CORPORATE PROFILE

EVOLVING INNOVATION

Greene Tweed

www.gtweed.com

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Greene, Tweed's Senior Leadership Team *(Left to Right)* – Michael Delfiner, *President*; Simon Hartle, *General Manager, PetroChem & Power*; Jonathan Pledger, *Vice President Asia (seated)*; Gary Appleby, *Vice President and General Manager, Aerospace (seated)*; Kevin Lukiewski, *Senior Vice President, Chief Financial Officer and General Manager, Semiconductor & Solar*; Henry Stueber, *Senior Vice President, Customer Operations*; Ron Callaway, *Vice President and General Manager, Oilfield*; Donna Torelli, *Vice President and Executive Director Human Resources (seated)*; Neil Mendes, *Senior Vice President (seated)*

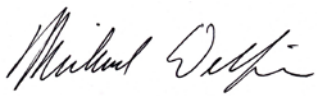
A MESSAGE FROM THE PRESIDENT

Today we celebrate 150 years of unrelenting change. Greene, Tweed began in 1863 as a distributor of hardware and mill supplies. Since then, we have grown to become a global manufacturer of high-performance, highly engineered solutions. Making this transition has demanded a constant balance of innovation and resilience in the face of new challenges. And three key elements have formed the basis of this equilibrium: strategic relationships which give us insight into critical industry challenges, investment in developing our technical capabilities, and inspired employees who turn those capabilities into optimal solutions. We believe that by continually strengthening these crucial elements, we can extend our history of innovation and position ourselves for a strong future.

The industries we participate in – aerospace, semiconductor, oilfield, petrochemical and power – are constantly adapting to new challenges, and Greene, Tweed has been working with them for many decades. Today, our thermoplastic composites are helping the aerospace industry meet efficiency targets through lighter aircraft. Our plasma-resistant sealing systems are allowing semiconductor fabs to use more productive – but harsher – processes to pack greater function into smaller chips. Rising world energy demand is challenging the oil and gas industry to expand into extreme environments, and Greene, Tweed solutions enable them to do so with maximum safety and performance. Once extracted, we are facilitating greater efficiency, reliability, and safety in processing plants. In each case the solutions we provide expand the limits of our customers' operations.

Critical to achieving these solutions has been investing heavily in our capabilities and the people behind them. Each Greene, Tweed product begins with a material, and we have continually researched and developed lighter, stronger, cleaner, and more heat-resistant compounds. Cutting-edge design resources allow our engineers to provide solutions meeting exact customer specifications. And comprehensive manufacturing affords the flexibility to satisfy diverse applications. These capabilities could not be maximized without a highly inventive and driven workforce leveraging them. In today's high-speed world, the ability to generate advanced solutions requires a deep understanding of both our customers' needs and the technologies that best satisfy them. This crucial synergy enables us to respond to changing industry demands, and is essential to our shared success.

Looking ahead, we cannot know exactly what breakthroughs the future will bring. Already Greene, Tweed is an organization that has weathered the birth of the assembly line, the internal combustion engine, space travel and the personal computer. This history has taught us to adapt in the face of change, and to remain resilient in times of hardship. For that reason, I am confident that the same elements which have allowed us to innovate for the past 150 years will continue to ensure our success. By remaining focused on partnership with our customers, expanding and improving our core capabilities, and investing in our people and culture of innovation, we will be prepared for a bright future. I look forward with excitement to starting down the road toward the next 150 years.



Michael Delfiner, President

1863 – 1919: THE BEGINNING

Greene, Tweed's logo during the 1870s appeared to feature one of their popular early products, the Blake's Belt Stud.

Greene, Tweed & Co. was started in 1863 by J. Ashton Greene and his nephew Henry Tweed. Advertisements in the New York City Directory described the firm as a distributor of hardware and mill supplies located at 10 Park Place, just west of city hall.

Two years after opening, Greene, Tweed was trading throughout the northeast. In coming years, the company would diversify its product line to include leather goods such as harnesses and buggy whips. It would also distribute the "Blake's Belt Stud," a metallic fastener used to secure the ends of leather belting. Touted as being "specially compounded," the Blake's Belt Stud was more durable than common brass and required less frequent replacement. This long-lasting quality would become a signature of Greene, Tweed products in the future.

