



Photo courtesy of Pilatus Aircraft Ltd

## Innovation lands here

General Aviation | Business Aviation | Civil Helicopters |  
Military Helicopters, Trainers, and UAVs | Agriculture



ENGINEERING YOUR SUCCESS.



PARKER'S

# AIRCRAFT WHEEL & BRAKE DIVISION



## General Aviation and Agriculture

Air Tractor | Cessna | deHavilland |  
Diamond Aircraft | Epic | Quest | Lancair |  
Mooney | Piper | Textron Aviation | Thrush



## Business Aviation

Beech | Cessna | Eclipse | Pilatus |  
Piper | Textron Aviation



## Civil Helicopters

Leonardo Helicopters |  
Bell | Sikorsky



# Innovative braking systems that minimize risk, maximize performance

---

Aircraft manufacturers worldwide have come to rely on braking systems from Parker Aircraft Wheel & Brake. As experts in braking technology, we have over 80 years of safe takeoffs and landings to our credit, making us one of the world's most experienced, best known, and most respected wheel and brake manufacturers.

Our cross-functional teams of specialists work with customers and related technology experts to optimize design solutions for improved:

- Performance
- Thermal characteristics
- Weight
- Wear
- Reliability
- Cost-effective systems
- Delivery
- Support

As part of Parker Hannifin, the world leader in motion and control technologies, and a key division of Parker Aerospace, we have the depth of talent, resources, and technology to help the world's aircraft fly and land safely.

---



## Military Helicopters, Trainers, and UAVs

Bell | Boeing |  
Leonardo Helicopters |  
Sikorsky



# A SYSTEMATIC APPROACH

A proven five-step process that optimizes performance, improves reliability and maintainability, and provides lower cost of ownership

## 1 COLLABORATE

- Team with the customer to establish program objectives and define best value
- Work with other Parker technology partners for additional organization expertise facilitating a more complete solution
- Provide cross-functional program expertise

## 2 DEFINE

- Detail the system architecture
- Conduct trade studies
- Program system schematics
- Conduct system performance analysis
- Design, develop, and qualify components
- Customize options that enhance life and reduce costs



## 3 INTEGRATE

- State-of-the-art engineered solutions
- The mechanical and electrical interfaces from pedal to wheel
- Systems performance for wheels, brakes, rotor brakes, brake hydraulics, and other solutions
- Component design verification

## 4 VALIDATE

- Component development and qualification testing
- Support system integration rig testing
- Reliability, maintainability, and system assessment
- Flight test support
- FAA, EASA, ANAC, TC, and CAAC regulatory agency support



➔ Technical Support Hotline  
**(800) 272-5464**

➔ Live chat, catalogs, and manuals available

[www.parker.com/cleveland](http://www.parker.com/cleveland)



# A long history of shorter stops



## 5 SUPPORT

- Worldwide customer/ technical support and parts availability
- Certification documentation
- Product support and technical publications
- Catalogs, manuals, and support literature
- Comprehensive regional training programs
- Maintenance and fault isolation training
- FAA-certified repair station on site
- OEM engineer technical support



Arthur Parker launches Parker Appliance Company.

VanSickle Industries acquires Syncro Devices Inc., maker of hydraulic valves, shimmy dampers, dampers, check valves, power packs, and landing gear actuators.

Parker Hannifin acquires VanSickle Industries. Cleveland Wheels & Brakes, a division of VanSickle Industries, is renamed **Aircraft Wheel & Brake Division**, and merges with Parker Aerospace.

V-22 Osprey first carbon brake used in tilt-rotor landing gear application.

Division earns AS 9100 Section 2 certificate.

Sikorsky CH-53K development wheels, brakes, brake hydraulics, and rotor brake.

F-16 nosewheel.

- Diamond DA62 wheels and brakes.
- TAI Turkish Light Utility Helicopter wheels and brakes.
- Leonardo Helicopters AW609 wheels and brakes.
- Textron Denali wheels and brakes.

1918

1936

1951

1956

1969

1977

1978

1985

1990

2000

2003

2004

2007

2008

2014

2015

2020

2025

VanSickle Industries is founded by Elmer VanSickle.

