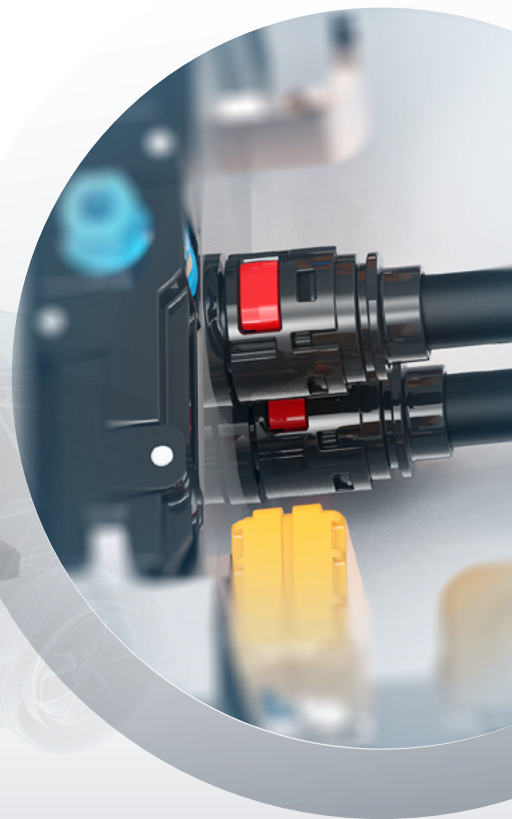
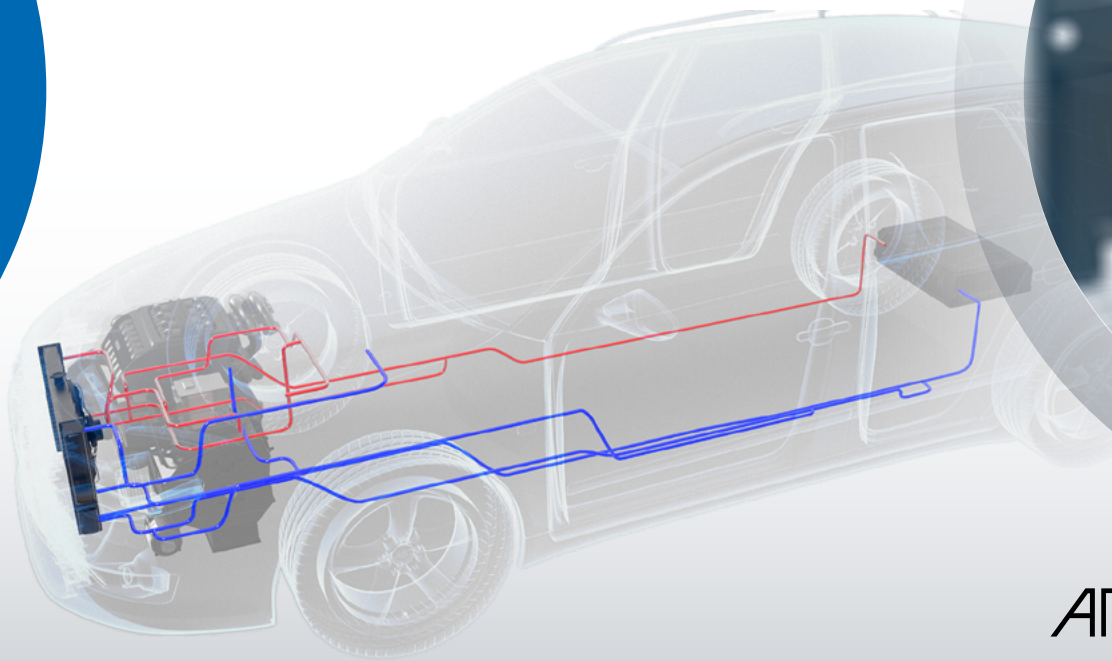


