



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

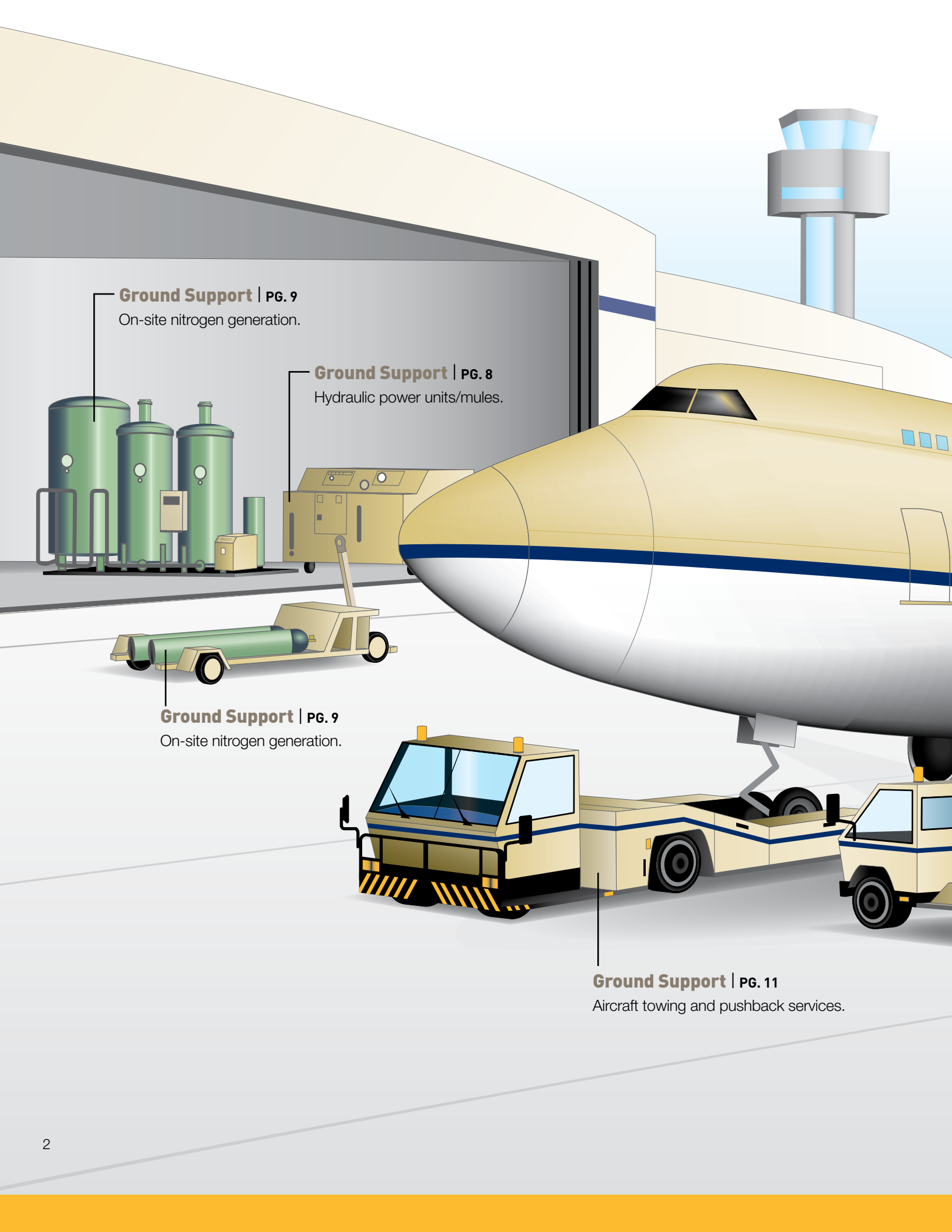


Aerospace Filtration

On-Board and Ground Support Engineered Systems



ENGINEERING YOUR SUCCESS.



Ground Support | PG. 9

On-site nitrogen generation.

Ground Support | PG. 8

Hydraulic power units/mules.

Ground Support | PG. 9

On-site nitrogen generation.

