HYGIENIC DESIGN
CSL-RD SERIES STAINLESS STEEL CYLINDERS

Pneumatics
It’s that easy
Well-rounded – Quality without corners or edges

We have totally redesigned our stainless steel cylinders on the inside and out to ensure that everything runs smoothly in your applications. Additional equipment details expand the range of applications, and thanks to special electropolishing the CSL-RD cylinders provide an extremely low surface roughness that is far below the values specified by the EHEDG.

Smooth surfaces and corrosion resistance – in accordance with ISO or in a hygienic design
The CSL-RD does not have any gaps or grooves, has excellent surface roughness values of \( Ra = 0.3 \mu m \) (tube) and \( Ra = 0.6 \mu m \) (cover surfaces), and works with a silicone-free food industry grease. An especially clean tube/cover connection is achieved thanks to an optimized roll-in geometry with a reduction in the gap dimension. Sharp edges and grooves are thus avoided. The plastic slide bearing combines especially light running characteristics with a high resistance to chemicals and a long service life. In addition, the new scraper without an undercut found in the hygienic design CSL-RD prevents the accumulation of dirt and dead spaces on the piston rod.

- Electropolished surfaces
- Plastic low-friction slide bearing
- Silicone-free food industry grease
Designed to meet the highest requirements for corrosion resistance and hygiene

The top choice in a wide variety of industries
CSL-RD series stainless steel cylinders are in their element if the industries and work environment place especially heavy demands on corrosion resistance and cleanliness in an automation solution. They are resistant to chemicals, prevent the accumulation of dirt, and can be cleaned easily and quickly. This makes them an ideal actuator for applications with stringent hygienic demands.

- Food and drink industry
- Chemical industry
- General machine construction

Pneumatics with built-in hygiene
Strict hygiene standards must be fulfilled by automation solutions for the food industry. Laws, directives, and standards set guidelines that must be strictly adhered to during work processes in order to ensure optimum food safety. The CSL-RD is one of the products in our comprehensive range for hygienic pneumatic applications.

- Ensuring food safety
- Hygiene standards and adjusted electrical protection class
- Resistance to chemicals
Three variants, specific designs, and perfect in all details

**CSL-RD ISO (ISO model)**
Thanks to standardized connections and dimensions according to ISO 6432, this variant can be used flexibly in many applications.

**CSL-RD FRE (hygienic design)**
The hygienic design makes this variant perfect for applications in the food industry.

**CSL-RD SRT (mini type)**
The special short version with a base reduced by 37% is ideal for especially tight spaces.

**Variants precisely tailored to the application**
The ISO variant let you use the cylinders in existing applications without any added effort. The mini type requires even less installation space and has a smooth cylinder termination without thread. The hygienic design variant lets you fulfill the strictest demands of the food industry in your automation processes.

<table>
<thead>
<tr>
<th>Designation</th>
<th>CSL-RD ISO</th>
<th>CSL-RD FRE</th>
<th>CSL-RD SRT</th>
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<tr>
<td>Piston diameter</td>
<td>16 – 25 mm</td>
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**Variants**

- ATEX ✔ ✔ ✔
- Food industry grease (silicone-free) ✔ ✔ ✔
- Extendable piston rod ✔ ✔ ✔
- Elastic cushioning ✔ ✔ ✔
- Pneumatic cushioning ✔ ✔ On request
- Temperature range
  -20 ... +80°C with PUR seals* ✔
  -10 ... +150°C with FKM seals** ✔
  -20 ... +80°C with PUR seals* ✔
  -10 ... +150°C with FKM seals** ✔
- Maximum stroke
  Any up to 800 mm (ø 16 mm) / 1100 mm (ø 20 mm) / 1200 mm (ø 25 mm)
- Pressure range
  1.5 to 10.0 bar ✔
  1.5 to 10.0 bar ✔
  1.5 to 10.0 bar ✔

* Scraper material FDA-compliant  ** With position inquiry max. +120°C

* The sensor holders are easy to assemble and secure. An especially light and high-strength plastic prevents slipping and is resistant to all common industrial cleaners. ST4 and ST6 series sensors may be used.

* High-performance pneumatic cushioning can be adjusted quickly and precisely using a hexagon head (2.5 mm). The design of the screw minimizes the accumulation of dirt.
Properties | CSL-RD series stainless steel cylinders

**Advantages at a glance: example – CSL-RD FRE**

- **Smooth surfaces**
  Stainless steel AISI 304, especially smooth surfaces thanks to electropolishing (Ra < 0.6 μm)

- **Cushioning screw**
  Cushioning energy up to 2.7 J at 2 m/s precisely adjustable via 2.5 mm hexagon head for all diameters

- **Scaper without an undercut for FRE variant**
  No possibility for dirt to accumulate, FDA-compliant in accordance with 21 CFR 177.2600

- **Clean tube/cover connection**
  Optimized roll-in geometry, sharp edges/grooves are avoided

- **Grease for food applications**
  NSF H1 registered, FDA-compliant in accordance with 21 CFR 178.3570

- **Plastic bearing bush**
  PEEK high-performance plastic, light running characteristics, long service life

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**Accessories: CSL-RD ISO example**

- **CM2 piston rod mounting**
  Stainless steel

- **ST4/ST6 sensors**

- **QR2 fittings**
  Stainless steel

- **CC04 check-choke valves**

- **CM1 end cover mounting**
  Stainless steel

- **Sensor mounting**
Further contacts:
www.aventics.com/contact

The data specified only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.