RSR
MULTI-MATERIAL
JOINING
PATENTED

centerline®

HOWMET AEROSPACE

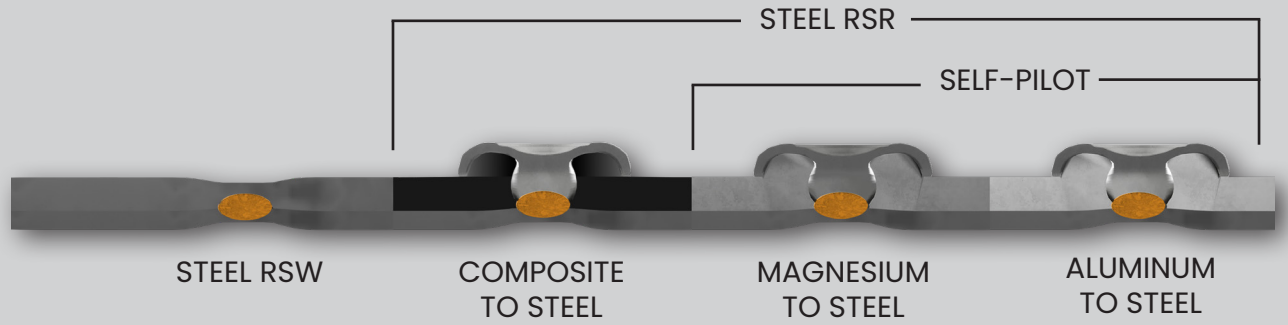
Resistance Spot Riveting

MULTI-MATERIAL JOINING FOR NEXT GENERATION STRUCTURES

RSR™ is a patented single-step multi-material joining technology that provides manufacturers the ability to join a variety of multi-material combinations, including aluminum giga-castings and ultra-high strength steels.

COMBINATION FLEXIBILITY

Seamlessly Transition from Monolithic to Dissimilar Material Combinations

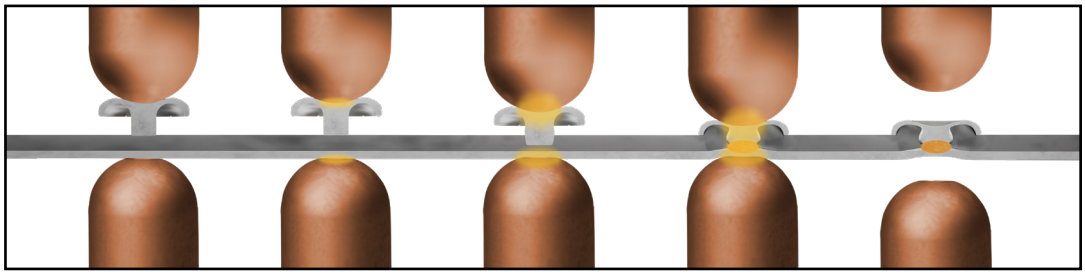


RSR can self-pilot through and join materials that help improve design, manufacturing and safety of the vehicle:

- Aluminum and Magnesium Die Castings
- Aluminum Extrusions
- Ultra-High Strength and Press Hardened Steel
- Unique configurations including 3, 4 and 5 thickness joints

ASSEMBLY STAGES

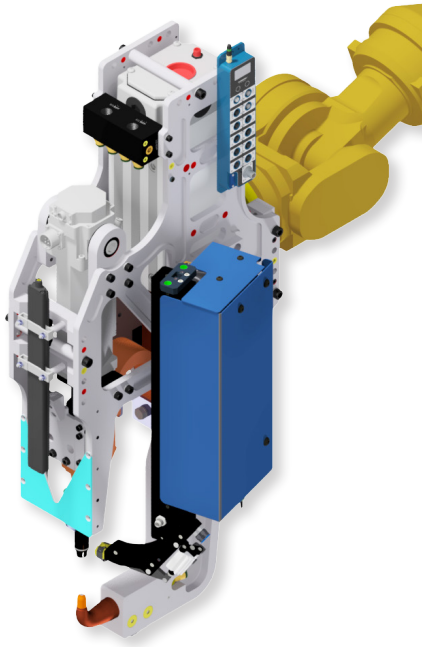
RSR's patented single-step installation process allows for the joining of magnesium and aluminum to steel without the need for a pilot hole, reducing process complexity.