Ground Support | PG. 11

Aircraft towing and pushback services.

Parker Aerospace Filtration Solutions and Systems

Off the ground on time and safely back

Parker filters and filtration solutions enhance ground support operations, extend equipment life and help get aircraft back in the air. Filtration Group engineers work closely with the Parker Aerospace Group to develop special on-board applications that improve aircraft performance and safety.

Bulk Fuel Storage | PG. 6-7

Off-site storage, bulk fuel handling, filtration and fuel monitoring.

Ground Support | PG. 10

Mobile de-icing equipment, snow removal/runway cleaning equipment, jet bridges.

On Board | PG. 4-5

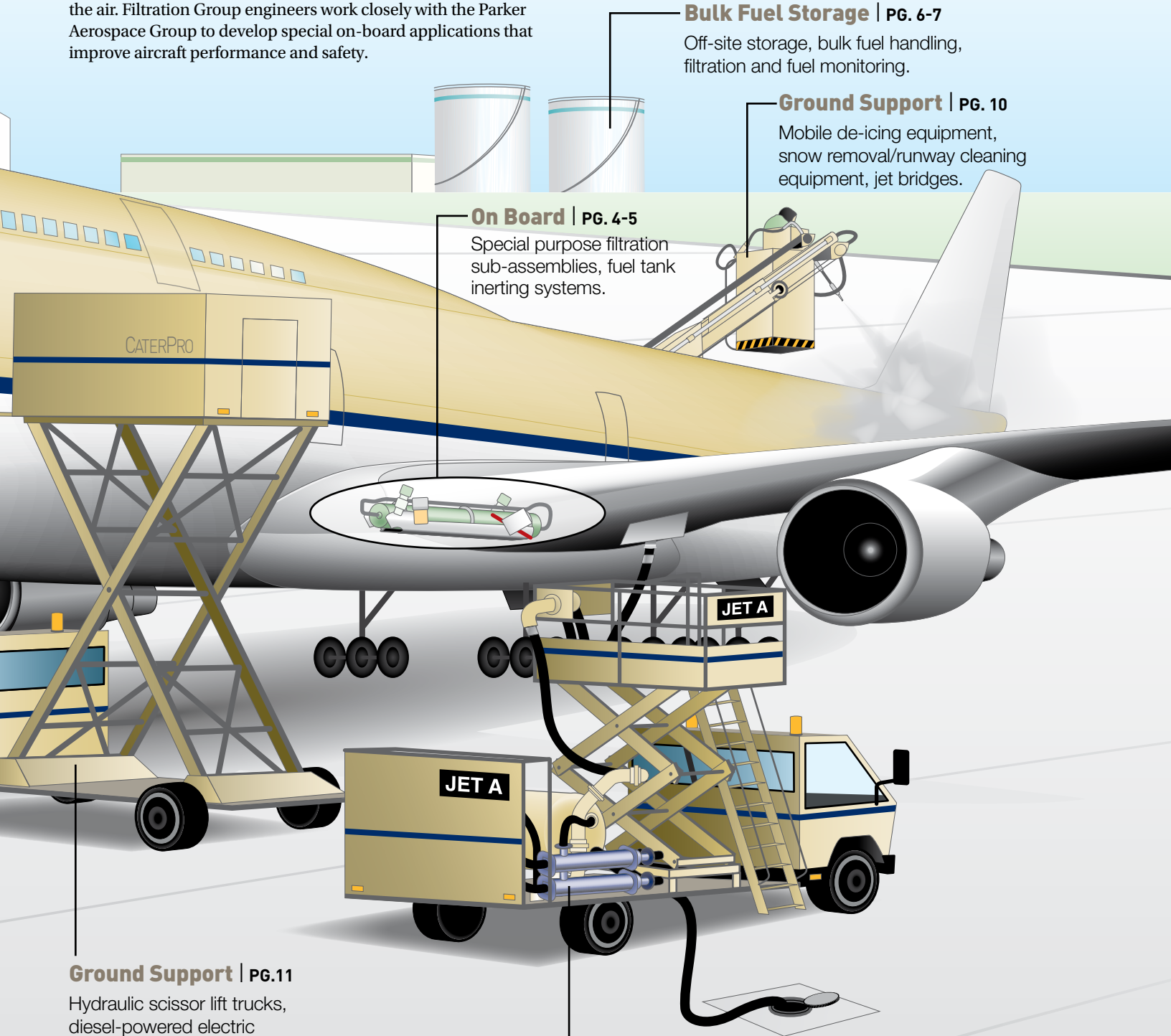
Special purpose filtration sub-assemblies, fuel tank inerting systems.

