Parker Tube Fittings With Superior Plating
Parker Superior Plating Prevents the Ravages of Red Rust Far Longer

In severe marine, mining, industrial and mobile applications, Parker fittings with Superior Plating resist the formation of red rust far longer than the 96-hour SAE requirement and competitive plated fittings.

Unrivaled Protection
Severe marine, mining, industrial and mobile applications have consistently proven our Superior Plating’s long-lasting resistance to red rust formation. Independent testing clearly illustrates it. In neutral salt spray test ASTM B117 tests conducted by accredited Miami Valley Materials Testing Center, Parker plated tube fittings remained free of red rust after 480 hours exposure, substantially exceeding the latest SAE requirement of 96 hours. Competitive fittings exhibited red rust much earlier, as shown in the results (at right). In real-world application, replacement of some or all of the fittings could be necessary, with the exception of the Parker fittings.

Parker tube fittings are an integral component of any leak-free, well functioning–and well maintained–hydraulic system. To protect your operations and save fitting replacement costs, insist on the exceptional performance of Parker tube fittings with Superior Plating.

Superior Plating gives Parker tube fittings unmatched protection against red rust. This proprietary technology enables Parker fittings to withstand the harshest operating environments, particularly those that promote the rapid onset of red rust. In fact, Parker fittings with Superior Plating are proven to resist the formation of corrosion and red rust much longer than five major competitive brands of plated fittings.

The Ravages of Red Rust
Corrosion is the deterioration of a substance, usually a metal or its properties because of a reaction with its environment, as defined by NACE (The National Association of Corrosion Engineers). For the customers and markets that Parker serves, corrosion causes both direct and indirect economic losses.

Red Rust Deterioration of Fittings Can Cause:
- system contamination
- potential leaks
- fitting connection problems
- aesthetic quality concerns from the end user
- maintenance difficulty
- improper function of adjacent components (valves, pumps, cylinders)
- accelerated corrosion of adjacent components

Cost of Corrosion
According to a nationwide report conducted in the USA, the cost of corrosion accounted for a total of $276 billion per year. The specific industrial sectors and associated cost were broken down as follows:

- Utilities 34.70%
- Production & Manufacturing 12.80%
- Transportation 21.50%
- Government 14.60%
- Infrastructure 16.40%
- Hazardous Materials Transportation
- Ships & Aircrafts
- Railroad & Vehicles
- Chemical, Petrochemical & Pharmaceutical
- Food Processing
- Paper & Pulp
- Oil & Gas Exploration
- Petroleum Refining
- Defense
- Nuclear Waste Storage

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Independent Salt Spray Test Shows Parker Plating Is Superior

| HOURS (EXPOSED TO NEUTRAL SALT SPRAY TEST ASTM B117) |
| 0   | 72  | 96  | 120 | 240 | 480 |
| PARKER  |
| COMPETITOR A  |
| COMPETITOR B  |
| COMPETITOR C  |
| COMPETITOR D  |
| COMPETITOR E  |

Pictures and testing were completed by Miami Valley Materials Testing Center – an accredited independent test center.

Tube fittings with Parker Superior Plating clearly have unrivaled corrosion and rust protection. At 480 hours with no red rust formation, the Parker fittings far exceed the 96-hour SAE requirement and resist red rust formation many times longer than the competition.

Additional information, including an interactive timeline of red rust formation on the fittings tested, is available at www.ravagesofredrust.com.
The Extensive Cost of Corrosion

While tube fittings typically are not replaced at the first sign of corrosion, the cost of ownership starts to increase at that point in part due to accelerated corrosion of adjacent components. Thus, corrosion resistance on fittings and adapters can be considered either a long-term investment or short-term price decision.

As seen on the opposite side of this inset, corrosion can migrate to hydraulic hoses and even to the costly hydraulic components. Magnifying this scenario across the maintenance department of a typical mobile equipment or industrial user, the cost implications of fitting corrosion can be substantial.

**SHOP “A” SCENARIO**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity/Rate</th>
<th>Calculation</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapters replaced due to corrosion failure (unable to be re-used)</td>
<td>150</td>
<td>$40/hr. x 15 mins. = $1500</td>
<td>$1500</td>
</tr>
<tr>
<td>Shop maintenance hourly rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average time to replace adapter</td>
<td>15 mins. = .25 hrs.</td>
<td>$40/hr. x .25 hrs. x 150 fittings =</td>
<td>$1500</td>
</tr>
<tr>
<td>Hose assemblies requiring replacement due to adjacent corrosion failure</td>
<td>6</td>
<td>$90</td>
<td>$540</td>
</tr>
<tr>
<td>Average replacement time for hose assembly</td>
<td>15 mins. = .25 hrs.</td>
<td>$90 x 6 hoses x .25 hrs. =</td>
<td>$600</td>
</tr>
<tr>
<td>Hydraulic components requiring replacement due to adjacent corrosion failure</td>
<td>1</td>
<td>$700</td>
<td>$700</td>
</tr>
<tr>
<td>-cylinder replacement</td>
<td></td>
<td></td>
<td>$700</td>
</tr>
<tr>
<td>-remove and replace cylinder</td>
<td>1 hr.</td>
<td>$40/hr. x 1 hr. =</td>
<td>$40</td>
</tr>
</tbody>
</table>

**Total Cost of Adapter Corrosion for Shop “A”**

$2,840

*Additional hidden costs such as make-up oil, shop supplies, transportation and freight/pickup of components are not included.

This conservative cost avoidance analysis reinforces that the corrosion resistance of hydraulic fittings has far-reaching cost implications and should be a primary selection criteria for both equipment manufacturers and those responsible for downstream maintenance.
A Realistic Look at Costly Adjacent-Components Corrosion

Corrosion migrates from component to component in a system, often promoting the need for earlier and more frequent repairs to other fittings and mating components.

In the example shown here, not only has the straight fitting corroded, but there is also strong evidence to indicate that the corrosion is migrating to the hydraulic hose and the cylinder boss, where replacement or repair costs are magnified substantially.
Your complete source for quality tube fittings, hose & hose fittings, brass & composite fittings, quick-disconnect couplings, valves and assembly tools, locally available from a worldwide network of authorized distributors.

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