ARAYMOND, CLOSE TO YOU EVERYWHERE

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INNOVATION EXCELLENCE AND BEST-IN-CLASS FASTENING AND ASSEMBLY SOLUTIONS

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INNOVATION EXCELLENCE AND BEST-IN-CLASS FASTENING AND ASSEMBLY SOLUTIONS

Discover all product videos on Youtube ARaymond Automotive.
We believe in the power of assembly solutions to ease the integration of the ever-growing number of components and functions in cars. We design smart solutions that avoid tools, improve ergonomics and serviceability, save space, and allow late customization in production line processes to achieve increased efficiency.

Safe, discrete and light, our solutions contribute to reduced emissions, and improve passenger comfort and perceived vehicle quality.

**INTERNATIONAL EXPERT IN FASTENING AND ASSEMBLY SOLUTIONS**

**Improved ergonomics**

**Quality of assembly**

**Increased efficiency**
A SOLUTION FOR ANY ASSEMBLY SITUATION

CLIPPING SYSTEMS
ARaymond has built a strong reputation in the automotive industry for clipping solutions that ensure quick, easy, no-tool assembly for more efficiency and a qualitative assembly process.

QUICK CONNECTORS FOR FLUID LINES
ARaymond™ Quick Connectors are widely used in the automotive industry to provide fast, easy, safe, and reliable connections for all types of fluid systems.

BONDING SOLUTIONS FOR FASTENERS
ARaymond™ bonding solutions are tailor made complete systems including adhesive, process and services that ensure production and quality achievements.

www.araymond-automotive.com
CABLE & TUBE FASTENERS

Our solutions manage easily all tubes and cables such as continuous tubes, bundles of tubes or cables, corrugated hoses, and more. They are compatible with all common mounting strategies: round, oval, oblong, and square holes, blind holes, studs and edges. They are available in several designs for a wide range of diameters, and panel thicknesses and can manage multi-housings.

CABLE STRAPS
- Wire harness diameters from 0.5 to ±40mm.
- Swivel components increase flexibility for multidirectional mounting.
- Double cable straps allow to manage more than one bundle.
- Lightweight straps cover all wire harness diameters up to 25 mm, reducing waste and costs, and optimizing shipping and logistics.

Weight saving
Temperature resistant
Vibration and noise reduction
Watertightness
Modularity

TUBE HOLDERS & CABLE CLIPS
- Plastic and lightweight spring steel combinations
- Broad range of options: live hinges, locking and adjustable lids
- Metal parts for high temperature environments

CORRUGATED HOSE CLIPS are specifically designed to prevent the hose from sliding along the wire bundles.

PLASTIC CABLE CLIP can be combined with spring steel insert to improve retention.

Bi-injected materials absorb vibrations and reduce noise.

Spacers manage brake, fuel, and electrical routing throughout vehicle.

Swivel function allows hoses to be fixed at different directions.

MODULAR SOLUTIONS
- Pre-assembled swivel clips range offers different fixing solutions and cable locking systems.
- Multiple fixing combinations and single or multiple cable housings available.

ONE PIECE SOLUTION FOR WIRES AND PIPES
- Single molded swivel clip
  - Locking 90° - swivels 90°.
  - Bundle diameter from 1 to 40 mm.

CLIPPING SYSTEMS
BRACKETS
• Suit almost any packaging requirement and surface treatments.
• Spring steel is a lightweight, high strength and yet flexible material specifically suitable for ergonomic fastening.

Metal brackets for robust, temperature-resistant assembly.

Vibration can be reduced through product design or by applying plastic materials.

CABLE CHANNELS
• Made from injection-molded plastic components with or without metal inserts.
• Robust performance throughout the vehicle’s lifetime.
• Optimized number of fixing points.
• Repeatable assembly with quick and easy mounting.

High voltage applications

SAVING THROUGH COMMONIZING
MODULAR TAPE-ON CLIP
• All cable routing directions covered by only two parts.
• Excellent solution for efficient part ordering, inventory management, and transportation resulting in significant cost saving.

FUSE BOXES & RELAY HOLDERS
• Metal inserts, overmolded or assembled, provide secure and reliable fastening to vehicle.
• High quality laser marking process for identification of serviceable content.

WEIGHT SAVING BRACKET
• Lightweight and cost efficient plastic solution; single molded bracket and clip.
• Reinforced with metal anti-creep inserts.

CLIPPING SYSTEMS
TAPE-ON CLIPS
• Available with or without offsets and wire housings.
• Good control of wire harness over tape feature length.

Lightweight spring steel tape-on clip suitable for high-temperature and harsh environments.

CONNECTOR HOLDERS & PROTECTOR CAPS
• Protecting, covering, and mounting connectors available for any circuits unused at point of manufacture.

