



Components and System Solutions for Rail Vehicle Applications



ENGINEERING YOUR SUCCESS.

Save time and costs.

With components and system solutions from Parker: everything from just a single source.

Parker exceeds international railway market demands

Parker's product portfolio is regularly updated to conform to the newest international standards and norms. With many products we exceed the newest standards and thereby provide additional safety to our customers.



Fire protection standard EN 45545

Parker offers a multitude of products that have been tested in accordance with the European fire protection standard EN 45545:

- Hoses (hydraulic and pneumatic applications such as braking systems etc.)
- Polyamide tubes (PA tubing for pneumatic applications such as door controls etc.)
- Tube clamps (for hoses and tubes)

Low temperature specifications down to -50°C

The strategic focus of our customers requires ever-increasing capabilities in low-temperature applications. Parker faced this challenge early on and offers a broad product range for fluid technology:

- Tube fittings made of stainless steel
- Hoses
- Tube clamps

Weight reduction

Energy efficiency, higher speed capabilities, extended part and vehicle lifetime and greater fuel efficiency are only some of the positive results of reduced part and vehicle weight in the railway market.

In cooperation with their customers, Parker was able to achieve significant savings in this regard in recent years.

Fluid systems were optimized and adapted to meet higher demands. The scope of the Parker product range is advantageous as well, covering components from all areas.

Parker: all components from one supplier. Available worldwide.

Reference Customers

- Alstom
- AnsaldoBreda
- Behr
- Bombardier Transportation
- CAF
- CRRC
- Deutsche Bahn
- Dellner
- Faiveley
- Knorr Bremse
- MTU
- Newag
- Renfe
- Schaku
- Siemens Rail
- Skoda
- SNCF
- Stadler
- Talgo
- Voith Turbo
- Vossloh


Products	Tube Fittings												Tube Clamps	Machines	Senso-Control			
	EO-Plus	EO2-Plus	EO2-FORM	Tube Clamps	Tubes	Hydrogene Fittings	NSR	STR	NSI	QD	QC	NSA	CAT/4083-3	CAT/4100	LEAF/4002-1	CAT/4100	CAT/4054	
Hydraulics	Cooling	■	■	■	■	■							■	■	■	■		
	Hydraulic Brake System	■	■	■	■	■	■						■	■	■	■		
	Hydrostatic	■	■	■	■	■							■	■	■	■		
Pneumatics	Door System	■	■	■	■	■									■	■		
	Pneumatic Brake System	■	■	■	■	■			■						■	■		
Cooling	Auxiliaries	■	■	■	■	■		■		■	■				■	■		
	Water Cooling	■	■	■	■	■				■		■			■	■		
Fuel	Air Conditioning	■	■	■	■	■			■						■	■		
	Diesel	■	■	■	■	■									■	■		
Sanitation Systems	Sanitary Facilities	■	■	■	■	■									■			
	Water	■	■	■	■	■									■	■		
Control Systems	Pantograph																	
	Seats																	
Service	Hydraulic																	■

■ Water ■ Oil ■ Air

The right answer for any application.

Every Parker component is a quality product.

The combination of these components is the best solution.



EO-PSR

- For metallic sealed connections
- Leak-free, quick and easy assembly

EO-2

- Soft-seal bite type with high vibration resistance
- Leak-free in extreme long term use

EO2-FORM

- High-pressure formed tube generation based on the proven EO-2 technology
- Extreme rigidity and low tightening torques due to cold forming process
- Time-saving and easy to use in comparison to welding or brazing



NSR-Serie

- Flat face valves for no spill connection/disconnection
- Up to 160 bar working pressure for hydraulic brake systems
- Stainless steel construction

NSA-Serie


- Light weight aluminium coupling system with a flat-faced poppet valve
- Reduced spillage during connection/disconnection
- Used for Air Conditioning Systems, Electronic and other Water Cooling Systems

NSI-Serie

- Dry break couplings with flat face valves
- Compact design - ideal for reduced spaces
- Used for Air Conditioning Systems/ Electronic Water Cooling


Tube clamps

- Flame resistant according to EN 45545-2, UL94, BS 6853
- Applicable down to -50°C
- Available for tubes and hoses