By the 1880s, advances in industry were driving up operating temperatures in plant equipment. In response, Greene, Tweed purchased a seal manufacturer, and in 1891 the company launched its first sealing solution. Designed for use in hot steam service, it was self lubricating and stayed soft while other seals hardened and failed. It was a product without rival at the time, and after a period of slow acceptance, the seal became an early success for Greene, Tweed.

the years 1863 – 1919

1889

Flax and cotton were common materials in seals at the time, including those distributed and sold by Greene, Tweed.

1895

Made by the Ithaca Drop Forge Co., the Champion Chain Wrench was used for "gripping, turning or holding pipe, bolts, shafts or round surfaces."

1903

A vast industrial complex on the Brooklyn waterfront, the Bush Terminal was the first integrated manufacturing and warehousing center of its kind in New York.

1913

The "New Improved Rochester Automatic Lubricator" was a force-feed lubricator used in steam engines and pumps.

1863

GREENE, TWEED BEGINS IN NEW YORK CITY

The founders of Greene, Tweed: J. Ashton Greene (left), Henry Tweed (right) and John W. Greene (center). John Greene was J. Ashton's son and joined the company in 1883.

1920 – 1959: FOCUS ON SEALS

Greene, Tweed's headquarters in 1945 was located in North Wales, PA – a small farming community north of Philadelphia.

Beginning in the 1920s, industry shifted away from steam power and towards electric-driven equipment. Greene, Tweed responded to the change by developing more specialized seals. Each was still internally lubricated, but with a compound specific to the type of service. In 1928, the seals received an unexpected endorsement from Admiral Richard E. Byrd: On expedition to Antarctica, he used them in his ship, The City of New York.

As the United States entered World War II in 1941, the demand for manufactured goods such as seals rose sharply in the nation. To accommodate the increase, Greene, Tweed established a new rubber department. Supplying seals, wrenches and hammers to the military, the company expanded significantly during wartime. By 1945 it had outgrown its Bronx, NY facilities. All activity was moved to a larger site in North Wales, PA, and the New York plant was closed that year.

The following year, Greene, Tweed launched one of its greatest innovations – the G-T® Ring. Featuring a unique "T" shape, it eliminated the spiraling, rolling, and extrusion that O-rings normally suffered in high-pressure applications. Thus able to withstand more demanding applications, the G-T Ring found widespread use on military tanks and in the boilers of Navy ships.

the years 1920 – 1959

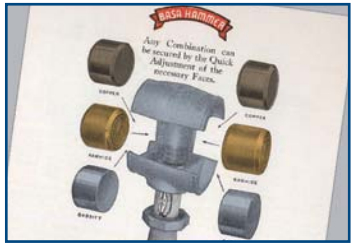
1927

The Tidey Furnace Clock opened the draft of a furnace at a pre-determined time each morning.

1928

In 1928, Greene, Tweed seals received an unexpected endorsement from Admiral Richard E. Byrd who used them in his ship, The City of New York, while on expedition to Antarctica.

1933



The Basa hammer was developed for industries where hammer blows could not damage materials. The interchangeable faces were made of rawhide, copper or babbit.

1946

The wide base "T" geometry of the G-T Ring eliminated the problems of seal roll and spiral failure common found in O-rings.

1945

GREENE, TWEED RELOCATES TO NORTH WALES, PA

In 1945, Greene, Tweed outgrew its Bronx, NY facility and moved to North Wales, PA. Once relocated, the company also established a new rubber department.

1960 – 1979: NEW MARKET, NEW HEADQUARTERS

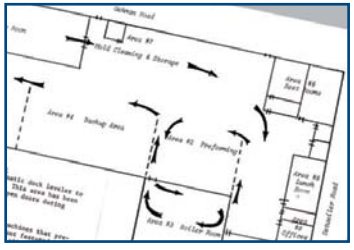
Greene, Tweed first entered the Aerospace market with AGT Rings, but has since engineered numerous designs optimized for specific applications.