PRODUCT INFORMATION

Fluid connection solutions for

# THERMAL MANAGEMENT

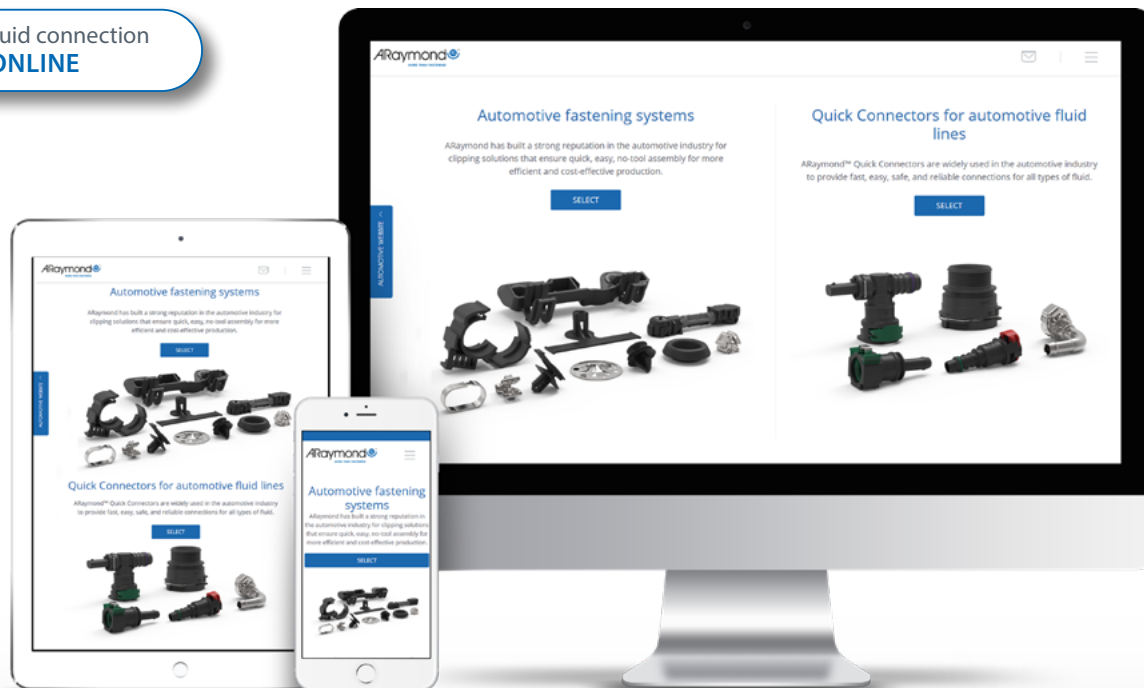


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ARaymond fluid connection  
**CATALOG ONLINE**



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# THERMAL MANAGEMENT

A key focus of ARaymond's strategy

New electric and hybrid vehicles have greater demand in terms of **PERFORMANCE, FAST CHARGING,** and **SAFETY.**

This creates requirements for more effective and more complex Thermal Management systems.

ARaymond offers fluid connection solutions for the assembly of Thermal Management lines in the vehicle and inside the battery pack.

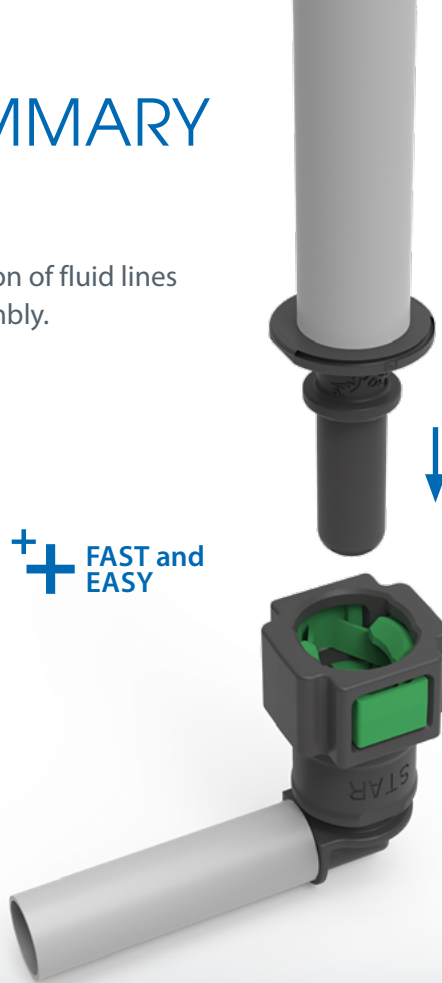


See video  
**THERMAL MANAGEMENT**

# PRODUCT SUMMARY

Our Quick Connectors enable  
**FAST, EASY** and **SECURE** connection of fluid lines  
during vehicle or battery pack assembly.

**+ FAST and EASY**



**SECURE +**



# EV THERMAL MANAGEMENT

More EV subsystems have to rely on thermal regulation (heating and/or cooling), resulting in more fluid lines and more connections with large diameter Quick Connectors to be made during vehicle assembly.

ERGONOMICS  
and SAFETY + +



# NEW VDA LOW PUSH QC

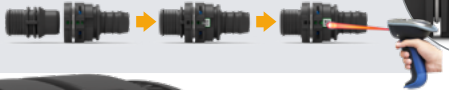
A **NEW** and improved design to meet the challenges of Thermal Management Systems integration and assembly.



## SAFETY

### VERIFIER TAB OPTION

- Option of a **VERIFIER TAB** to confirm that a **proper connection has been made**.
- Displays a customizable **QR code** which can be easily detected and read.



## ERGONOMICS

### SIGNIFICANT INSERTION FORCE REDUCTION

Better ergonomics to improve working conditions on the assembly line.

~ 80 N Industry standards VS 44 N ARaymond Low Push



ØNW16

# INSIDE THE BATTERY PACK

- Liquid cooled battery packs enable **higher vehicle performance**
  - Longer range
  - Faster charging times
  - Lower aging effects
- Challenges for inside battery pack thermal management
  - **Secured** fluid lines connections
  - Compact footprint **maximizing space** available to battery cells

COMPACT ++

+ SECURE

Cooling lines.....