Parker Aircraft established, headquartered in Los Angeles.

First Cleveland external brake system installed.

VanSickle Industries acquires Gerdes Products Company, maker of master cylinders and parking brake valves.

AH-64 Apache, our first military application, soon followed by the Sikorsky Black Hawk.

Pilatus PC-12 wheels, brakes, and hydraulics.

Division earns ISO 9000 certificate.

Eclipse very-light jet wheels, brakes, and hydraulic equipment.

HondaJet shut-off valve, master cylinders, and energy parking brake valve.

Piper M600 wheels, brakes, and hydraulics.

General Atomics Aeronautical Predator C wheels, brakes, and master cylinders.

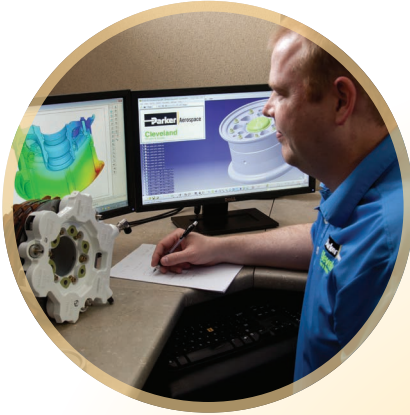
Pilatus PC-24 wheels and brakes.

Leonardo Helicopters AW169 wheels, brakes, and hydraulics.



# LANDING INNOVATION

Here's how we're **building competitive advantage** for manufacturers and the aftermarket



## Advanced analysis

From finite element analysis (FEA) and 3-D and dynamic modeling, to custom thermal analysis tools, our advanced capabilities simulate performance and structural behavior in a way that can significantly reduce development time and program risk.



## Standard design and development process

At Parker, program management is strongly supported by our standard design and development process (SDDP), which is a thorough system based on the principles of stage-gate. The process helps us to drive excellence in new product and technology development.



## Project management

Parker project managers are certified by the Project Management Institute, enabling them to manage the life cycle of multi-system or subsystem contracts. Project managers establish guidance across the enterprise that is efficient, consistent, and standardized, while supporting the pursuit and capture of new business opportunities.



## Lean programs

Our commitment to lean practices runs throughout our organization, where we employ the most advanced processes that yield unsurpassed quality and consistently on-time deliveries.



## Supply chain initiatives

By integrating sales and operations planning with inventory optimization, finished-goods strategies, supplier development, and Six Sigma quality practices, we are compressing lead times and ensuring that our customers' needs are met.



## Complete wheel and brake systems

With more efficient design, total system integration support, and optimized performance, complete wheel and brake systems can enhance safety, minimize tire wear and skidding, improve directional control, and build pilot confidence.





## Over 80 years of safe takeoffs and landings

With hundreds of FAA TSO, STC, and PMA qualifications on single- and multi-engine and rotor-blade aircraft, Parker's Cleveland Wheels & Brakes brand can be found on over 80 percent of the general aviation fleet. Our OEM engineering expertise combines with manufacturing excellence, plus rigorous testing beyond requirements, to make our equipment the proven leader in safety and longevity.

**We demand more so you needn't settle for less.** Our equipment is synonymous with better braking, smoother and more reliable landings, convenient worldwide availability, and valuable savings on maintenance, downtime, and labor. Which makes Cleveland Wheels & Brakes the unsurpassed choice.

From nose, main, and tail wheels, to steel and carbon brakes, plus master cylinders, shimmy dampers and world-class customer support, Parker's Aircraft Wheel and Brake Division is where business, military, and general aviation customers stop for reliable braking systems.



**Cleveland Wheels & Brakes are available globally through our network of worldwide distributors.**







Parker Hannifin Corporation  
Parker Aerospace  
**Aircraft Wheel & Brake Division**  
1160 Center Road  
Avon, Ohio 44011  
phone 440 937 6211  
fax 440 937 6416  
E-mail: [clevelandwbhelp@parker.com](mailto:clevelandwbhelp@parker.com)  
Technical Support Hotline: 800 272 5464  
[www.parker.com/cleveland](http://www.parker.com/cleveland)