RIVET DELIVERY SYSTEM (RDS™)

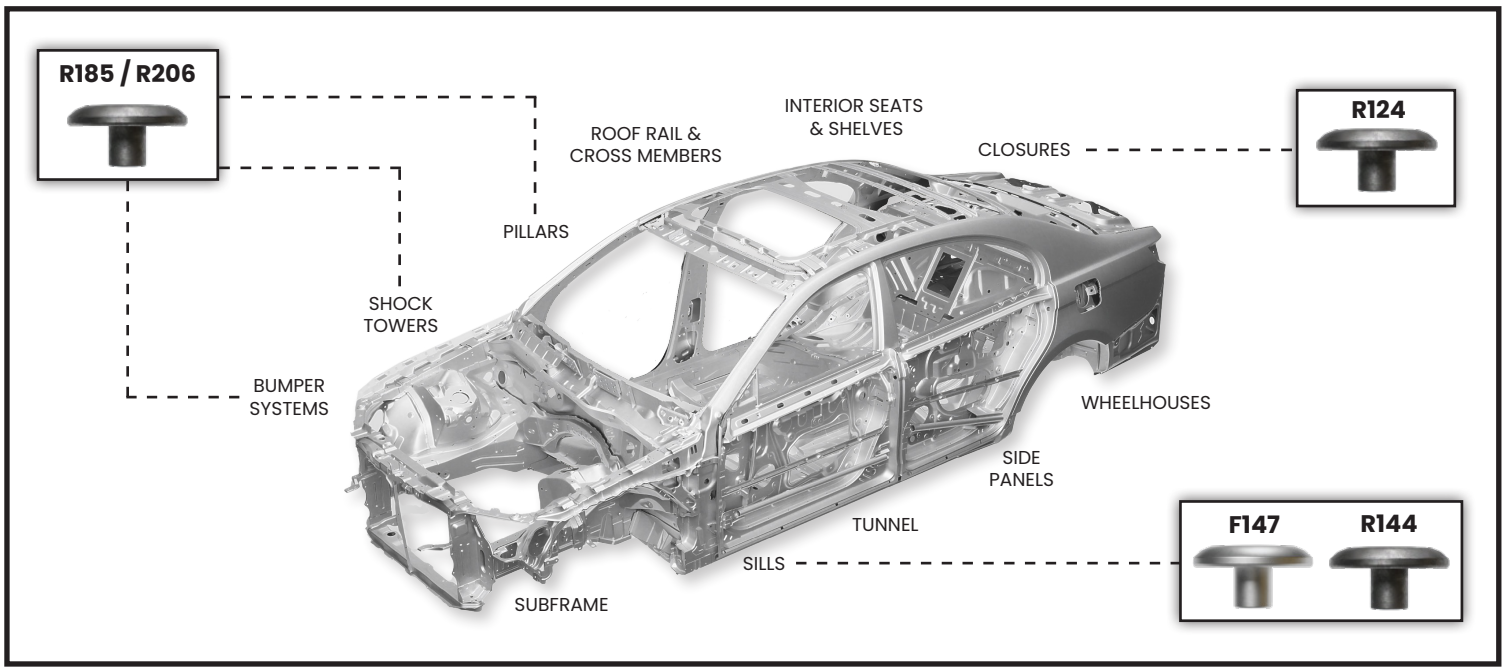


The RDS is the patented feed system that feeds, sorts, and delivers RSR fasteners to the tip of a weld gun. It is engineered to be easily integrated with typical spot-welding equipment – allowing for both resistance spot welding and RSR processes interchangeably at a cycle time of 4- 5 seconds.



Features:

- Rivet Checker ensures correct rivet is used for each application.
- Controlled via Ethernet/IP integrated controller.
- RSR Collet holds rivet concentrically with electrode.
- J-Track transports the required rivets on the weld gun.
- Process monitoring through force-displacement measurements.
- Compatible with all weld gun manufacturers.



RIVET OPTIONS

5 rivet options to cover a variety of joining applications

STEEL RSR®



Available Sizes:
RSR-R124
RSR-R144
RSR-R185
RSR-R206

ALUMINUM RSR®



Available Sizes:
RSR-F174-X

NAMING CONVENTION:

EXAMPLE: RSR - R | 14 | 4 - 5

RIVET MATERIAL
R =Steel
F =Aluminum

DIAMETER OF RIVET HEAD (mm)
12 / 14 / 18 / 20

DIAMETER OF RIVET STEM (mm)
Indicated by Head Diameter

GRIP LENGTH (mm)
Length of Rivet Stem
Application Dependent

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