Ground Support | PG.11

Hydraulic scissor lift trucks, diesel-powered electric generation.

Ground Support | PG. 8

Hydrant system filtration, fuel trucks.



On-Board



Filter solutions that keep you up in the air

Parker's Aerospace and Filtration Groups collaborate to manufacture special purpose filtration sub-assemblies.

A Global Resource for the Aerospace Market

The Parker Filtration Group works hand-in-hand with the Parker Aerospace Group, Hydraulic Systems Division (HSD), to develop innovative, custom on-board solutions that help ensure safe operation, lower weight, protect flight-critical components and reduce maintenance costs. HSD is the global leader in fully integrated hydraulic systems. The Parker Filtration Group is recognized worldwide for filtration and fluid condition monitoring systems that protect against contamination, the number one cause of hydraulic system failure.





Fuel Tank Inerting Fiber Technology

Fuel tank inerting is an industry-recognized solution that significantly decreases the risk of fuel tank vapor flammability. The Parker Aerospace Fluid Systems Division, using Parker's patented permeable hollow-fiber-membrane bundle technology, has worked with airframe builders to develop inerting systems that deliver nitrogen-enriched air to fuel tanks, providing a much safer, inert gaseous environment.



Bulk Fuel Storage



Dirt and water can find a home in bulk fuel tanks

Every fuel transfer stage, from the refinery to the tank farm, presents an opportunity for dirt and water to contaminate the flow of jet fuel and end up in bulk storage tanks. Parker fuel/water separators (FWS) and micro filters (MF), strategically

installed at the inlets and outlets of bulk fuel tanks, intercept solids, saturated water and free water from upstream sources as well as any that may have accumulated in the tanks during storage.

Effective Solutions for Fuel Contamination Control

FWS Hydrocarbon Series Vessels

Parker's FWS series vessels use a two-stage separation system. The first stage coalesces the fuel/water emulsion using a high-efficiency filter media and a resin-impregnated fiberglass coalescing shell. The second stage uses a hydrophobic separator as a water drop barrier. A full range of API/EI (IP) 1581 5th Edition qualified combinations is available.



RVCT Series Clay and Vessels

Parker RVCT Series Vertical Vessels are used with hydrocarbon clay elements to remove additives and surfactants from Jet A and Jet A1 fuel, gasoline, kerosene and diesel fuel. Vessel construction is certified to 150 psi ASME Code Section VIII.



MF Micro Filters

Parker offers micro filters for fuel and hydrocarbons. The FS Synthetic high-efficiency micro filter cartridges feature a water-resistant, all-synthetic media providing 99.7% efficiency at micron ratings of 1 or 5; complying with API/EI 1590 2nd Edition (1 and 5 micron).



Replacement Hydrocarbon Filter Cartridges

Parker is a qualified supplier of API/EI 1581 and MIL STD aviation fuel coalescer and separator cartridges, EI 1583 monitor elements and API/EP 1590 micro filter cartridges. Cartridges feature injection molded nylon end caps, state of the art adhesives to seal the filtration media to the end cap and filter media composition specifically designed for each application.





