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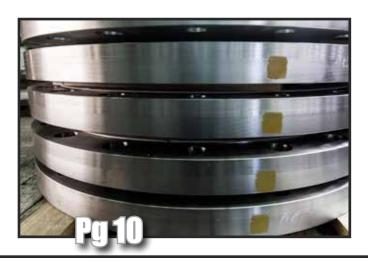
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OEMs benefit when a single-source parts model extends from design to manufacturing across a range of materials.

For OEMs of agriculture, construction, mining, oil & gas, off-road, forestry, and heavy-duty trucking equipment, there can be thousands of parts to integrate into a single vehicle. These parts include the hydraulic components that provide the force or power for lifting, pushing, digging, dumping, and braking. Because of their complex machining needs, OEMs rely on preferred suppliers of hydraulic parts and assemblies to design and manufacture these critical components, which must be high quality, cost-effective, and delivered on time to remain competitive.

The existing process typically requires working with multiple vendors based on their specialization and the value-added services they provide from coatings to assemblies. Establishing these trusted relationships and orchestrating parts needs across multiple vendors takes time, consuming considerable organization resources and adding costs to OEM production.

The OEM's expanding demand for supplier support has resulted in manufacturers positioning themselves to be one-stop parts shops, offering a menu of complementary parts spanning different materials such as metal and plastic. A consolidated offering can help streamline parts sourcing for OEMs and provide better support to them as their product needs evolve.

Premier Hydraulics is one such vendor. The company, a Tier 1 preferred supplier of hydraulic components and assemblies to OEMs, produces standard hydraulic fittings, valves, manifolds, hose connectors, and flanges in large quantities. In addition, the company specializes in custom-engineered products, meaning it can create assemblies or sub-assemblies with combined components.

"OEMs today want quality parts at a competitive price that are delivered on time. Beyond that, many

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also want value-added services like expert engineering, design support, and the ability to provide custom parts such as manifolds, flanges, valves, and fittings in various materials. Depending on how it is designed, the custom component can become a part of a kit, sub-assembly, or assembly of complete product," says Dinitrise Hicks, a Premier Hydraulics Sales Manager in Farrell, PA.

According to Hicks, OEMs often request custom parts, such as hydraulic fittings, that vary from SAE standards in size, thread size, pitch, or materials. Custom parts may also be necessary if OEMs require a unique part function or part combination.

She notes that Premier Hydraulics manufactures custom components in low to high volumes domestically. The rigorous process involves verifying OEM requirements, providing design and engineering support, prototyping, and conducting thorough quality and production checks.

Manufacturing Value-Added Parts
According to Hicks, a common question asked by
OEMs of their parts manufacturers is, "Can you
make this part?" Often behind this question is an
OEM's perception that the parts vendor can only
work with one material or provide limited or no
value-added services. Now, rather than losing
a bid and causing the OEM to have to find yet
another parts vendor, Premier Hydraulics is in a
position to fulfill the order need regardless of the

parts material or specialized handling needs.

To meet OEM's need for value-added custom parts, Premier Hydraulics dramatically expanded its capabilities after the company was acquired in late 2022 by PTR Group, a leading contract manufacturer of components and subassemblies.

PTR Group has embarked on a strategic campaign to acquire companies offering complementary parts manufacturing differentiated by material and product type to broaden the breadth of their overall parts portfolio. As a result of their acquisition strategy, PTR Group now offers OEMs a wide range of parts, including metal components and subassemblies. They can also custom manufacture precision thermoplastic injection mold tooling, zinc die-cast mold tooling, and molded plastic components.

Within each of these areas, PTR Group can offer OEMs a range of complementary value-added parts and services that go beyond just manufacturing. This includes in-house part and tool design, tool build, complex assembly, and testing.

