Forged Fittings
an illustrative comparison

The World Standard
A forged fitting doesn’t always mean quality.

It's what Parker does to the forging that really makes the difference.

To ensure the highest-quality shaped fittings, Parker starts with forgings. They are machined and then plated for corrosion protection. In some cases, components such as swivel nuts, lock-nuts and backup washers are also added to the fittings for increased function and reliability.

See for yourself the Parker advantages over other forged fittings. Once you compare, the choice will be clear.

Conformance to Standards

Industry standards specify the minimum performance requirements of a fitting for safe and reliable operation, dimensional requirements for interchangeability and identification markings for traceability. Parker's forged fittings meet or exceed all applicable SAE, DIN and ISO specifications.

Controlled Manufacturing

Parker has full control over the quality of the total product. Our forgings are made in Parker hot forge facilities where we manufacture and maintain our forging dies and related tooling to ensure consistent quality. The forgings are then machined in state-of-the-art facilities which are equipped with the most advanced machinery, capable of maintaining or exceeding the required dimensional accuracy and surface finish quality.

Machined-surface Finish

Some manufacturers’ forgings are made from inferior raw material which can be difficult to machine. The fact that the forging is difficult to machine may not concern the user, but its consequence - usually a poor surface finish - does affect fitting performance. Parker's forging material is optimized for strength and machinability.
Thread Quality
Rough, jagged and torn threads result in increased assembly friction and reduced clamping load for a given tightening torque. Low clamping load results in premature loosening of fittings which will eventually cause leakage and downtime. Parker, through extensive machining experience, has developed processes that result in smoother and more consistent thread finishes.

Sealing Surfaces
A high-quality surface finish is also critical for sealing surfaces. Whether it is a metal-to-metal seal, as in 37˚ flare fittings, or an elastomeric seal, such as in O-ring Face Seal (ORFS) fittings, a smooth sealing surface is important for making intimate contact and preventing leakage or premature wear of the O-ring. Parker further maintains the integrity of critical surfaces by applying protective plastic caps to those fittings that are more prone to shipping and handling damage.

Captive O-ring Groove (ORFS Fittings)
O-ring Face Seal (ORFS) fittings (per SAE J 1453) are very reliable and leak-free, but are not very effective if the O-ring is not properly retained in the groove or is missing. Captive O-ring groove is a design developed for use on these fittings. It positively retains the O-ring into the groove prior to assembly. Parker pioneered the captive O-ring groove design and has promoted it to industry standardization committees for improving the reliability of the ORFS fitting. Unlike Parker, not all manufacturers offer captive O-ring groove.

Crimp Swivel Nuts
Crimp nuts provide a design option and manufacturing option used to achieve a swivel connection on the end of a fitting. A high-quality crimp nut that is properly designed and assembled is essential in preventing a weak link. If the nut is not properly designed and assembled, it tends to creep after tightening. Creep results in premature loosening over a relatively short period of time, sometimes even before system pressure is applied. Parker’s crimp nuts are extensively tested for optimum performance and are assembled with state-of-the-art equipment for consistent performance.

Back-up Washer & Locknut
The back-up washer and locknut are critical components of an adjustable style fitting. The washer provides a sealing surface and prevents the extrusion of the O-ring while the nut tightens the fitting into the desired position. Proper washer tightness and location are critical for reliable performance. A loose washer results in premature extrusion of the O-ring, leading to leakage. Improper positioning of the washer may cause O-ring pinching during assembly, again leading to leakage. Parker carefully monitors the quality and assembly of locknuts and back-up washers for highly reliable and consistent performance.
Training and Technical Support
Training and technical support is essential to the proper application of almost any product. Parker offers system design assistance, prototyping, a three-year leak-free guarantee through the Genuine Parker Parts (GPP) program, on-site assembly and classroom training through the Dry Technology program, a CD catalog, 3D models of our fittings, product prints from inPHorm® program and more. We also have the widest range of training and technical support available from any fitting manufacturer.

Corrosion Protection & Friction Control
Carbon steel fittings are usually protected from corrosion by plating. Industry standards usually require a minimum of 72 hours without any corrosion when tested in accordance with ASTM B117. As shown above in this actual test comparison, long-term corrosion testing proves that the Parker fitting will be around for a long time after the competition's fitting deteriorates due to red rust.

In addition to corrosion protection, the plating also plays a critical role in the proper assembly of the fitting. Many manufacturers often overlook this key plating feature. Parker's plating processes have been optimized, through extensive testing, for proper assembly and corrosion resistance.

Research and Development
Parker has extensive in-house engineering, product development and testing facilities. Products are constantly being developed and the performance capabilities of Parker's and other manufacturers' fittings are continually monitored. In fact, an entire team of dedicated engineers and technicians are assigned to each product line.

Distributor Locations and Field Support
With a worldwide network of distributors, ParkerStores and Parker Service Centers, sales force and application engineers, Parker is strategically positioned to provide premier customer service.
The Forged Fitting

Parker does it all - from start to finish.

1. The forge wire, which is received from the steel mill in large rolls, is first straightened and then cut into short lengths called billets.

2. The billets are heated and forged into die cavities using high force presses. This results in an arrangement containing multiple forgings called a platter.

3. The individual forgings are trimmed from the platter with trim presses and the excess material, often referred to as flash, is returned to the steel mill for recycling.

4. The individual forgings are de-scaled and machined into the required fittings.

5. The fittings are plated for corrosion protection and components added if necessary.

The Forged Fitting
Your complete source for quality tube fittings, hose & hose fittings, brass fittings & valves, quick-disconnect couplings, and assembly tools, locally available from a worldwide network of authorized distributors.

Fittings & Couplings:
Available in inch and metric sizes covering SAE, BSP, DIN, GAZ, JIS and ISO thread configurations, manufactured from steel, stainless steel, brass, aluminum, nylon and thermoplastic.

Hose, Tubing and Bundles:
Available in a wide variety of sizes and materials including rubber, wire-reinforced thermoplastic, hybrid and custom compounds.

Worldwide Availability:
Parker operates Fluid Connectors manufacturing locations and sales offices throughout North America, South America, Europe and Asia-Pacific.

For information, contact the nearest Regional Sales Office listed, or call toll-free 1-800-C-PARKER (1-800-272-7537).

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