Inline, Portable, and Zone 2 Approved Hazardous Area Fuel Monitoring Solutions

icountPD – On-line Particle Detector

The icountPD Particle Detector represents the most up-to-date technology in particle detection in fuel, hydraulic and phosphate ester fluids. The compact design fuel detector can be mounted on pipelines, hydrant systems, PLC controlled systems and mobile applications to monitor fuel condition and alarm or control automated fueling systems if fuel quality is out of specification. This revolutionary particle counter is a cost-effective solution to fluid management and contamination control.



icountACM20 Z2 – Portable Particle Analyzer

The icountACM20 Z2 is designed to be used to monitor various fuels from existing sampling points in hazardous locations such as refineries, pipelines, distribution terminals, and airport fuel supply systems all the way through to the point of uplift into aircraft. With Zone2 classification, the icountACM20 Z2 is the world's only ATEX approved particle analyzer.



icountACM20 – Portable Aviation Fuel Contamination Monitor

The icountACM20 is a portable particle analyzer designed to test and/or monitor and report aviation fuel contamination to DEFSTAN 91-91 Issue 6 Jet A-1 fuel specifications. This two-minute test procedure uses a laser optical scanning analysis and multi-standard ISO reporting. The analyzer also incorporates an on-board, rear-mounted pump that enables fuel storage/vehicle tanks and fuel drum monitoring.



Ground Support



Support from the ground keeps planes in the air

To make money, aircraft need to be up in the air, carrying passengers and freight and maintaining tight flight schedules. A smoothly running ground support system is as important to profitable operations as smoothly running planes. Parker filtration products and systems keep ground support vehicles and equipment performing smoothly, with minimum downtime and longer useful service life.

Hydrant System Filtration and Fuel Trucks

Fuel that has been stored in bulk storage tanks is filtered one more time after it leaves the hydrant system and before the plane leaves the ground. The fuel is filtered by what is known in the industry as a “filter cart”. Filter carts use the following Parker filters:

- Fuel Monitor Vessels and Cartridges
- Fuel Monitoring (see page 7)

At installations or gates where there is no hydrant system, fuel trucks are utilized for aircraft fueling. Fuel trucks use:

- Fuel Monitor Vessels and Cartridges
- Fuel Monitoring (see page 7)
- Racor Diesel Engine Filters

Fuel Monitor Vessels

Horizontal fuel monitor vessels containing EI 1583 cartridges will absorb free water from fuel to <15 ppm, as well as provide high filtration efficiency.



Fuel Monitor Cartridges

Aviation fuel monitor cartridges are qualified to API/EI specifications and can be retrofitted into many competitive housings.



Racor Filters

Parker Racor offers reliable oil, fuel, air intake, and crankcase ventilation filters for any diesel engine.



Hydraulic Power Units/Mules

Like a heart lung machine, the hydraulic power unit (mule) keeps fluid circulating through aircraft systems when the engines are not running, enabling hangar maintenance of hydraulic systems and components. These units use:

Parker's Hydraulic Filters

These hydraulic filters can be configured for in-line or in-tank filtration. The element has an increased dirt-holding capacity, reducing the need between service intervals.



High Pressure Hydraulic Filter

This high pressure hydraulic filter blocks pump-generated debris before it jams a valve or scores a cylinder.





Portable Filtration and Accessories

Different than the hydrant system filter carts described on the adjacent page, Parker makes portable hydraulic and fuel filtration systems, also known as filter carts. These carts are an ideal way to prefilter and transfer fluids into reservoirs or to clean up existing systems.

Parker Hydraulic Filter Carts

The 10GPM portable filter cart provides high efficiency contaminant removal with a two-stage filtration in series for cleaner fluid in less time. Optional particle indicator assures fluid cleanliness.



Fuel Polishing Cart

This portable fuel polishing cart is an effective way to filter diesel fuel, jet fuels, mixtures of biodiesel, and other petroleum hydrocarbon fluids in storage or transport.



Portable Filtration System

This portable filtration system is a unique 4GPM pump/motor/filter combination designed for conditioning and transferring petroleum based and water emulsion systems.



On-Site Nitrogen Generator Applications

Parker offers a dedicated range of nitrogen gas generation solutions for aerospace applications. Parker manufactures systems employing both hollow-fiber membrane and Pressure Swing Adsorption (PSA) nitrogen gas technologies. The benefits of on-site generation include nitrogen purity, convenient supply, lower cost than purchasing cylinders and elimination of cylinder handling. In addition to the applications shown below, Parker nitrogen generators are used in on-board fuel tank inerting systems (see page 5).



