



Stratoflex

*High Performance
Quick Disconnects and
Hose Assemblies for
Space Flight Applications*

*Catalog 106-Space
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The World Standard

For performance of quick disconnect couplings and hose assemblies that is out of this world, Parker Stratoflex is the world standard.

Exceptional performance is the single standing requirement for any product that is delivered into space. Parker Stratoflex brings the highest level of expertise in quick disconnect couplings and hose assemblies for every space application we are associated with.

Beginning in 1957, Parker products were part of the Scout Missile program. As the missiles were fired from the launch pad, Parker T-Zero couplings separated and sealed as designed. Today, over 150 Parker Stratoflex part numbers have won acceptance on the Space Shuttle and over 500 additional Parker Stratoflex part numbers have earned their place on the International Space Station.

When talking about the world standard, only one quick disconnect and hose assembly supplier offers performance that is out of this world. Parker Stratoflex.



Parker Stratoflex design engineers take all the details into account including friendly features, maintainability and durability.



SWIVELS



CHECK VALVES



PROPULSION COUPLINGS UP TO 6" AND LARGER



TWO-STAGE LEVER OPERATED FLUID COUPLING

Designed for Safe and Easy operation by EVA-suited Astronauts on the International Space Station. Featuring low force Two-Stage Operation where Soft-Dock and Valve Open/Close are separate functions. Pressure Balanced Design allows Low Force valve open and close function at full system pressure. Small Envelope and Low Pressure Drop Valving and redundant sealing. Certified for Manned Space Flight uses.



THREAD-LOK QUICK DISCONNECT FLUID COUPLINGS

Designed for friendly barehanded or gloved use in the Pressurized Microgravity areas of the International Space Station. Featuring low-torque rotary mate and demate function, redundant sealing, small envelope, with very low pressure drop. Keying features to prevent accidental cross connection of fluid lines. Certified for Manned Space Flight use.



NON-LOCKING "AUTOMATIC" QUICK DISCONNECT FLUID COUPLING:

Designed for use in umbilical and "hands-free" applications in internal pressurized and external unpressurized areas of manned and unmanned space vehicles and in T-Zero connections for Launch vehicles. Featuring axial misalignment capability up to .125", redundant sealing, small envelope and low pressure drop. Line sizes up to 6" diameter.

Our crew of hardware is experienced in space travel.



METAL HOSE ASSEMBLIES

Precision-crafted flexible metal hose assemblies are capable of conveying both benign and hazardous media within extreme, low to high temperature limits. Also available as integral assemblies with Stratoflex fluid couplings and high pressure swivel joints.



TEFLON HOSE ASSEMBLIES

Durable, Light weight, high pressure assemblies with pressure capabilities up to 4,000psi. Provided with a wide variety of end connections and options. Also available as integral assemblies with Stratoflex fluid couplings and high pressure swivel joints.

Parker Stratoflex parts have been there....and back. These components contribute to the success of each system and subsystem which they are specified on. So while our crew doesn't wear space suits, we view them just as critical for a successful mission.



PUSH-PULL & VEHICLE-TO-GROUND SUPPORT FLUID QUICK DISCONNECT COUPLINGS

Stratoflex Push-Pull quick disconnects are used in ECLSS, Hydraulic, Thermal Control and various experiment support systems in the Space Shuttle Orbiter, Space-Lab and Space-Hab fluid systems. Vehicle-to-Ground Support couplings are used for preflight checkout of systems ranging from Hydraulic to monopropellant fluids and waste gases.



RIGID, HARD LINE TUBE ASSEMBLIES

Stratoflex provides rigid tubes to meet virtually any bend or end fitting configuration requirement necessary. In-house precision welding, NDT, X-ray and test facilities insure compliance with stringent NASA requirements. Tube Assemblies can also be provided with a combination of flexible Metal/Teflon hoses, Quick Disconnects or Swivel Joints.



TWO-STAGE HIGH PRESSURE ROTARY QUICK DISCONNECT COUPLINGS

Used in high pressure gas systems in internal pressurized and external unpressurized areas of manned space vehicles. Featuring low force Two-Stage Operation where Soft-Dock and Valve Open/Close are separate functions. Small Envelope and Low Pressure Drop Valving and redundant sealing. Keying features to prevent accidental cross connection of gas lines.



Rocket/Missile

Stratoflex products are used in fluid systems on expendable launch vehicles ranging from the Scout missile to the Delta IV-EELV. System fluids run the gamut from simple low-pressure gaseous nitrogen and flight control hydraulics to hazardous monopropellant fluids and oxidizers including nitrogen tetroxide, hydrogen peroxide and hydrazine. A long history of collaborative efforts and experiences with NASA, the U.S. and International space system contractors has given Stratoflex the background and ability to provide extensive, knowledgeable support to our Launch Vehicle Customers.