For OEMs, the ability to manufacture inject molded plastic parts can add significant value, particularly when customized to the application. For OEMs, plastic fittings provide a wide range of advantages. Plastic fittings are inherently resistant to corrosion, so can be low maintenance and suitable for use in environments where metal fittings can corrode over time. The fittings are lightweight and often cost less than metal components.

In addition, plastic fittings may help reduce noise and vibration transfer in hydraulic systems compared to metal fittings. Some plastic materials are also non-conductive, which can be beneficial in applications where electrical conductivity is a concern.





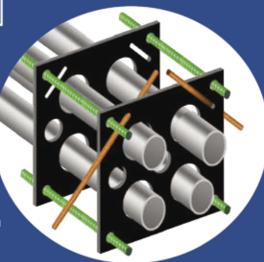
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With an increasing need for plastic parts, PTR Group's acquisition strategy now provides Premier Hydraulics and OEMs with additional capabilities through a seamless working relationship with "sister company" PTR Tool and Plastics. The company, which offers precision-engineered and difficult-to-mold parts for the automotive, electronics, aerospace, telecommunications, consumer, and disposable medical supply industries, designs and builds all its own tooling in-house.

According to Hicks, Premier Hydraulics has received an increasing number of inquiries regarding plastic parts after announcing the capabilities of the PTR Group. In a recent example, Premier Hydraulics was asked to assist American Cap, a valve protection device and cylinder component manufacturer in the PTR Group, to recertify one of its customer's hydraulic valves protected by injection molded plastic in two weeks.

Given its experience certifying hydraulic parts for its large Tier 1 customers, Premier Hydraulics was able to disassemble the valve, conduct the high-and low-pressure tests required, and then reassemble and ship the part within the customer's expedited timeframe.

When the single-source parts model extends from design to manufacturing across a range of ma-

terials, a parts provider can play a pivotal role in an OEM's parts supply chain. This can streamline purchasing, and foster greater collaboration in parts design, engineering, manufacturing, assembly, and testing. The approach can provide a quick response to evolving parts needs through product design and manufacturing, while achieving substantial cost savings through manufacturing synergies.

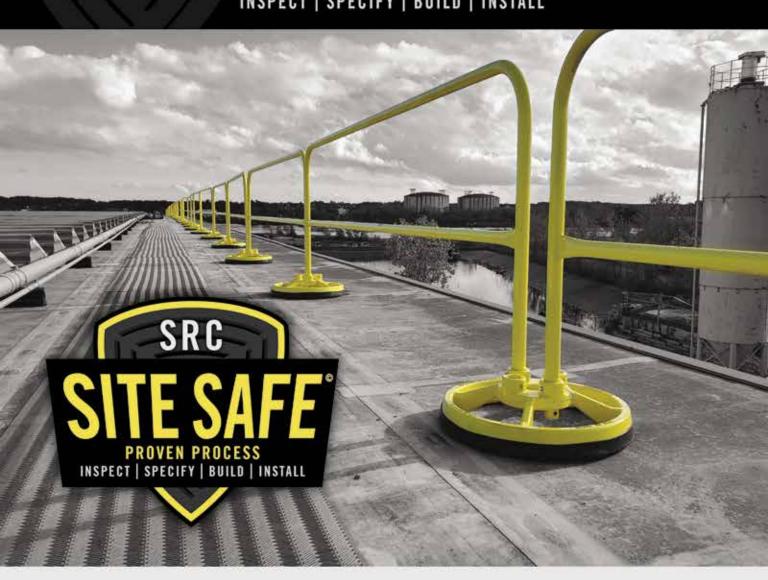
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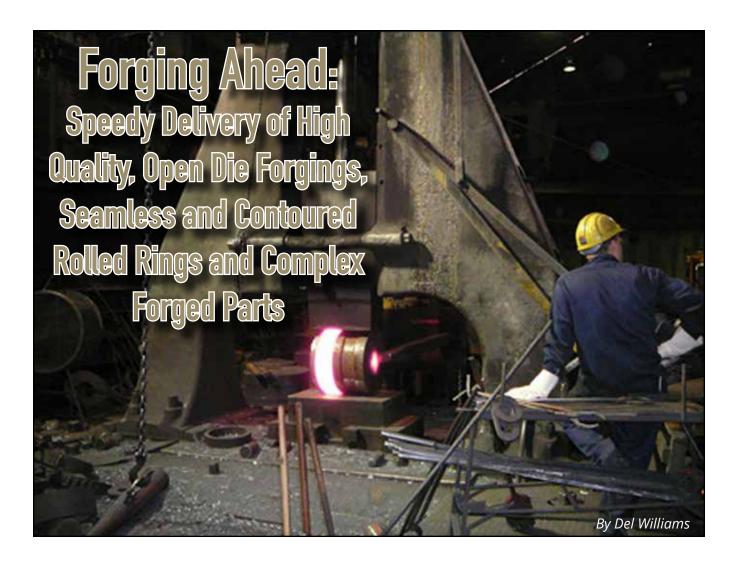
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Specialty forgers can manufacture custom, high-quality, seamless rolled rings in a variety of materials and finishes in as little as eight weeks.