Battery module.....



# SECURED QC



- Our Quick Connectors can **improve safety** by ensuring connections have been made thus preventing installation errors
- Featured product: Selfy® the single step quick connector with assembly confirmation, **VISUAL, TACTILE** and **AUDIBLE** proof of connection



**+ TACTILE CONFIRMATION**  
Also useful in blind environment



**+ AUDIBLE CONFIRMATION**  
« Click »



**+ VISUAL CONFIRMATION**  
Can be verified by camera check



# COMPACT DESIGN

When space is limited, our size-optimized **2-BUTTON COMPACT QC** designed for specific end pieces are ideal for inside battery pack applications.



# INTEGRATED FUNCTIONS

We offer sensor and valve integration directly into Quick Connectors

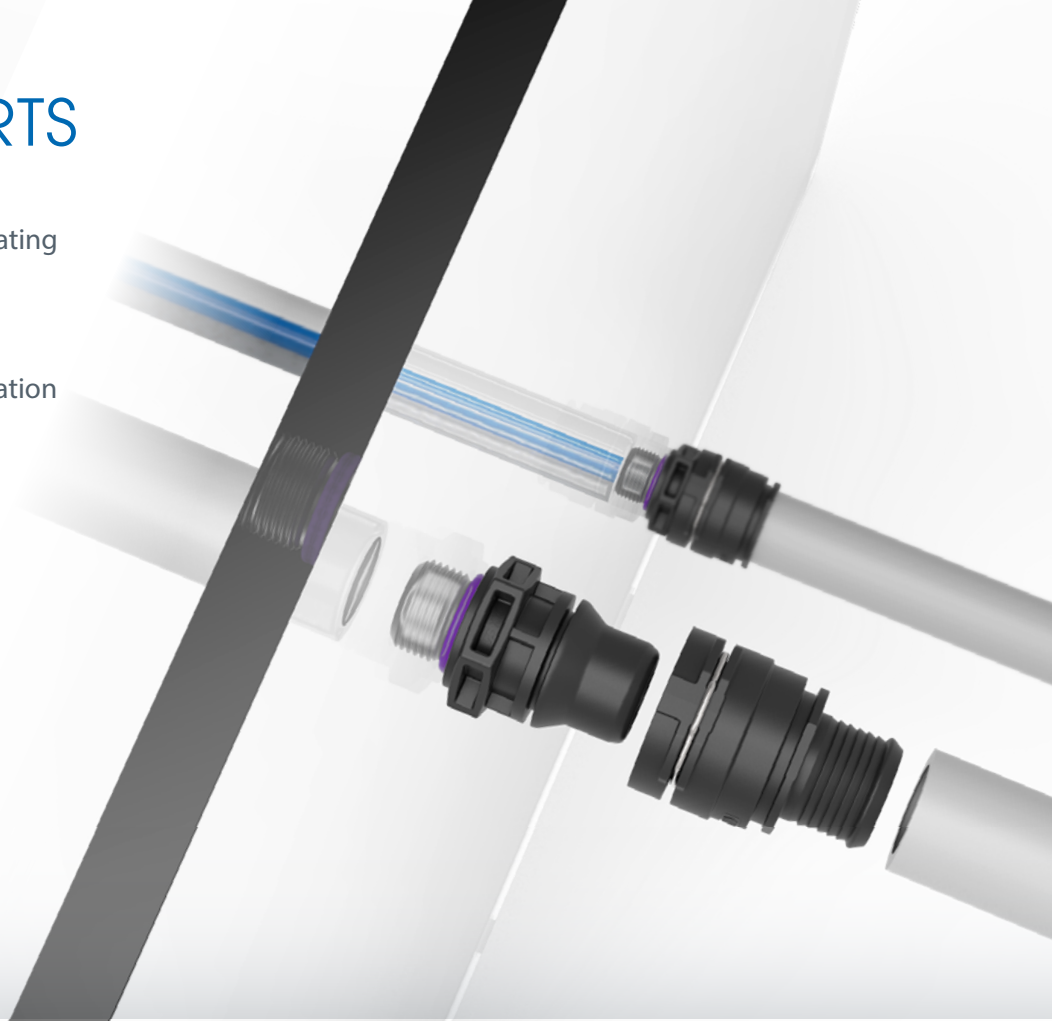
- Minimize footprint and simplify architecture
- Reduce fluid interfaces for enhanced safety



# INTERFACE PARTS

Solutions for fluid pass through facilitating Thermal Management interfaces of battery pack and power electronics

- Leak tight
- Simplifies manufacturing and integration
- Flexible and Lightweight designs



# BONDING OF PLASTIC END-PIECES

- **Space saving**
- **Design freedom:** Variety of shapes, sizes and angles
  - Watertightness validation (burst resistance > 25 bar)
  - Validation on aluminum cooling plates
  - Raw materials approved on cooling systems
  - Best adhesive selection to fulfill OEMs specs





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27 manufacturing sites in  
25 countries

7,270 employees

More than 155 years of experience

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