In 1964, Greene, Tweed entered the aerospace industry. For years airlines had been struggling with the seals on their landing gear, flight-control actuators and brakes. Greene, Tweed made a successful bid to replace them with a new product – the AGT® Ring – and soon they were proliferated throughout the fleets of PanAm, Eastern and United. Following this success, the company earned specification on the USAF F-4 Phantom program. This early win would ultimately spur inclusion of Greene, Tweed seals on over 90% of commercial aircraft.

Throughout this period the company continued to grow, and by 1970 it was too large for the North Wales plant. A new 30-acre site was purchased in Kulpsville, PA, and a 57,000-square-foot, air-conditioned facility was constructed. At first housing only synthetic rubber production, a mill room, machine shop, offices and a laboratory were added from 1973 – 1976. This trend would continue until 1987 when the North Wales plant would be sold, and Greene, Tweed declared Kulpsville its global headquarters.

the years 1960 – 1979

1970



Greene, Tweed's new facility in Kulpsville, PA included such modern amenities as air conditioning. An open house was held on 13, June 1970 after construction was completed and before employees had officially moved in.

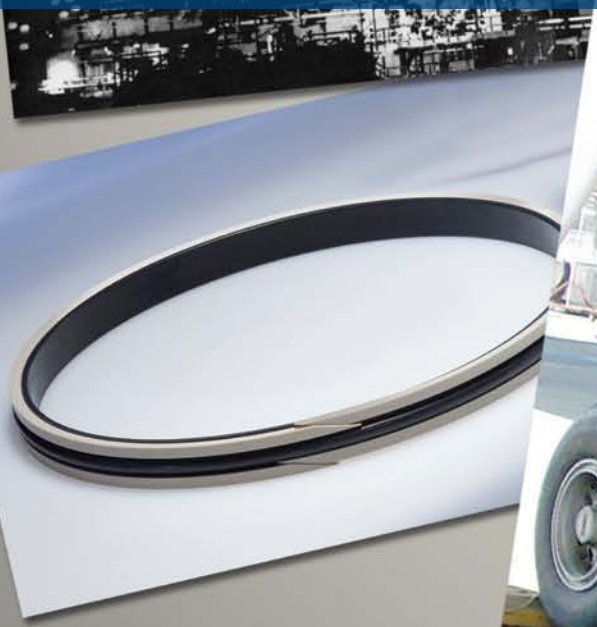
1973

The machine shop and mill room were moved to the Kulpsville, PA facility three years after Greene, Tweed finished construction.

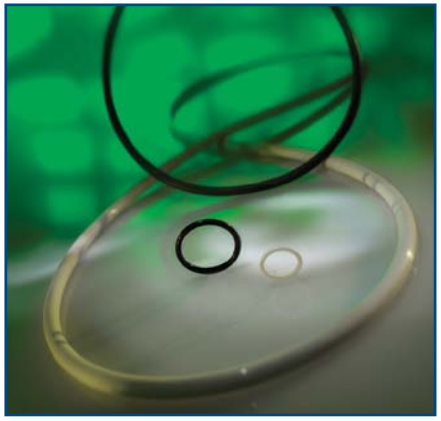
1966

GREENE, TWEED EARNS SPECIFICATION ON THE F-4 PHANTOM

The U.S. Air Force's F-4 Phantom program was the first to specify AGT® Rings throughout the aircraft. The program ran from 1958 – 1981, with over 5,000 jets built.



1980 – 1999: HIGH-PERFORMANCE SOLUTIONS



Chermaz perfluoroelastomers could withstand a wide range of corrosive media, outperforming past sealing options.

During the 1980s, Greene, Tweed began growing its global capacity. An office was opened in Germany in 1981, and by 1994 the company's international footprint included the United Kingdom, France, Japan and Singapore. Domestically, a full-service manufacturing site was also established in Houston, TX.

As it added locations, Greene, Tweed similarly broadened its product portfolio. The purchase of plastics company Advantec in 1982 enabled the manufacture of Arlon® engineering thermoplastics. And in 1987, Greene, Tweed launched Chemraz® perfluoroelastomers. Providing broad-spectrum chemical resistance and a wide operating temperature range, Chemraz would become a flagship product for the company. It also brought new opportunities in the oilfield, petrochemical and semiconductor industries.

