicali IV
Mexicali, Baja California 21210
México

(WITH ADDITIONAL FACILITIES LISTED ON ATTACHED AMBES)

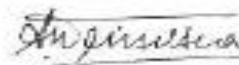
has been assessed by ABS Quality Evaluations, Inc. and found to be in conformance with the requirements set forth by:

IATF 16949:2016

The Quality Management System is applicable to:

**DESIGN, DEVELOPMENT AND MANUFACTURE OF STEERING ROLL CONNECTORS, WIRE HARNESS, RELAY,
JOINT AND FUSE BOXES, CONNECTORS AND INJECTION-MOLDED PARTS**

Certificate No: 39058
Certification Date: 17 August 2005
Effective Date: 10 July 2017
Expiration Date: 09 July 2020
Issue Date: 10 July 2017



Allen Weissberg, President



Validity of this certificate is based on the successful completion of the periodic surveillance audits of the management system defined by the above scope and in contingent upon prompt action notification to ABS Quality Evaluations, Inc. of significant changes to the management system or components thereof.

ABS Quality Evaluations, Inc. 14615 Northwest Drive, Houston, TX 77060, U.S.A.
Validity of this certificate may be confirmed at www.abs-qa.com/cert_validation.

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If you are interested on knowing more about
Furukawa Automotive Systems Mexico SA de CV

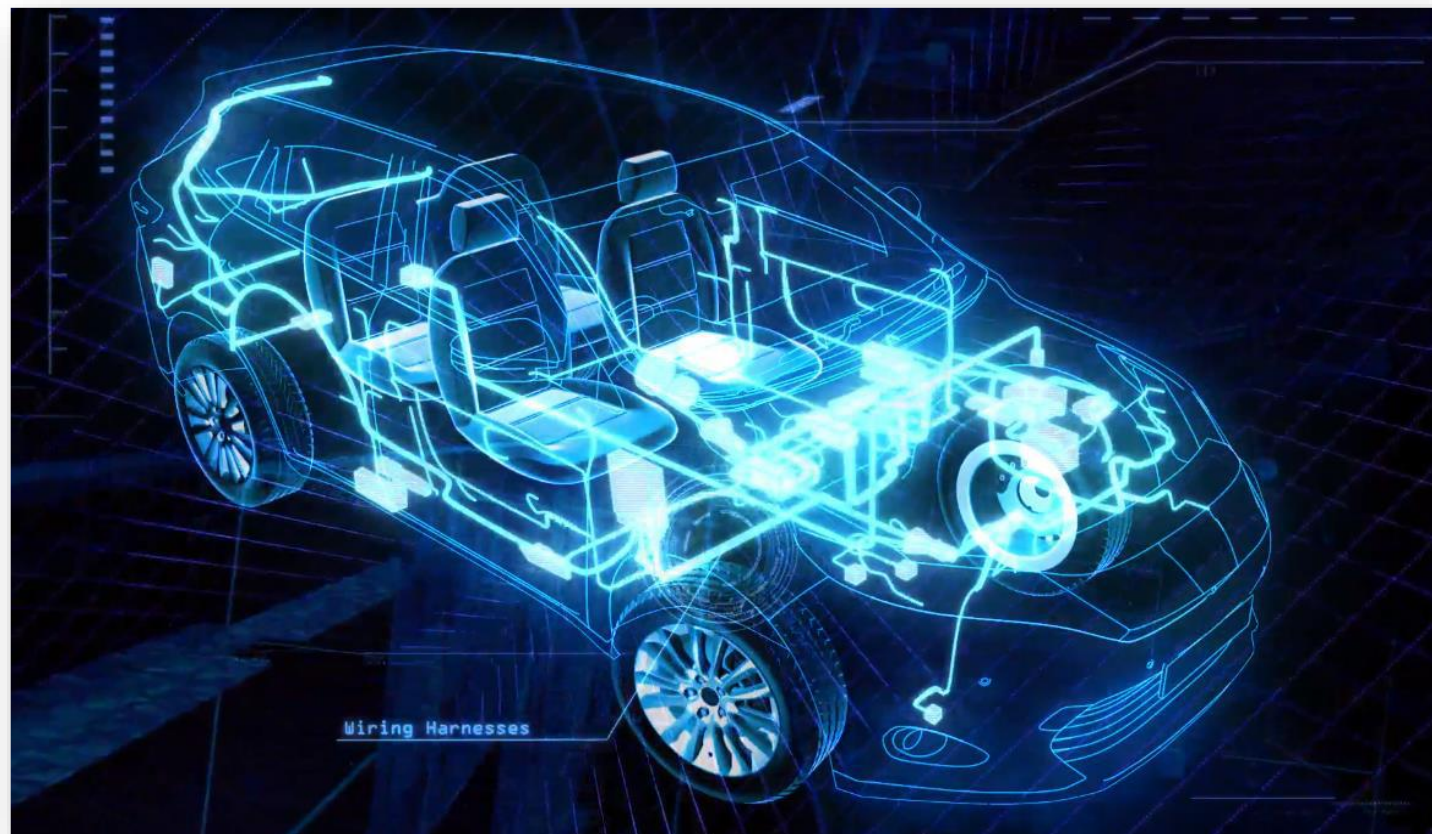
please contact:

Mauricio González

Sales Manager

mgonzalez05@fasmexico.com

Cel: (+52) 456 123 1407





Thank you for your attention!