NON-LOCKING AND T-ZERO COUPLING



International Space Station

External applications for Stratoflex products include Liquid Ammonia, water, and FC-72 Thermal Control Systems, High Pressure Gaseous Oxygen and Nitrogen. Internal applications involve Thermal Control water, Waste recovery management, Vacuum systems, High and Low pressure gaseous nitrogen, High and Low pressure gaseous oxygen, Active Rack Isolation Systems, Passive Rack Isolation Systems, JEM Birthing Mechanism and the Sample Delivery System. Stratoflex products help maintain the smooth, safe and reliable operation of these critical systems in virtually all modules of the Station.



LEVER OPERATED TWO-STAGE EVA QUICK DISCONNECTS



Satellite & Space Probes

Whether orbiting the Earth or venturing to the outer reaches of the Solar System, Stratoflex products are used in critical applications requiring High Reliability and Long Life. Water Boiler systems, Thermal Control systems, pre-launch mono-propellant systems and attitude control systems rely on the Long Life and Reliability Stratoflex products are known for.



PUSH-PULL AND GROUND SUPPORT QUICK DISCONNECTS



Space Shuttle Orbiter

Stratoflex heritage on the Space Shuttle dates back to the first launch and beyond. Used in systems including ECLSS, Active Thermal Control, APU mono-propellents, Flight Control Hydraulics, Lubricating Oil and High Pressure Oxygen and Nitrogen gas systems Stratoflex products have proven their High Reliability and Safe Operation time and again. Many of our Space Shuttle components have seen over 20 years of service on the orbiter program without replacement.



ROTARY TWO-STAGE QUICK DISCONNECTS



**PUSH-PULL AND GROUND
SUPPORT QUICK
DISCONNECTS**



**RIGID HARD TUBE
ASSEMBLIES**



TEFLON HOSE ASSEMBLIES



**METAL AND TEFLON HOSE
ASSEMBLIES**



**THREAD-LOK QUICK
DISCONNECT COUPLING:**



**NON-LOCKING AUTOMATIC
COUPLING:**



METAL HOSE ASSEMBLIES



**RIGID HARD TUBE
ASSEMBLIES**



**NON-LOCKING AUTOMATIC
COUPLINGS**



**PUSH-PULL AND GROUND
SUPPORT QUICK
DISCONNECTS**



**NON-LATCHING AUTOMATIC
COUPLINGS**



**RIGID HARD TUBE
ASSEMBLIES**

Why Parker Stratoflex quick disconnects are superior:

As part of the extensive fluid connector line which bears the Parker name, each quick disconnect coupling is designed with performance enhancing features necessary for its intended space application: Anti-cross coupling indexing, low torque-mating, redundant sealing, low friction and abrasion resistant coatings, safety devices and sophisticated sealing components.

Quite simply, Parker Stratoflex quick disconnect couplings are engineered to achieve the requirements of the customer.



Parker Stratoflex is the leading name for hose assemblies for airframe and space applications.

For smooth bore or convoluted, for metal hose or Teflon, with rapid tubing or without and unusual fitting requirement - a large reason Parker Stratoflex continues to dominate both airframe and space industry needs for hose assemblies is due to our manufacturing capabilities that allow us to provide these products on schedule. In fact, our ability to support the growing airframe production requirements with hose assembly products, together with our technical ability to engineer them for space applications, is a clear example of how much we can do.



Even the best concepts need the right tools.

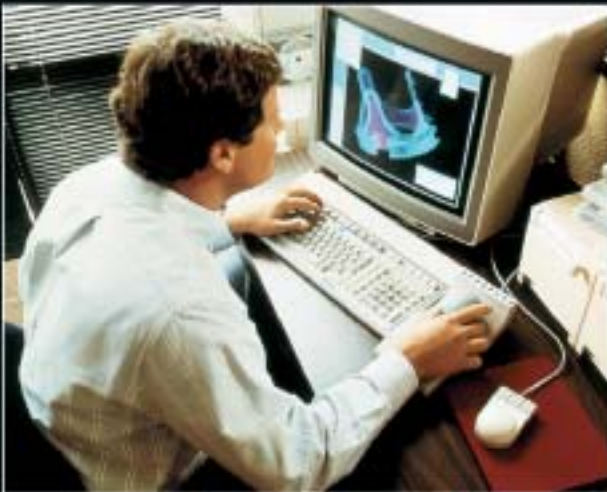
Parker Hannifin, Stratoflex Products Division, maintains the right facilities to engineer and produce the most advanced, precision fluid connecting devices for space applications.



Our product design and engineering employs the use of Catia, Anvil 5000 and Unigraphics to accelerate connector and assembly development and to provide precise dimensional data for better overall system design. Parker Hannifin's commitment to continuously improve engineering equipment and design software is another indication of our resolve to be a long term player in supplying products to fit the needs of space customers.

Also on location at the facility is a 2700 sq. ft., Class 100,000 level clean room in accordance with NASA requirements SN-C-0005 or MIL-STD-1246. This capability allows us to maintain the cleanliness level of space program parts without the use of outside sources and enable us to maintain better control and handling of the parts.

These capabilities, combined with extensive CNC milling and lathe manufacturing, allow Parker Hannifin, Stratoflex Products Division, to support the requirements of all our space customers throughout the world.



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