Building on this achievement, in 1994 Greene, Tweed established a class 100/1000 cleanroom in Kulpsville. Constructed for manufacturing semiconductor seals, it was one of the first of its kind in the nation; a second cleanroom was opened in Selma, TX four years later. In 1996, Greene, Tweed launched Seal-Connect® electrical connectors for oil drilling. The same year, WR® and AR® thermoplastic composites were developed for the petrochemical industry.

While important in their own right, each product demonstrated a crucial shift towards high-performance, engineered solutions at Greene, Tweed.

the years 1980 – 1999

1986

Greene, Tweed's most popular engineering thermoplastic was injection-molded Arlon 1000. Featuring lightweight strength, broad chemical resistance, and a wide operating temperature range, Arlon was utilized in every market. Common applications included back-up rings, seal assemblies, and electrical connectors.

1994

A class 100/1000 cleanroom was established in Kulpsville, PA in 1994. Designed for manufacturing semiconductor seals, it was the first of its kind in the United States.

1996

Seal-Connect electrical connectors were launched in 1996 for the oilfield industry. Utilizing Arlon engineering thermoplastic to isolate the conductor, they were more durable than previous glass-to-metal connectors.

1987

GREENE, TWEED INTRODUCES CHEMRAZ® PERFLUOROELASTOMERS

Chemraz® perfluoroelastomers provided broad-spectrum chemical resistance, withstanding most acids, solvents, amines and other harsh media.

2000 – 2009: ADVANCES IN TECHNOLOGY

The Asia Engineering Center in Kumamoto, Japan, was a 10,800 sq. ft. facility dedicated to providing engineering support for the semiconductor industry.

The early 2000s were marked by strategic expansion into Asia and Europe for Greene, Tweed. Offices were opened in the Netherlands, Italy, Korea, Israel and Taiwan. And from 2004 – 2005, two new engineering centers were established: a Research and Development facility in Switzerland, and the Asia Engineering Center in Japan. Additionally, new advances were made in nearly every market.

In semiconductor, Extensis® molding capability enabled the production of extremely large seals for the manufacture of flat panel displays. Xycomp®, a high-performance thermoplastic composite, was developed in 2003 for the petrochemical and aerospace industries. Featuring the toughness of metal at a fraction of the weight, its launch precipitated the development of two new molding techniques. The first, Techna3™, came online in 2008 for making pressure sleeves, pump housings and containment shells.

Additional achievements included ProTechna® encapsulation and Enduro® coatings. When paired with existing materials, they provided extra protection for sensitive components and reduced friction, respectively.

Together, this collection of advances solidified Greene, Tweed's focus on highly engineered solutions for extreme applications – a strategy that continues to drive the company today.

the years 2000 – 2009

2003

Xycomp thermoplastic composite was developed as a metal alternative. Up to 60% lighter than metals, it helped lower aircraft weight, reducing fuel burn and emissions. It also featured exceptional impact and fatigue resistance for extended service life.

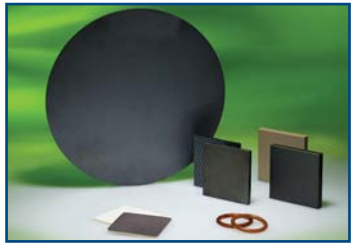
2007

Extensis molding enabled the production of large seals for FPD (flat panel display) manufacture.

2008

Techna3, a molding technique, was developed for producing tubular shapes out of composites.

2009



Enduro coating reduced sticking force between interfaces and wear caused by friction.

2000s

GREENE, TWEED EXPANDS WORLDWIDE

Greene, Tweed opened offices in the Netherlands, Italy, Korea, Israel and Taiwan during the 2000s. Two new engineering centers in Switzerland and Japan were also established.

2010 – 2013: LOOKING AHEAD

Enduro coatings, part of the OpTegra platform, provided extra protection for critical components in harsh environments.

The year 2010 was defined by two significant advances for Greene, Tweed. First, Xycomp® thermoplastic composite was enhanced with DLF® (Discontinuous Long Fiber) reinforcement and ProFusion® molding capability. This enabled the production of complex-shape, near-net molded parts for aircraft. Second, TechnaLoc® bonding was developed to complete the suite of integrated processes called OpTegra®. While especially relevant for the semiconductor industry, OpTegra's benefits extended across markets. A third advance – the launch of Arlon® 3000 XT in 2013 – raised the bar for engineering thermoplastics in oilfield applications. With improved performance at high temperatures, it increased component reliability in extreme drilling environments.