Oleo Strut Maintenance

Undercarriage Oleo struts dampen shock loads on touchdown. Nitrogen is the inert choice for the gas component of the spring and, unlike compressed oxygen-containing air, it will not promote oil 'dieseling' under sudden compression.

Escape Slide Inflation System

Escape slides and life rafts rely on nitrogen for inflation because of its inert, non-explosive properties.

Aircraft Tire Inflation

Nitrogen is used both at the gate, if required during aircraft turnaround, and in the wheel and brake shop during maintenance overhaul.



Ground Support

Ground Support Applications

Parker's hydraulic and engine filtration solutions are on board your mobile equipment ensuring safe reliable operations and minimum downtime for aircraft.

- Hydraulic Filters
- Diesel Engine Filters
- Hydraulic Accessories
- Condition Monitoring Equipment (Hydraulic and Fuel)



Mobile De-Icing Equipment

Typically, mobile de-icing equipment incorporates a number of fluid circulating systems including a heated antifreeze fluid (glycol and water) system for de-icing, a compressed air system that propels the antifreeze fluid toward the aircraft surfaces, a hydraulic system to power the boom and a diesel engine to power the carrier vehicle, hydraulic and air pumps. Parker provides a variety of filters for each of these systems.



Snow Removal/Runway Cleaning Equipment

Snow removal and runway cleaning equipment must be ready to go, night and day, in the worst weather conditions. Parker filters for diesel engines and hydraulic systems on tractors, trucks and other mobile equipment help to keep them running--around the clock if necessary.



Jet Bridges

Jet bridges speed up passenger boarding by allowing them to board large commercial jets without walking outside or climbing ramp stairs. They also enhance security operations by restricting access to the aircraft to those who have passed through security and the loading gate. They incorporate a number of electric and hydraulic systems that swing the bridge, raise and lower it to match aircraft sill heights and extend/retract the bridge. These operating systems require proper filtration to protect sensitive components.

Ground Support Products

Medium Pressure Hydraulic Filters

These medium pressure hydraulic filters feature a lightweight design, enable easier servicing, reduce solid waste and minimize disposal costs.



High Pressure Hydraulic Filters

High pressure hydraulic filters protect sensitive system components of the vehicles' hydraulic system.



Return Line Filter

Cost effective return line filters provide protection from system generated contamination.



Air Breathers and Dryers

Highly efficient breathers and dryers protect against airborne particulate and moisture generated contamination.





Hydraulic Scissor Lift (High-Lift) Trucks

Scissor lift (catering) trucks integrate a number of fluid handling systems for lift and platform positioning and are critical to quick turnaround time between flights. High-lift trucks also provide adjustable platforms for maintenance operations. Parker service equipment, hydraulic accessories and engine replacement filters keep these versatile vehicles running smoothly.



Aircraft Towing and Pushback Services

Pushback tugs and tractors are “engines on wheels.” These high-powered, low-profile vehicles perform fairly simple yet vital functions that make the operator the temporary “pilot” of the plane while it is being pushed away from the gate prior to departure or being towed to and within a hangar. Generally diesel powered, these vehicles depend on Parker filters to keep their propulsion and hydraulic systems (towbarless versions) running smoothly.



Diesel-Powered Electric Generation

To keep passengers comfortable after they have boarded, and before the plane's engines are powered up, mobile diesel-powered electric generators are used to provide 28V DC and 110V AC current for lighting, ventilation and air-conditioning/heating systems. Parker Racor filters help diesel engines run more efficiently while extending generator life.

Desiccant Breather

Desiccant breathers remove ingressed moisture and solid particulate as well as condensation during hydraulic system operation with clear color change indication when replacement service is required.



Continuous Hydraulic Fluid Monitoring

Continuous hydraulic fluid monitoring allows systems to perform at optimum levels.



Contamination Monitoring

Contamination monitoring not only ensures off-line analysis with precise quality, but is required by some Aerospace Specifications.



Parker Racor Filters

Parker Racor offers oil, fuel, air intake, and crankcase ventilation filters for any diesel engines.



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