Bi-injected seals for watertightness.

SAVING THROUGH COMMONIZING
SAVING THROUGH COMMONIZING
PANEL & TRIM FASTENERS

All-in-one parts eliminating the need for multiple fasteners and complex assembly operations. Screwless and easy to assemble, our fasteners accommodate most panel orientations and sizes.

Increased passenger safety
Preserved aesthetics
Serviceability
Compact packaging
Watertightness
Vibration and noise reduction

EDGE PANEL CLIPS

- Multi-functional: metal-to-metal or metal-to-plastic.
- Fast and easy manual mounting.
- Designed for parallel, non-parallel and perpendicular panels.

Integrated barbs provide a tight grip and a secure assembly.

Upturned lead lips ease assembly over the panel edge.

High strength, compact clip designed to retain exterior trim tightly against the body while preventing water intrusion.

SNAP CLIPS

TOOL-FREE DISASSEMBLY
FOR EASY TRIM SERVICEABILITY

2- stage panel trim retainer
- Fits any A, B, or C pillar.
- A tool-free blind disassembly process facilitates trim replacement after a crash, without access cover.
- Two-component assembly produced on a fully-automated assembly line with camera quality inspection.

Prevents vibration over the car’s lifetime, enhancing consumers’ quality perception.

HEADLINER & PILLAR TRIM

Prevents vibration over the car’s lifetime, enhancing consumers’ quality perception.

SNAP CLIPS

- Ergonomic push-in force.
- Easy servicableity.
- Without tools or screws.
- Invisible once mounted.

Versatile headliner fasteners with panel locking features for sun visor, upper console, grab handle and sunglass pocket assembly.

SMALL PACKAGING FOR TIGHT ENVIRONMENT (IPCC)

High retention force, ideal for front grill assembly.

Customized pillar trim, including wire and tube routing.

WHEN FASTENING SOLUTIONS BRING MORE SAFETY

- Very low assembly force.
- High retention performance.
- Different packaging thickness possible.
- Simple disassembly with standard pliers.
- Serviceability, 5 times without plastic deformation.

HEADLINER & PILLAR TRIM

Prevents vibration over the car’s lifetime, enhancing consumers’ quality perception.

VERSATILE HEADLINER FASTENERS WITH PANEL LOCKING FEATURES FOR SUN VISOR, UPPER CONSOLE, GRAB HANDLE AND SUNGLASS POCKET ASSEMBLY.

SMALL PACKAGING FOR TIGHT ENVIRONMENT (IPCC).

HIGH RETENTION FORCE, IDEAL FOR FRONT GRILL ASSEMBLY.

CUSTOMIZED PILLAR TRIM, INCLUDING WIRE AND TUBE ROUTING.

WHEN FASTENING SOLUTIONS BRING MORE SAFETY

- Very low assembly force.
- High retention performance.
- Different packaging thickness possible.
- Simple disassembly with standard pliers.
- Serviceability, 5 times without plastic deformation.
CLIPPING SYSTEMS

PANEL CLIPS
- Easy to install and serviceable.
- Audible click to check the assembly.
- Compact for tight packaging environment.

INVISIBLE SCREWLESS SOLUTION
Two-component screwless panel retainer
- Vertical and lateral tolerance management.
- High quality sealing.
- Easy manual and screwless assembly by clipping.
- Easy disassembly by simple push release for serviceability.

PUSH PINS
- Easy manual assembly and quick installation.
- Available with barbed feature which easily digs into the panel with minimal force.
- Can be grained and color matched for class A surface.

PUSH RIVETS
- Simply push through or turn the screw to lock and the expansion leg provides a secure joint.
- Easy manual assembly.
- Can be painted and compatible with surface treatment for aesthetic solutions.

BRACKETS
- Enhance structural strength.
- Reduce gap.

VIBRATION & NOISE REDUCTION
Bi-injected rocker panel bracket
- Bi-injection sealing reduces noise transfer to the passenger compartment.
- Flexible, allows lower-body shell expansion.
Our solutions accommodate most panel orientations, sizes and thicknesses. They are suitable for both metric or self-tapping and PT thread screws.

**PANEL EDGE NUTS**
- Self-retaining ring securing the pre-mounting and speeding up the assembly.
- Anti-creep mechanism.
- Prevailing torque.
- Integrated guide flaps allow automated assembly processes.
- Electrically insulated nuts and watertight nuts are also available.
- Metric and non metric.

**ROBUST AND FLEXIBLE SOLUTIONS**
Sliding snap-on nut
- Robust screw-in assembly with the flexibility of an embedded anti-creep ring for tolerance management.
- Watertightness ensured with foam.
- Sliding before tightening for good positioning.
- Allowing linear sliding movement after assembly.