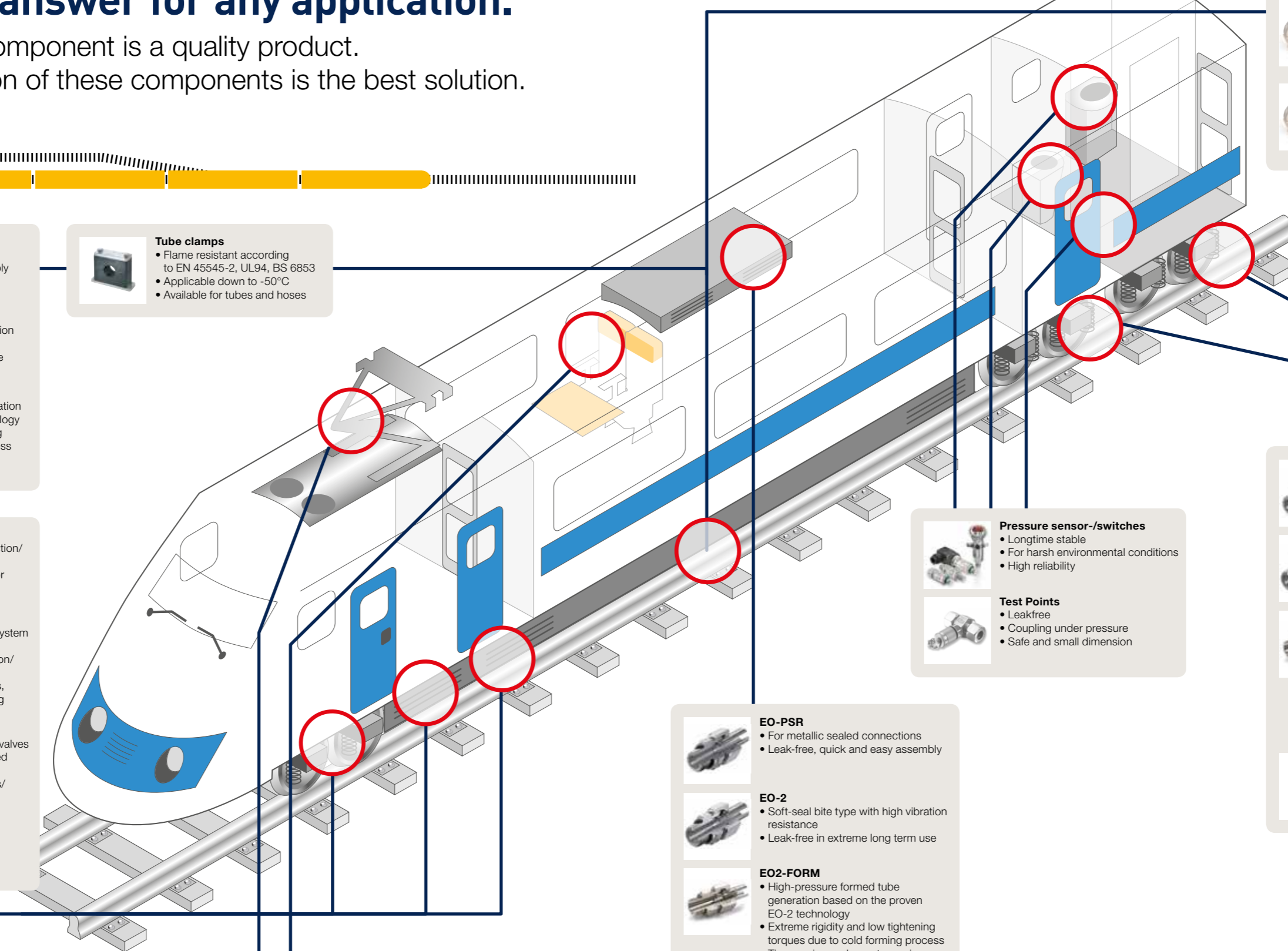

Ball Valves

- Nickel-plated brass ball valves for optimal corrosion and abrasion resistance
- High-security, providing a reliable means of preventing unintended operation
- DVGW Series is perfect for transport of water and gas (-40°C)



Tube clamps

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STR-Serie


- No valves, so very low pressure drop
- Protected interface between male and female connected
- Stainless Steel Construction

QC-Serie

- High flow with low pressure drop
- Easy connection „Push to Connect“
- Protected interface male/female when connected

QD-Serie

- High flow with low pressure drop
- Easy connection „Push to Connect“
- Protected interface male/female when connected




Pressure sensor-/switches

- Longtime stable
- For harsh environmental conditions
- High reliability

Test Points

- Leakfree
- Coupling under pressure
- Safe and small dimension



EO-PSR

- For metallic sealed connections
- Leak-free, quick and easy assembly

EO-2

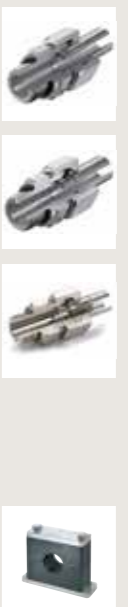
- Soft-seal bite type with high vibration resistance
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EO2-FORM

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Parker – the acknowledged partner for the railway vehicle construction industry.