A wide range of industries such as aerospace, automotive, mining, oil and gas, machinery manufacturing, and power generation rely on seamless rolled rings, which are critical components used for gears, turbines, bearings, clutches, couplings, drives, flanges, valves, machines, robotics, and other forged shapes.

Seamless rolled rings have a greater lifespan than other products due to their strength and durability, and are less prone to cracking or warping, making the option ideal for critical components requiring high tensile strength. Seamless rolled rings resist wear, fatigue, and stress, enabling better performance. Depending on the metal and alloy, the rings are also resistant to thermal and chemical damage, which further extends longevity while reducing the need for maintenance, repair, and replacement.

Obtaining large seamless rolled rings in a timely manner remains a significant challenge, however.

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Currently, it may take many months to receive the forged components after placing an order. This delay can have a severe impact on the production and maintenance schedules of industrial firms that depend on replacement parts.

Rings are typically provided with a rough surface finish, which necessitates the use of CNC machining to achieve the required level of smoothness. This poses a challenge for machine shops with a high workload, as allocating machine time for finishing inevitably leads to a decrease in production speed and an increase in costs, ultimately impacting the end-use cost or profitability.

Fortunately, manufacturers can rely on industry-leading forging specialists capable of producing large, custom, seamless rolled rings, and contoured seamless rolled rings with the required surface finish in under two months. One example, All Metals & Forge Group, an ISO 9001:2015 and AS9100D manufacturer of custom and standard open die forged parts and seamless rolled rings can cost-effectively deliver these components with the required finish within 8-10 weeks.

The range of forged products includes rings, discs, hubs, blocks, shafts (including step shafts or with flanges), sleeves, gear blanks, cylinders, flats, hexes, rounds, plates, and custom shapes. Carbon steel, alloy steel, stainless steel, nickel, titanium, and aluminum are among the materials used for forging. These forgings meet rigorous industry specifications such as ASTM, AMS, AISI, ASME, Boeing, SAE, GE, DIN, ASME B 16.5, ASME B16.47, and API 6A.

Numerous industries can reap the advantages of an accelerated process for obtaining flawless rolled rings. This includes sectors like aerospace, aircraft, automotive, chemical, construction, defense, energy, engine and turbine, food processing, hydro, metalworking, mining, oil and gas, petroleum, power generation, pulp and paper, and shipbuilding.

The Benefits of Open Die Forging
One of the chief advantages of open die forging is
the customization it offers in the seamless rolled
ring manufacturing process.

According to Lewis Weiss, President of All Metals & Forge Group, open die forging is ideal for providing large, custom parts. "We can produce seamless rolled rings or contoured rolled rings up to 200 inches in outside diameter, and custom forgings up to 40 feet long or 80,000 lbs.," says Weiss. All Metals & Forge Group has been manufacturing and selling open die forgings and seamless rolled rings for more than 50 years.