**EXPANSION AND PUSH-IN NUTS**
- Fast and vibration-resistant assembly for blind and center-panel locations where only one side is accessible.
- Easy to snap in, self-retained by spring legs.
- Plastic for corrosion-resistance.
- Metric and non metric.

**ANTI-CREEP**
- Tolerance management
- Vibration absorption
- Watertightness
- Robust

**PUSH-ON STUDS RETAINERS**
- For threaded or smooth studs.
- Compact design.

**LIGHTWEIGHT 2-IN-1 SOLUTION**
- Lightweight 2-in-1 strain relief plate that can reduce tailgate hinge weight by 75%.
- Distributes load and avoids composite creep.

**METAL ANTI-CREEPING RINGS**
- Transmit the locking torque of the screw while preventing plastic creeping, thus stabilizing the attachment.

**GROMMETS**
- High quality sealing.
- Reducing vibration and associated noise.

**PLUGS**
- Tight seal.
- Water evacuation feature available.
- Easy serviceability.

**SELF-ADJUSTABLE GAP COMPENSATION TAILGATE BUMPER**
- Easy, quick and accurate calibration process.
- Auto-adjusting height.
- Watertight, prevent gaps, vibrations & noise.
- Screwless locking by quarter-turn.

Specific engine plug designs with assembled O-ring seal for watertightness or locking system with hinge for easy serviceability.
WASHER SYSTEMS
Mounted on or under the hood of the car, on the cowl, in the stop lamp, or on the wiper arms, our nozzles can accommodate all front and rear windshields, as well as cameras and sensors. They allow efficient water management. Options include integrated check valves, heated nozzles and seals.

Quick Connectors
Nozzles and jumpertubes assembly
Check valves

SOLUTIONS FOR SELF-DRIVER CAR SYSTEMS
Rear-view camera nozzle
• Hook fastening system, easy to assemble and serviceable.
• Efficient water consumption.

Camera
Integrated check valve

DESIGN AND MANUFACTURING OF COMPLEX PARTS
ARaymond offers vehicle-specific development services to respond to automotive OEMs and parts manufacturers’ assembly challenges. We handle all stages of manufacturing in house, from designing molds to plastic injection molding of complex or particularly detailed parts.

Nozzles and jumpertubes assembly

ASSEMBLY PARTS AND MECHANISMS
ARaymond is able to provide a comprehensive assembly service, involving metal, plastic parts or a bi-material assembly. We also combine our expertise in clipping, connecting, and bonding to provide the best assembly solution.

Solutions for self-driver car systems

ACTUATOR AND ADJUSTER
Our experts optimize the design of individual parts to be assembled together to ensure both a good assembly and end performance.

100% control of assembly to ensure the functioning of the part.

CUSTOM DEVELOPMENT & MANUFACTURING EXPERTISE
ARaymond™ Quick Connectors bring reliable and efficient solutions for fuel lines and all fluid lines. The connectors are compact, short and easy to use. No tools are required to disconnect for service. The use of Quick Connectors will help reduce assembly cycle time and increase productivity.

**Secure connection**

**Sealing tightness**

**Time, space and weight savings**

### 1-AND 2-BUTTONS QUICK CONNECTORS

**LARGE RANGE**

- Diameters from 6.30-1/4” to 37.56 SAE standard.
- Adapt to any packaging environment with a wide range of geometries, angles and multiways.
- 100% tested, guaranteeing a quick and secure connection.
- Compliant with the SAE J2044 standard.

**P2L®: MANUAL CONNECTION WITH VISUAL CONFIRMATION**

- Visual and tactile confirmation of the connection: the lock latches only when the end piece is fully engaged.
- Compliant with the SAE J2044 standard.

**A FUEL CONNECTOR FOR DEMANDING CONDITIONS**

- Visual and tactile confirmation of the connection: the lock latches only when the end piece is fully engaged.
- Compliant with the SAE J2044 standard.

**Metal P2L®**

- Improved crash test, temperature, and pressure performance.
- Allows crimping to reinforce high-temperature fuel hoses and oil hoses in the engine compartment.
- Low insertion effort with our new design.

**VDA RANGE FOR COOLING LINES**

- Diameters from NW6 to NW32 VDA standard.
- Robust and compact.
- Compatible with various cooling fluids such as glycol and oil.

**THERMAL MANAGEMENT**

Both traditional internal combustion engines and new EV and hybrid EV powertrains require thermal management systems to enhance performance, lower fuel consumption, and increase battery life and capacity. Whatever the system configuration, ARaymond has a solution.

Quick Connectors with integrated sensors help to provide optimum performance where both electrical and fluid system are present.
In response to a customer request for a specific feature, ARaymond developed a Quick Connector with automatic locking. The Selfy Quick Connector exceeded the customer’s expectations, securing connection operations on the production line.