With its products in many companies in the railway vehicle construction industry Parker is a certified partner. There's no better proof of trust in our quality and reliability.

European standard EN 45545-2:

Firetests and fire side effects. Tests the fire behaviour and fire effluents of the hose assemblies. Test item: The smallest and largest nominal width of a specific hose type.

- Heat generation
- Smoke generation
- Gas analysis

The new European standard EN 45545 has been published July 2013.

New testing requirements have been defined in it depending on vehicle types and individual vehicle functions.

In addition to the former national standards a fire test according to ISO15540 in order to secure

important vehicle functions in case of a fire accident has been added. Parker hoses (e.g. 441RH), available with steel and stainless steel fittings, fulfill these highly demanding requirements without the need for fire sleeves.

As an applicable standard of the EN45545-4 the EN50553 standard is defining important functions in case of a fire.

IRIS (International Railway Industry Standard)

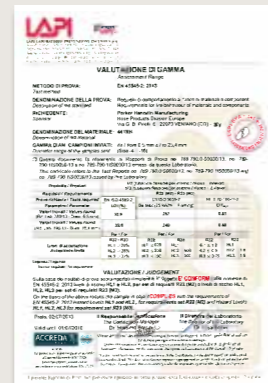
is a globally recognized standard unique to the railway industries for the evaluation of management systems.

IRIS intends to complement the internationally recognized ISO 9001 quality standard.

DIN EN 61373 / IEC61373

DIN EN 61373/IEC 61373 specifies the requirements for testing items of equipment intended for use on railway vehicles which are subsequently subjected to vibrations and shock owing to the nature of railway operational environment.

To gain assurance that the quality of the equipment is acceptable, it has to withstand tests of reasonable duration that simulate the service conditions seen throughout its expected life.



Customized solutions for railway vehicles.

In addition to the standard product range, Parker also supports you in developing individual concepts. Based on your ideas experienced Parker engineers develop the customized products and system solutions that meet your requirements.

Please see some examples of products that have been developed based on the close collaboration between customers and Parker. Be inspired!



Jump sizes

Areas of application

- Include compressed air applications

Customer Benefits

- Avoid multiple fittings combinations (reduced weight)
- Reduced assembly time
- Reduction in potential leakage paths and therefore in consequential costs



Extra long fittings (up to 500 mm)

Areas of application

- Include compressed air applications in the under-floor area
- Feed-through from the inside to the outside of the coach in order to secure the pressure resistance

Customer Benefits

- Avoid tube extensions or adapter combinations (reduced weight)
- Reduced assembly time
- Reduction in potential leakage paths and therefore in consequential costs

System independent connections

Areas of application

- Special solutions for combining different modules, systems and standards (e.g. DIN to SAE)

Customer Benefits

- No need to use standardised modules
- High flexibility
- Avoidance of multiple fittings combinations (reduced weight)
- Reduction in potential leakage paths and therefore in consequential costs



Throttle fittings

Areas of application

- Include compressed air applications (with throttle up to 0.3 mm)
- Adaptation of pressure conditions, including for the protection of sensitive components (e.g. auxiliary equipment systems) from pressure surges



Customer Benefits

- Avoids the need to use a reduction aperture - no additional component
- Simple and safe assembly

Filter fittings

Areas of application

- Compressed air supply for the brake system
- External power supply (air) to prevent failure



Customer Benefit

- Increased safety
- Can be combined with all standard fittings
- Protection for important components from damage caused by contamination

Special solutions (e.g. Y adapter)

Areas of application

- Main air for the brake line – improved flow characteristics compared with W-fitting in order to guarantee fastest possible braking action in an emergency

Customer Benefits

- Optimized flow characteristics
- Avoidance of multiple fitting combinations (reduced weight)
- Reduced assembly time
- Reduction in potential leakage paths and therefore in consequential costs



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