Physical expansion included the establishment of a semiconductor sales and engineering office in Fremont, CA. And in 2013, a Quick Response Center was built in Houston, TX. Providing 24-hour wear part turnaround, it minimized downtime for pumps users in the petrochemical business. That same year, Greene, Tweed commemorated its 150th Anniversary and held events around the world in celebration. At each occasion time was taken to reflect on past achievements, and to remember the products and processes forming the basis of future innovation at Greene, Tweed. As the organization continues to evolve, it will have a rich legacy of 150 years to build upon.

the years 2010 – 2013

2010

The OpTegra portfolio was made up of TechnaLoc bonding (left), ProTechna encapsulation (right), and Enduro coatings. This toolbox of capabilities enabled the integration of disparate materials in a single part.

2013

Greene, Tweed began in 1863 as a wholesaler of hardware and mill supplies. Since then, the company has evolved from making wrenches and hammers to manufacturing high-performance thermoplastics, perfluoroelastomers, and other engineered solutions around the world.

2010

GREENE, TWEED DEVELOPS PROFUSION®

ProFusion® molding capability enabled the production of near-net, complex-shape components for aircraft; features such as gussets, bosses and ribs could be integrated in a single part.

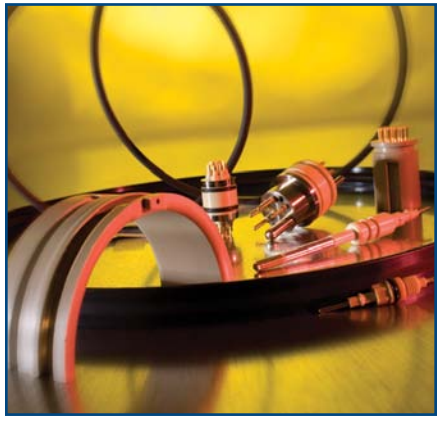
AEROSPACE – “REDEFINE FLIGHT.”

Building the future of flight with Xycomp® thermoplastic composites and proven sealing systems

“Redefine flight.” A tall order, but one which is critical to achieving sustainability in the aerospace industry. As the rate of air travel rises contiguous to population growth, the emissions contribution of aircraft is increasing. Government and industry organizations are now proposing reduction targets and passing incentives to curb this effect, and part of the effort includes building more fuel efficient aircraft that make widespread use of new technology and a variety of weight-saving composites. Providing the same strength and durability as metals, high-performance thermoplastic composites reduce overall aircraft weight and lower fuel consumption, thereby reducing emissions.

Contributing to this initiative has been a focus for us over the past several years and will remain so in the future. We have developed new thermoplastic composites and processes to manufacture small, complex-shape components which are lightweight and fully recyclable. They meet stringent safety specifications including FST (flame, smoke, toxicity) standards and the 15-minute burn-through requirement for aircraft interiors. Additionally, our manufacturing processes have been made cleaner and less wasteful. Greene, Tweed has been a leader in high-performance aerospace seals for over 50 years, and we are dedicated to delivering the same quality and performance with future innovations. Together with our strategic partners, we will continue to advance the use of thermoplastic-composite technology in coming years and help redefine flight for a sustainable tomorrow.

OILFIELD – “MAXIMIZE PRODUCTION, MINIMIZE DOWNTIME.”



Fueling the world with Chemraz high-performance seals and Seal-Connect electrical connectors

“Maximize production, minimize downtime” has been a goal of Greene, Tweed’s oilfield business for nearly 30 years, and the significance of this mantra is even greater today. As population growth drives a rapid increase in energy demand worldwide, exploration and production are moving into areas previously deemed impossibly harsh. The challenges involved in these environments are extreme; failure can result in loss of life, millions of dollars in repair, and widespread damage to surrounding ecosystems. In partnership with our customers, we are working to enable their technology to perform consistently and reliably in these demanding conditions.