- Foolproof connection with audible, tactile, and visual confirmation in one assembly operation 100% automatic.

**SELFY QUICK CONNECTOR:**
**SIMPLE, SMART, SECURE**

**RAYLOCK®:** AUTOMATIC CONNECTION WITH MANUAL DOUBLE LOCKING

- Unlockable once the metal clip is pushed down.
- Compliant with the SAE J2044 standard.

**ACCESSORIES TO CHECK THE CONNECTION**

The plastic «double lock» latch can only be pushed down and secured if the mating tube is fully inserted in the QC helping to ensure a complete connection.

Spring Off Element: Plastic poka yoke ensuring the correct use of the end piece; mainly suitable for brake booster applications.

Assembly Check Pull Tab: Plastic pull tab automatically ejected, confirming that the end piece is fully engaged.

**VALUE ADDED FEATURES**

**MECHATRONICS:** FLUID PRESSURE AND TEMPERATURE MEASUREMENT

- Smart and compact 2-in-1 solution: fluid connection and pressure or temperature measurement.
- Easy change of measuring range by changing the sensor without additional hardware needed.

**VALVES:** FLUID FLOW CONTROL

- Shut-off valve
- One-way valve
- Pressure regulator
- RG® valve: allows the priming or venting of the system when access is needed for troubleshooting.

**FASTENING AND CONNECTING SOLUTIONS FOR BETTER SERVICEABILITY AND ASSEMBLY**

Combination of a Quick Connector and integrated shut-off valve for leak-free disconnection to facilitate the transportation of engines and other fluid modules after testing and filling.

A molded ARaymond bracket secures the Quick Connectors in place for easy connection to the mating components at the OEM assembly plant.
**BONDING SOLUTIONS FOR AUTOMOTIVE FASTENERS**

**Turnkey solution**
- Solid, clean & fast curing adhesive
- Complete monitoring of the bonding process
- Assistance and quality control during serial life

**ASSEMBLY OF ADD-ON PARTS ON GLAZING**

**BONDED SENSORS AND CAMERAS ON WINDSHIELDS**
- Bonded pre- or post-autoclave, which allows more freedom on the assembly line.
- No curing stock.

**BONDED OPENING GLAZING SYSTEMS**
- Ideal when bonding is required, onto laminated glass or on the edge of the glass.
- Allows reduced glass dimensions, lighter weight and improved design.

**BONDED WIPER SYSTEMS**
- Withstand the stress placed on multifunctional wiper plates.

**BONDED TRIM AND SPOILER FASTENERS**
- Compact fastener and unique bonding process for high performance on small bonded surfaces.
- Invisible fastening system that preserves the aesthetics of the glass.

**LOGISTICS CHALLENGES FACED BY COMBINATION OF CLIPPING AND BONDING EXPERTISE**

Megabrackets have complex geometries and come in a wide range of models, creating logistic challenges. Our fast-curing adhesive and simple process enable in-sequence bonding as close as possible to OEM assembly lines, reducing logistics related costs.

**ASSEMBLY OF VALUE ADD PARTS ON STRUCTURAL ELEMENTS**
- Respect the structural integrity of lightweight materials.
- Eliminates corrosion between two incompatible materials.
- Easy to mount from a variety of positions.

**ASSEMBLY OF TRIM ONTO CAR BODY COMPONENTS**
This ready-to-assemble and invisible solution offers a perfect A-surface while maintaining strength. Because it is compact, packaging and shipping are more efficient and cost effective.

**BONDING ADD-ON ELEMENTS ON BODY-IN-BLACK**

- ARaymond can bond hundreds of studs to a carbon fiber reinforced polymer car body to fasten cables, heatshields, under body streamlining, hydraulic tubing, and more.
- Studs can be bonded in any position, even on vertical and inverted surfaces.

**DEEP ENGINEERING KNOW-HOW**

**TECHBOND™ PUR ADHESIVES**
- Thermoreactive polyurethane adhesives.
- Structural performance.
- Immediate hold and quick curing.
- Clean, precise, and assisted implementation.

**PICK&BOND™: CLEAN, REPEATABLE, AND RELIABLE PROCESS**
- Full control over all bonding parameters.
- Fast cycle times (just a few seconds).
- Easy implementation.
- Manual or automated equipment.

**SCA™ METHODOLOGY**

ARaymond has developed the SCA™ (Systematic & Collaborative Architecture) Methodology to ensure that you receive a complete, high-performance bonding solution that meets your unique needs.

Our Bonding Solutions Architects leverage advanced tools and expertise to bring you a bonding solution you can trust for total peace of mind.