While open die forging is typically associated with larger, simpler-shaped parts like bars or blanks, the process enables the creation of "custom-designed" metal components.

According to Weiss, open-die forging facilitates the production of seamless rolled rings to exact specifications with optimized mechanical properties and structural integrity. He notes that the

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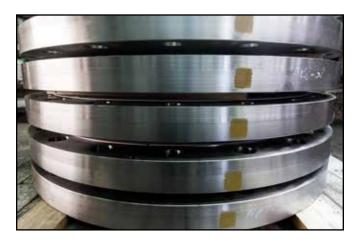
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rings can be produced in a variety of alloys, sizes, and shapes specific to the requirements.

The forging of the rings is also cost-effective since the process reduces material waste and manufacturing costs. Since the rings are constructed from a single metal piece using a specialized ring rolling machine, there is no need for welding or assembly, saving time and labor. The seamless rolled rings are also more structurally sound because they create a circular grain flow in the material, following the shape of the ring, which increases strength and integrity, creating a refined grain structure. This can enhance the material's fatigue resistance and overall performance, resulting in a stronger, more durable final product compared to other methods of ring making, such as cutting from plate.

Near Net Shape Parts with Finer Surface Finish Typically, when seamless rolled rings are forged, they are often left in an unprocessed state with a rough surface measured at approximately 500 RMS. As a result, significant CNC machining time is required to achieve a smoother surface for the finished machined part. This poses a challenge for machine shops as the allocation of machine time for finishing these rough parts directly affects production efficiency and delivery time to the client.

To optimize efficiency and reduce costs, All Metals & Forge Group frequently provides near-net-shaped forged parts with more refined surface finishes.

"Typically, we provide a 250 RMS surface finish. We can even provide 125 RMS. We can also drill holes and do contour forgings as needed," says Weiss.

"Some forge shops only offer a raw unmachined part. We produce a rough machine part, saving machine shop time and equipment wear and tear since we have already taken off the first rough cuts off the ring or forged parts," he adds.

In addition, the company conducts ultrasonic testing at zero expense to the customer to guarantee the absence of internal cracks, pits, or voids. This instills the utmost confidence in the quality of the parts, according to Tim Grady, Management Consultant for All Metals & Forge Group.

"In many cases, All Metals & Forge Group can offer ultrasonically tested parts that are more affordable than raw forged rings," says Grady.

#### Streamlining Delivery

In today's market, the procurement of forged seamless rolled rings usually takes a considerable amount of time, from 20 weeks to as much as a year, as there are long lead times in receiving the necessary steel from mills.

"When replacement parts are required, a delay of a year or more is not acceptable," says Grady. "Even 20+ weeks is a serious issue."

To expedite the process for customers, All Metals & Forge Group has established strategic partnerships within the industry, enabling the company



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to deliver many custom forgings in a timeframe of eight to 10 weeks. Furthermore, to minimize any potential production downtime for machine shops, the company strives to provide accurate quotes within 48 hours.

#### Positioning for the Future

The need to acquire seamless rolled rings will only increase in industries that require high-quality custom-forged components that can safely withstand extreme forces with minimal repair or replacement. In these cases, working with an expert forger who can expedite the process will convey a significant advantage.

For more information, contact All Metals & Forge, LLC at 75 Lane Road, NJ 07004; (973) 276-5000; Canada 416-363-2244, toll-free (800) 600-9290; fax (973) 276-5050 or visit

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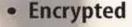


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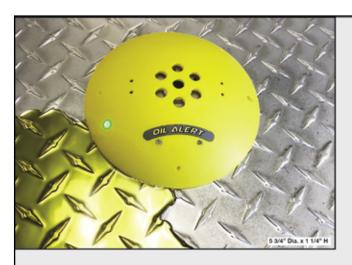
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