Chemraz® perfluoroelastomers remain a leader in chemical-resistant seals, while Seal-Connect® electrical connectors safeguard data and power transmission in HPHT (high pressure, high temperature) applications.

Going forward, we are developing next generation materials that will improve attributes such as material strength, temperature range, and pressure resistance. Simultaneously, expansion into Asia and other regions is allowing us to provide local resources and engineering expertise to enable our customers’ technology around the world. Through this strategic partnership, we will ensure a steady flow of energy to the growing international community.

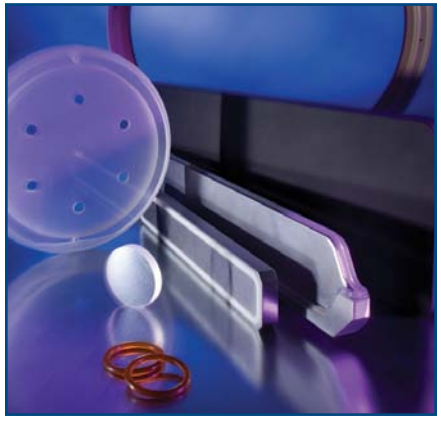
PETROCHEM & POWER – “SAFETY, RELIABILITY, EFFICIENCY.”

Optimizing the flow of refined products with Chemraz® high-performance seals and WR® & AR® thermoplastic composites

“Safety, Reliability, Efficiency.” For an industry charged with supplying the world’s essential refined products, achieving excellence in these three areas is critical. Leakage of hazardous fluids in a refinery can damage the environment and harm personnel, and downtime disrupts the flow of power and fuel to the global economy. Helping our customers streamline their operations and mitigate these risks has been a focus at Greene, Tweed for decades, and remains so today.

Historically we have consistently improved the safety and performance of pumps, compressors, mechanical seals and valves through innovation in materials and design. We continue that tradition today with developments such as our Xycomp® thermoplastic composite containment shell which eliminates eddy current loss in large seal-less magnetic drive pumps. Other advances include our Arlon® 4020 labyrinth seal which boosts efficiency through a unique, flexible tooth profile. And our AFB (Air Fan Bearing) split-design assembly reduces repair time in ACHE fans from several days to less than four hours. Working in partnership with industry stakeholders, we will continue to advance these and other total system solutions for a safer, more reliable and more efficient flow of essential refined products to the world.

SEMICONDUCTOR & SOLAR – “FASTER, LIGHTER, MORE POWERFUL.”



Pursuing the next generation with Chemraz high-performance seals and OpTegra® integrated solutions

“Faster, lighter, more powerful.” These are the drivers of today’s technological advancement, and as Moore’s Law has proven true the pace of progress has become exponential. Today’s computers are doing everything from analyzing golf swings to assisting in surgery, and in 2011 a computer named Watson beat human contestants in a game of trivia. Now, by the time a computer science undergraduate matriculates, half of their knowledge will be outdated. In the blink of an eye, the face of the future is changing.

To remain competitive in this high speed environment, our semiconductor customers must stay ahead of every new development. And at Greene, Tweed, we’ve been providing them with the reliable and effective solutions to do so for over 20 years. Our cleanroom manufacturing facilities were the first in the United States for semiconductor seals, and recognizing this need allowed us to forge long-term partnerships with fabs and OEMs around the world. As the industry has continually adopted new techniques with changing parameters, we have worked with our partners to adapt and improve our materials and overcome challenges. Our Chemraz® seals are designed to resist varying plasmas and temperatures, reducing particulation and ensuring cleanliness. And our range of integrated solutions leverage bonding, encapsulation and coating capabilities to provide an optimum mix of materials in a single part. With each solution we enable our customers to advance their technology. Together, we are contributing to the pursuit of the next generation.

Greene, Tweed celebrates 150 years of innovation in 2013!

Greene, Tweed is a world-class leader in the design and manufacture of high-performance materials and engineered components for the Aerospace, Oilfield, PetroChem & Power, and Semiconductor & Solar industries. Started in 1863 as a wholesaler of hardware and mill supplies, today the company leverages its comprehensive technical expertise to solve critical industry challenges. In addition, Greene, Tweed resources are located throughout the Americas, Europe and Asia, providing local support on a truly global scale.

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